Northumbria Research Link

Abstract

Literacy is a 21st Century fundamental human right and children who struggle to break the code to literacy continue to be challenged in learning and to experience a poorer quality of life. In spite of a whole body of literature concluding that *structured* *m*ulti*s*ensory *l*iteracy *i*nstruction (SMSLI), which embraces basic linguistic knowledge, is effective in improving reading skills, early educators are either unaware or misinformed about explicit language knowledge they need to know in order to address early literacy in the classroom. When compared to studies on reading, little research on teachers' knowledge and early literacy instruction has been done. Such research has never been addressed on a national scale. The author decided to undertake this research path following years of immersion in education in Malta and perceived lacunae in early educators' knowledge. The purpose of this research is to explore early educators' awareness and knowledge of SMSLI. A mixed-methodology approach was employed in order to explore this issue on a national level (questionnaires), as well as investigate professionals' experiences of the effect of SMSLI training on their professional development (focus groups). Descriptive statistics indicate an incomplete and incorrect body of knowledge. Results highlight marked deficits in basic language constructs knowledge and awareness of SMSLI, and indicate that exposure to training increases the required language constructs to address SMSLI. In theory, the conclusion from this research is that awareness of SMSLI leads to students' increased reading success. Professionals indicating knowledge in SMSLI evidenced more confidence in knowledge and abilities to teach early reading skills than they actually have. Relevant recommendations for formal training, continued professional development and further research with professionals, parents and pupils' literacy scores are suggested.

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Dedication

This work is dedicated to my husband Joseph, who has supported me throughout this research process practically, cognitively and emotionally;   who is always so present in my life and whom I can truly call my better half;

to my son Aaron, whose courage in front of adversity always leaves me in awe, and for his support in data inputting;

to my daughter Deborah, whose enthusiasm for life fires me to keep going in times of disillusionment and when I want to give up, and for her support in proof reading;

and to the memory my parents Maria Dolores and Carmelo Attard, who passed on to us a legacy of love and respect for each individual, for education, for ethics, for professionalism, for integrity and for truthfulness.

I would also like to dedicate this work to children and adults with dyslexia locally and worldwide. The years I have been working with persons with dyslexia have left me, on the one hand, with so much respect and so much admiration for their qualities, resilience and achievements; and, on the other hand , with so much sadness and frustration that classrooms often neither appreciate their abilities nor address their needs.

It is time for SMSLI to invade the classroom.

Acknowledgements

I thank my family for bearing with me during this six-year process and for friends and family members who encouraged and supported me throughout this journey. I am also grateful for the interest, attention and time they invested to listen to me and to support whenever I needed to share.

I am indebted to my dissertation supervisor Professor John Swain for his commitment and encouragement. His insightful feedback and calm, continuous empowerment has helped me grow as a researcher. I would also like to thank Dr Toby Brandon for his feedback and support; and Dr Liberato Camilleri for his infinite patience, expertise, attention and time to help me process and make sense of the statistical data. I am also thankful to Professor Mary Anne Lauri; and to the University of Malta for awarding me a scholarship and for continuously supporting me. Special thanks go to Charmaine Agius Ferrante, a colleague and a friend, with whom I have walked this research process in space and time.

Finally, I want to thank the children, the parents and the professionals whose experiences and contribution to my personal and professional experiences provided me with the enthusiasm to embark on this research process; and all the Maltese early educators who chose to support and contribute to this research and give me their time, attention and experiences. My dream is that no child will need to say:

> *She makes me read in class and I cannot.*
> *Please ask her [the teacher] not to embarrass me anymore. It hurts.*
> (Pippa, a 9-year old Maltese girl whom I assessed)

Author's Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the School Ethics Sub Committee, School of Health, Community and Education Studies, Northumbria University on January 2008, as well as from the University of Malta's Research Ethics Committee on August, 2006.

Ruth Falzon
February 27th, 2012

List of Abbreviations

AACTE	American Association of Colleges for Teacher Education
APA	American Psychological Association
BTEC	Business and Technology Education Council
CAST	Centre for Applied Special Technology
CBI	Confederation for British Industry
CPD	Continued Professional Development
B.Ed. (Hons)	Bachelor of Education (Honours)
DCSF	Department for Children, Schools and Families
DES	Directorate for Educational Services (Malta)
DfES	Department for Educational Studies
DoI	Department of Information, Government of Malta,
DPE	Department of Primary Education (University of Malta)
DQSE	Directorate for Quality and Standard in Education (Malta)
DVRG	Domestic Violence Research Group
EFA	Education for All
ESL	Early School Leavers
EC	European Council/Council of the European Union
EPPE	Effective Provision of Pre-school Education
ESL	Early School Leavers
EC	European Council/Council of the European Union
ECTS	European Credit Transfer and Accumulation System
EPPE	Effective Provision of Pre-school Education
ETUCE	European Trade Union Committee for Education
EU	European Union
FES	Foundation for Educational Services
FG	Focus Group
FGs	Focus Groups
FoE	Faculty of Education
FT	Formal Training
GLH	Guided Learning Hours
GoM	Government of Malta
HEC	The Texas Reading First Higher Education Collaborative
HMI	Her Majesty's Inspectorate
IC	Instructional Consultation model
IEPs	Individual Educational Programmes
IKGT	Initial Kindergarten Training

List of Abbreviations

IPA	Interpretative Phenomenological Analysis
IRA	International Reading Association
ITP	Initial Training Programmes
ITT	Initial Teacher Training
KG1	Kindergarten class for three-year-olds
KG2	Kindergarten class for four-year-olds
KGA	Kindergarten Assistant
L1	First language/mother tongue (L1)
L2	Second language (L2)
LD	Learning Disabilities was coined in 1963 by Dr Samuel Kirk during a conference in Chicago. Kirk was a psychologist who had worked extensively with parents of children who were manifesting errors such as reversals and sequencing in literacy. He suggested to parents that they should refuse unwieldy terms such as "minimal brain dysfunction" or "strephosymbolia" and start referring to their children as having a Learning Disability (LD). LD was unanimously accepted as the best term which embraces the profile (Kirk, 1963; LDA, 2010)
LDA	Learning Disabilities Association
LEA	Language Experience Approach
LSA	Learning Support Assistant/ Class Facilitator
MAPS	McGill Action Plan system
MATC	Mater Admirabilis Training College – Initial Teachers' college between the fifties and seventies which took care of teacher training before the University of Malta took over this training
MAST	The Malta College of Arts Science and Technology
MAPS	McGill Action Plan System
MEYER	Ministry of Education, Youth and Employment (Malta)
MOEDPRO	Ministry of Education Press handout
ms	mean score
MSA	Multisensory Approaches
MST	Multisensory Techniques
NAMES	National Association for Educational Progress (American)
NCES	National Centre for Educational Statistics (American)
NDEA	National Defence Education Act (American)
NEA	The American National Education Association
NEETS	Not in Education and Employment or Training
NICHE	National Institute of Child Health and Human Development (American)
NLS	National Literacy Strategy (UK)
NMC	The Maltese National Minimum Curriculum

List of Abbreviations

NRP	The American National Reading Panel
NSO	National Statistics Office [Malta]
OECD	Organisation for Economic Co-operation and Development
Q	Question
r	respondent
REA	Reading Excellence Act
SBR	Scientific Based Research Movement
SBRI	Scientifically Based Reading Instruction
SD	Standard Deviation
SEC	Secondary Education Certificate (equivalent to GCSEs in the UK)
SLP	Speech and language pathologists
SMSLP	Structured Multisensory Literacy programmes
SMSLI	Structured MultiSensory Literacy Instruction
SMT	Senior Management Team
SpLD	Specific Learning Difficulties
ST	Standpoint Theory
TP	Teaching Practice
UD	Universal Design
UDL	Universal Design Learning
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organisation
UREC	University (of Malta's) Research Ethics Committee
UoM	University of Malta
VAKT	Visual - Auditory- Kinaesthetic-Tactile
WWA	Whole Word Approach

CHAPTER 1
Literacy for all!
My Cognitive and Emotive Journey

Literacy has never been more necessary for development; it is key to communication and learning of all kinds and a fundamental condition of access to today's knowledge societies. With socio-economic disparities increasing and global crises over food, water and energy, literacy is a survival tool in a fiercely competitive world. Literacy leads to empowerment, and the right to education includes the right to literacy - an essential requirement for lifelong learning and a vital means of human development and of achieving the Millennium Development Goals. (Richmond, Robinson & Sachs-Israel, 2008, p. 9)

Literacy is a major tool to access all learning and education and is by definition a human right, often seen as a means to address poverty and oppression (Adams, 2009; Freire, 1970; UNESCO, 2005). In his accepting letter to the presidential nominations, assassinated US President James A. Garfield (1880) states "next in importance to freedom and justice is education, without which neither freedom nor justice can be permanently maintained (para. 3)." The post-war era has seen literacy on the educational and political agenda at a global level where it is often perceived to be important on educational, economic and political levels (e.g. Clinton, 1997; Cameron, 2011). Hirsch (1996) proposes that failing to teach children what they *must* learn in order to be able to cope with further learning in school is the greatest form of injustice in education which can actually be prevented.

This study builds on two basic premises: (a) literacy is vital for and an access to education, and is therefore a fundamental human right; (b) effective early literacy techniques help make the literary learning process more effective and expedient, leading to independent and effective access to learning (Adams, 2009; Moats, 1999; Stanovich, 1986).

Literacy - A Necessity for Living?

In a context where globalization is placing new demands on the kinds of 'literacies' we need both in our work and in the daily demands of everyday life, literacy is an access to learning and education and directly affects quality of life. A good quality basic education equips pupils with literacy skills for life and further learning. In most developed and developing countries literacy skills have become fundamental to daily living and affect the quality of the social, political, civic, economic and personal lives of citizens. Where literacy still does not have a fundamental function, oppression and poverty prevail (Freire, 1970). Johnson and Kress (2003) note that "globalization is frequently thought about in economic terms alone, but there is equally a cultural globalization which is no less, maybe even more, potent in its shaping to the ways in which we communicate and represent meaning" (p. 5). Educational opportunities depend on literacy. UNESCO (2005) perceives literacy as a human right, a tool of personal empowerment, a means for social and human development, and at the

heart of basic education for all. The Education for All (EFA) UNESCO committee (UNESCO, 2005) notes that eradicating poverty, reducing child mortality, addressing population growth, achieving gender equality and ensuring sustainable development, peace, democracy and empowerment are some of the good reasons why literacy is at the core of EFA. Since its foundation in 1946, UNESCO has been at the forefront of global literacy efforts and is dedicated to keeping literacy high on national, regional and international agendas. However, with one in five adults (c. 796 million) lacking minimum literacy skills and 67.4 million children still not attending school, UNESCO's literacy programmes aiming to create a literate world and promote literacy for all remain an "elusive global target" (UNESCO, 2011).

The 1997 International Adult Literacy Survey (Kirsch & Murray, 1998; OECD, 2003a) concludes that literacy levels have a direct effect on income, employment, health and lifelong learning; and individuals with lower levels of literacy are more likely to be on social welfare, experiencing poverty or involved in crime, and less likely to be working full-time. Alternatively, literate parents are more likely to send their children to school and are better able to access continuing educational opportunities, whilst literate societies are better geared to meet pressing and continuous developments (UNESCO, 2011). A comparison of the 2000 and 2003 PISA reports (OECD, 2003b) indicates very mild variations in levels of literacy, although proportions did decrease significantly in a few countries where illiteracy was relatively high in 2000 (e.g. Latvia and Indonesia), suggesting some improvement in the quality of some school systems during this period.

OECD (2003b) notes that although it was thought that oral and aural modes of communication used for the telephone and television would replace the printed text, the exact opposite has happened. Printed text has gained in importance as a means of communication in all aspects of life. Literacy allows for coping skills in the modern environment, giving individuals the possibility to access society, institutions, available resources and structures of communities such as courts, commerce and entertainment. Literacy also affects how we develop cognitively as it enhances and supports the process of learning (OECD 2003b).

In spite of this scenario, Birdwell, Grist and Margo (2011) report 16 per cent of British children making no progress in English and Maths between the ages of seven and eleven, and eight per cent leaving primary school with very low levels of literacy and/or numeracy. Furthermore, in a context where 95% of children can learn how to read (Moats, 1999), whereas expected levels for writing of 11-year-old has risen from 54 per cent in 1999 to 67 per cent in 2006, there was no increase between 2006 and 2009 (UNESCO, 2011). The National Centre for Educational Statistics - NCES - (1999a) and the National Association for Educational Progress - NAEP - (2005) quote similar alarming figures in the United States: 33% of fourth grade students (10-11 year olds), out of which 60% belong to minority groups, are unable to read clearly and fluently simple books; 38% of fourth graders are reading below basic levels, and 29% of eighth graders are even worse at reading. Furthermore around 25% (70 million) of Americans have reading difficulties and less than functional literacy, whilst over 50% of adolescents with a history of criminal and substance abuse evidence reading problems. Goldirova (2008) reports increasing numbers of Europeans with poor literacy skills, with low performance in reading increasing over a six-year span.

The Maltese National Statistics Office (NSO, 2010) quotes 11.24% illiteracy in 1995 and 7.2% illiteracy in 2005, with 1.7% illiteracy among 11- to 19-year olds in 2008. A baseline reading assessment to seven year olds outlined 18-20% literacy difficulties (Mifsud, Milton, & Brooks, 1998; Mifsud, Milton, Hutchinson & Brooks, 2000). In Europe, one in seven quits education or training without adequate qualifications, whilst in Malta, although rates have declined over a nine-year period from 54.2% in 2000 to 36.8% in 2009, early school leavers (ESL) remain the highest in the EU (EU commission, 2011) whilst 40% do not attain the School Leaving Certification (NSO, 2010). The 2010 Confederation of British Industry (CBI) survey concludes that 52 per cent of employers were dissatisfied with school leavers' basic literacy, whilst Birdwell et al. (2011) report "anger from employers that after 11 years of education, literacy and numeracy skills can often be so bad" (p. 47). Employers also feel that the burden of upgrading these skills should not fall on them or, if it does, the Government should provide compensation.

Birdwell et al. (2011) report that it is estimated that for every sterling invested in programmes to address poor literacy and numeracy, (e.g. Every Child a Reader or Every Child Counts) there is a return of £11 to £19 over individuals' lifetimes. Access to the printed text paves the way for learning and economic growth and justifies the importance given to ensuring that young learners learn to read as early and as expediently as possible. The path to efficient reading starts with reading visually and ends with reading visually. It is the process that leads to efficient automatic visually accomplished reading that is the focus of this research, in a context where the more efficient this process of early literacy learning is, the faster is the access to and success in learning. The speed and effectiveness of this early literacy learning process affects success in learning and has a Matthew Effect (Ehri, 2002; Rigney, 2010; Stanovich, 1986, 2000).

I value the 'Matthew Effect' as I see it reflected in the concepts of quality of life and EFA. Coined by Robert K. Merton in 1968, the term derives its name from "For to him who has shall be given and he shall have abundance; but from him who does not have, even that which he has shall be taken away (Matthew 25:29, King James Version)." Merton describes how, in science, eminent and established scientists will often get more credit than comparatively unknown researchers, even if their work is similar (Rigney, 2010). Stanovich (1986, 2000) adopts this term with regard to early reading success and school achievement. He describes the phenomenon that early literary success usually leads to later successes in reading and general learning, whilst failing to learn to read before the third or fourth year of primary schooling may indicate life-long problems in learning new skills. Since non- or weak readers would read less and have less access to the printed text, the gap between them and their peers would increase and they would fall further and further behind in school, also resulting in higher school drop-out rates (Stanovich, 1986, 2000). Adams (1990) cites Stanovich's work and stresses:

> Slow reading acquisition has cognitive, behavioral, and motivational consequences that slow the development of other cognitive skills and inhibit performance on many academic tasks. In short, as reading develops, other cognitive processes linked to it track the level of reading skill. Knowledge bases that are in reciprocal relationships with reading

are also inhibited from further development. The longer this developmental sequence is allowed to continue, the more generalized the deficits will become, seeping into more and more areas of cognition and behavior. Or to put it more simply - and sadly - in the words of a tearful nine-year-old, already falling frustratingly behind his peers in reading progress, 'Reading affects everything you do.' (pp. 59–60)

In this context, the relevance of early literacy success becomes more important, leading to the need of establishing the most effective and expedient teaching techniques to address literacy in the early years.

Early literacy classroom instruction is considered a core contributor to a high incidence of literacy challenges (e.g. Adams, 1990; Birsh, 2005; Moats, 1994, 2000; Moats & Lyon, 1996; Spear-Swerling & Brucker, 2004). Research findings attribute poor classroom instruction to a lack of basic understanding of the concepts related to language structure. Moats (1999) states that:

Teachers must understand the basic psychological processes in reading, how children develop reading skill, how good readers differ from poor readers, how the English language is structured in spoken and written form, and the validated principles of effective reading instruction. The ability to design and deliver lessons to academically diverse learners, to select validated instructional methods and materials, and use assessments to tailor instruction are all central to effective teaching [of early literacy]. (p. 13)

whilst Moats and Foorman, (2003) conclude that phonics instruction requires teachers "to lead students through multilayered, complex, and variable spelling correspondences at the sound, syllable, and morpheme [unit of meaning] levels [and in-depth linguistic understanding of the] relationship among word structure, grammatical rule, and meaning" (p. 24).

Adams (1990) emphasizes that the key role of phonemic awareness is to foster an understanding of how the written text works. Basic language constructs necessary for such understanding include phonological awareness, the alphabetic principle, phonics, morphology, and sentence and word structure. Explicit linguistic knowledge of such concepts and data taught in a direct systematic manner is essential for the effective early literacy teaching of decoding skills taught in a language rich context (e.g. Moats, 1994; NICHD,

2000). This is necessary for developing accurate, automatic word recognition needed to glean meaning from printed texts through fluent effortless reading. Research findings repeatedly conclude that direct teaching of linguistic structure concepts embedded in exposure to rich vocabulary and varied and interesting texts are essential to beginning and challenged readers (Adams, 1990; Moats, 1994), and the use of Structured Multisensory Literacy Instruction (SMSLI) with beginning readers results in more effective readers (e.g. Bos, Mather, Dickson, Podhajski, & Chard, 2001).

The concern which germinated the idea for this study is that my lived experience and the literature (e.g. Lyon, 1999) led me to query whether (a) Initial Teacher Training (ITT) provides trainee teachers with the necessary knowledge, concepts and skills to address this need; and whether (b) teachers and teacher-trainers were aware of SMSLI; and, if they were not, was this resulting in an inability to teach what they themselves did not know; or what they might not even be aware that they do not know.

Inspiration from my Professional and Personal History

Reading for a PhD in one's 40s is a different reality from reading for a PhD as a young researcher in one's 20s. I have been working closely with early educators and with students with dyslexia for over 26 years. This has both inspired and guided me for my choice of research topic. My reality of trying to explain my assessment reports and my clients' needs to schools and professionals has led me to the need of a clearer understanding of the training of professionals and their knowledge with regard to early literacy teaching. I wanted to take a step back and understand whether my perceived lived-experience of the situation could be researched in a more detached and objective manner.   My main concern was whether my belief and perceived experiences that SMSLI leads to more effective readers, as concluded by international research findings and through projects carried out in at least five schools in Malta, would gain ground with the local authorities if I were to carry out my research on a national scale.

When I graduated in 1982 I was eager to teach young children. My first teaching post was a Grade 1 class (five-six year olds) in my own home town. Teaching reading to this group of children was for me a matter of trial and error, and meant going back to reading techniques I myself had experienced as a pupil in the same school. At the time it never occurred to me that I could have done something different. I just dived into it and taught English literacy strictly using a sight word approach, and Maltese using a phonics method as I myself had been taught as a child and as I had observed during my ITT. What I did differently was that I concluded that, in the case of reading, 'dragging sounds' together into a word at the first instance was more effective than insisting on syllabising sounds and putting syllables into a word (e.g. pupa; /p/ /u/ - /poo/; /p/ /a/ /pu/; pupa). After a total of two years' teaching, I decided to read a Masters in Learning Disabilities (SpLD) and found a programme that most suited my expectations at Northwestern University in Chicago, Illinois. This was an eye-opener, particularly when exposed to reading theories and reading and spelling techniques. I realized that "I was not aware that I did not know".

This both excited me and left me feeling betrayed about what I had been led to believe during my ITT, namely that I was being fully prepared to teach. By the time I returned to Malta, the ITT course had been developed further and also included early primary years. There had been no such choice when I was having my training. My subjects had been Italian and Physical Education for secondary schools, but I had always been placed in early primary school classes for all my Teaching Practice (TP) sessions. At the time I reflected that the reason for the omission in training was because my specific subjects had been geared for secondary schooling. This was the time when I was having and bringing up my two children and was not working. When I started working/ volunteering in my own children's school in the early 1990s, I realized that, in spite of the newly included early primary schooling focus in ITT, teachers were still unaware of SMSLI. They were still teaching in the way I had taught in the early 1980s - picking up on childhood memories. That was when I decided I wanted to make a change as a board member of this school.

This school started recruiting reading tutors and I perceived one dyslexia tutor as being really gifted, apart from being well-trained in SMSLI. I felt that I

could also trust her with training the schools' early educators, since at the time I myself could not give the necessary time to the school. This led to the start of a programme based on SMSLI. A short study in 2001 indicated that teachers who had been exposed to these techniques felt better prepared for literacy, perceived increasing awareness in children and became "awed" by this new knowledge and by these skills (Falzon & Muscat, 2001). Moreover, as discussed in the literature review, I continued to observe this lacuna in ITT coursework, which included a lot of good exposure to reading theories but very little on SMSLI (University of Malta - UoM, 2010). Furthermore, local literature on the awareness of SMSLI among teachers could not be found, other than the two collaborative studies I had carried out at this school (Falzon & Muscat, 2001; Falzon, Calleja & Muscat, 2011).

Given my work in the area, being the mother of a child with dyslexia and living the experiences of this lack of knowledge for around 20 years, led me to decide what I wanted to focus my PhD studies on. This arises from a dream to reduce the level of illiteracy locally. According to Indexmundi (2010), Malta ranks 92nd in the world. Defining literacy as people aged ten and over who can read and write, Indexmundi notes that according to the 2005 Census 92.8% Maltese - 91.7% males and 93.9% females - are literate, leaving nearly 10% of the population who are illiterate. Furthermore, the just published PISA 2009+ report (Walker, 2011) reveals that 36% of Maltese 15-year olds leave school without baseline functional literacy, when this is 19% in OECD counties.

My ultimate aim is to make recommendations for better practices leading to more positive learning experiences for young children in my role as a lecturer within the Department of Psychology of the Faculty of Education, as an assessor for Specific Learning Difficulties (SpLD), and in a context where research findings evidence that the best way to address early literacy is through SMSLI (e.g. Adams, 1990; Moats, 2009).

My professional experience and literature findings indicate a lack of teacher preparation in this area (e.g. Moats, 1999; 2009). This led me to the main aim of this study. My hope is that this study may contribute to this field of research not only locally but also internationally, given that the literature and

international research findings continuously refer to this lack of SMSLI in ITT and in professional teachers (e.g. Bos et al., 2001). My main aim is to try to persuade local teacher trainers and policy makers to rethink teaching approaches through changing the content of ITT as is noted in the literature; and teachers to feel the need to explore such techniques through Continued Professional Development (CPD). In order to convince people of my concept locally, I want to explore the profile and the details of the Maltese scenario, as compared to published research findings, in order to convince using actual local research findings. In trying to understand the present local situation I would have much better evidence-based information to make recommendations for ITT and CPD. My concern, based on my experience and contact with early educators locally, is that a significant number of Maltese early educators still do not seem to be aware of SMSLI. However, I need evidence-based research to address this perceived concern. I do not know the extent of this lack of awareness and what knowledge base early educators have or lack, particularly with regard to the linguistic element required to address SMSLI.

In this context, my relationship with schools and professionals through university and private practice is both an advantage and a disadvantage. On the one hand, I have the opportunity to know what is happening in schools. My professional status may therefore encourage the relevant authorities to reflect on my recommendations. The fact that we are a small island community makes us know practically everyone else in the field and it is therefore easy for professionals to communicate. On the other hand, personal likes and dislikes, as well as possible dual relationships, may lead to conclusions based on the "who" rather than the "what". Furthermore, my relationship with professionals - both in schools and at university - may make it difficult for me to step back and be totally unbiased, and participants who know me may voice what I want to hear. Such enmeshed relationships and professional roles have made it extremely important for me to continuously reflect on the ethics of this whole research process, always keeping in mind what is most important to me: (a) our future generations' literacy empowerment and (b) the integrity of the whole research process.

I am a practitioner and a teacher who views research as a way to better my practice and my teaching within my ideological context of the best possible quality of life for all. This guides my enthusiasm to go in for research that can be shared with university students, professionals, politicians and relevant stakeholders. Within this context, I would not like this work to become a dusty volume in my and my supervisors' offices or tucked away in university libraries for record keeping. I would like it to be used as a teaching tool and a tool to influence policies and be implemented locally and beyond. As Clough and Nutbrown (2002) note: "Why would you want to carry out a piece of research, if you didn't, in some way, want to persuade somebody of the value of what you are doing" (p.4)?

My motivation is underpinned and guided by a number of values: I value children's quality of life; I value that children who have difficulties in learning need to be treated with dignity and respect; I value the inclusive learning experience of all children; I value that children be treated with equity; I value the importance and impact of literacy in our modern civilization; I value the concept of the Matthew Effect both from Merton's sociological (Rigney, 2010) and Stanovich's educational perspectives (Adams, 1990; Stanovich, 1986, 2000); I value the importance that teachers need to have sophisticated linguistic knowledge and pedagogical skills of language structure in order to teach early literacy effectively and inclusively; I value that teachers need to cherish each and every child; I value honesty and integrity; I value my dream to make a positive contribution to and support my community. These last two values have also led me to always keep in mind McLoad's (2003) cautionary advice that there is a "social responsibility in research that transcends the academic discipline of a profession to which the researcher belongs. The ultimate moral justification for research is that it makes a contribution to the greater public good, by easing suffering or promoting truth" (p.175).

My research process is presented in a series of eight chapters and aims to address the aim and main objective of this study: to understand if early educators perceive themselves prepared to address early literacy, if they are aware of SMSLI and if this perception correlates with their knowledge-base .

This chapter introduced the inspiration and rationale for the research within my theoretical construct that literacy affects success in learning and quality of life. In the next chapter I will briefly present research findings on the effectiveness of SMSLI, and then discuss ITT and SMSLI in the third chapter. The fourth chapter will discuss my methodology, whilst the fifth chapter will present the statistical findings. Chapter six will witness the focus groups' (FG) participants' voices and will lead to the discussion chapter. The final and eighth chapter will conclude the research and make recommendations arising from the findings. Given the complexity and richness of the findings, a number of appendices have been included to allow for ease of reading and at the same time provide the necessary background information and audit trail.

CHAPTER 2

Presenting the 'Missing Link'

Structured Multisensory

Literacy Instruction

[The] world is making progress in literacy, [but] the challenge remains huge. The number of adults who are not literate has fallen from 871 million between 1985-1994 to 774 [underestimated due to lack of data] million between 2000-2006. Between these periods, the global adult literacy rate rose accordingly from 76 per cent to 83.6 per cent, with the largest increase occurring in developing countries - from 68 per cent to 79 per cent. (Richmond et al., 2008; p. 23)

Reading is gleaning meaning from print (Adams, 1990). The focus of the research question neither downplays the importance of constructivist literary opportunities where children are exposed to literature genres, nor proposes that the early literacy experience should only include Structured Multisensory Literacy Instruction (SMSLI). Effective teachers balance explicit skills instruction with motivating and engaging literacy opportunity (e.g. Ehri, 1994; Harrison, 2002; Hoffman & Roller, 2001; Moats, 2009; Slavin, 2010; Wharton-McDonald, Pressley, Rankin & Mistretta, 1997).

This chapter reflects a body of literature that expresses concern that the 'book' experience and the richness literacy brings to learning and to the pupils' environment may be curtailed if the necessary technical skills to breaking the code to alphabetic literacy are not addressed as expediently, effectively and meaningfully as possible (Moats, 2009; Stanovich, 2000). My aim is to address an aspect of early literacy teaching, namely SMSLI, which has still not sufficiently found its way into classrooms and ITT programmes (e.g. Binks, 2008; Moats, 2009) within a context where educators could:

> not possibly be content simply to provide children with technical skills. There is no possibility of fostering disposition toward innovativeness, creativity – that is, of freedom in the domain of representation, of semiosis – in the environment of authoritarian pedagogy. We recognize that children come to school as meaning-makers, and see it as the future of the school to foster enhance and value that disposition (Johnson & Kress, 2003, pp. 13-14).

At this introductory point of the project it is important to place SMSLI in the whole context of the literacy process and theories of reading and reading models and to explain the reason for my focus on this aspect of literacy development. Before presenting the literature review directly pertaining to the research question - teachers' awareness and knowledge of SMSLI, I felt it important to introduce SMSLI from a conceptual, historical, practical and research perspective and to briefly discuss SMSLI principles and evidence-based effectiveness to set the scene.

I will therefore first present a short history of theories of reading development leading to SMSLI, as well as argue why Adam's model of reading

seems to me the most comprehensive and inclusive models of reading, followed by a presentation of SMSLI. The third chapter will then discuss the literature pertaining directly to teachers' knowledge,   teachers' training and teachers' beliefs and attitudes in the area of early literacy. A critique of the Maltese ITT programmes will also be presented as part of the research and literature review process.

The Need for Literacy Success in the New Millennium

Moats (1999) considers teaching reading as "the most fundamental responsibility of schools" (p.3).   Richmond et al. (2008) appreciate that "progress overall is not enough to meet the 2015 Education for All goal of halving illiteracy rates [globally]" (p. 7) and recognize that " effective literacy learning depends in part on the quality of programmes, [where] [R]esearch, sharing good practices and capacity development are key aspects of quality which need greater investment" (p. 7). They cite "reinforcing more effective literacy programme delivery" which must be based on "solid evidence of what works" (p. 52). SMSLI is supported by a large and consistent body of research findings (REA, 1998) that propose solid effective teaching and successful expedient literacy outcomes (Moats, 2009). The theory that binds this study is that what may be missing in early literacy instruction is the inclusion of foundation technical skills for teachers to help children break the code to literacy as early and as efficiently as possible. Specifically, "multisensory" in teaching literacy refers to techniques for beginning or struggling readers involving visual, auditory, tactile, and motor components embedded in a carefully sequenced programme based on the structure of language and linguistic knowledge (Moats & Farrell, 2005).

Whilst it is true that some children will learn how to read in spite of teachers' input, others need a "well-designed instructional approach" - SMSLI - an approach which has "[not yet] made its way into every classroom" (Moats, 1999) and fits the bill for the "solid evidence that works" that Richmond et al. (2008) are requesting. Research findings perceive this pedagogical approach as an inclusive and effective method for successful reading, embracing learning

patterns and profiles of abilities (e.g. Ball & Blachman, 1991; Falzon et al., 2011; Moats & Farrell, 2005; Snow, Griffin & Burns, 2005; Torgeson, 1997).

Theories and Models of Reading

How best to teach reading has been the subject of great debate for most of the post war period (Chall, 1967). Earlier research attempted to establish the nature of effective teaching of literacy by analysing the processes involved in the reading process and then putting forward a model to guide literacy instruction based on the analysis of these processes. Pioneer researchers such as Chall (1967), Flesch (1955), Liberman, Shankweiler, Camp, Blachman, & Werfelman, (1979), Goodman & Goodman (1979) and Goodman (1999) present different models based on the argument that effective teaching of reading produces effective reading behaviour from the learners.

Historically, the problem was that "many researchers and teachers attempt[ed] to create a general understanding of the reading comprehension process by means of some reasonable mental framework" (Grabe & Stoller, 2011, p.24). Grabe and Stoller (2011) distinguish between general (metaphoric) models of reading and specific models of reading. They consider metaphoric models of reading as a good introduction to thinking about reading, "serv[ing] useful purposes, most commonly by providing a metaphorical interpretation of the many processes involved in reading comprehension." (p.25) but not reflective of "recent research advances" (p.25). These general models of reading were historicially the first to appear in the literature (Resnick & Weaver, 1979). On the other hand, specific models of reading are a more recent deelpment, "more specific in nature, trying to account for, and interpret, the results of much research …[and] are grounded in more specific research syntheses" (Grabe & Stoller, 2011, p. 25). To note is that models tend to only account for monolingual literacy learning. Xuereb (2009) notes that "in the absence of a comprehensive theory of second language (L2) reading development, there is a tendency to rely on first language (L1) theoretical frameworks by assuming that L2 reading development comprises similar cognitive processes and that these processes drive the development of L2 reading as well" (p. 330). Geva & Wade-Woolley (1998) on the other hand, note that languages' orthographic,

lexical and morphosyntactic complexity vary, and one cannot assume that component processes carry the same weights across orthographies.

Metaphorical models of reading.
Metaphorical models of reading can in general be grouped in three distinct types of models: Top-Down models; Bottom-Up models and Interactive models (Grabe & Stoller, 2011). The two distinct categories at the opposing end of a continuum are Top-Down and Bottom-Up models. Top Down or Inside-Out approaches promote the notion that reading is a highly complex discrimination process that begins with the brain and ends with selective attention to parts of the printed text. Bottom-Up or Outside-In approaches view reading as a process that begins with the verbal visual print of the page and ends with representations inside the brain (Resnick & Weaver, 1979). Both groups of theories/models acknowledge the importance of top-down and bottom-up approaches to reading, but disagree on the importance given at the level of instruction and reading engagement (Goodman & Smith, 1971, 1987).

Top-Down/Inside out approaches to reading were supported by psycholinguists such as Goodman and Smith (1971) and promote a whole language approach to teaching reading (for example, Language Experience Approach (LEA) (e.g. Brügelmann, 2011: Davidson, 1972; Dorr, 2006); The Big Book Approach (Holdaway, 1979; Strickland & Morrow, 1990; Trachtenburg & Ferruggia, 1989). These approaches view reading as a psycho-linguistic guessing game. The pupils are perceived as learning whole words by merely sampling the text they are interacting with, focusing on the use of higher cognitive skills and on the skills of interpreting informing and cueing. Such an approach is based on the notion that only when one does not make sense of what is being read does one use word and letter analysis. Top-down approaches expect children to learn to read by guessing and modifying print, using their knowledge of the entire world, where children make their own interferences for lower processes. This approach relies heavily on reading comprehension and on the assumption that it is this skill which makes one a good reader. On the other hand, Bottom-Up/Outside- In approaches were generally proposed by pedagogists (e.g. Elkonin 1973) and, as the name of the approach implies, embrace the concepts and principles that students must know

all the letters before they can read, propose a hierarchy of skills starting from individual letters to words to meaning, and emphasize that decoding needs to be automatised such that decoding does not take up all one's energy at the expense of comprehension. These extreme views are now of course obsolete and have been surpassed by interactionist models (Chall, 1967, 1979) and more recently by the Interconnectionist Models of Reading (Adams, 1990; Ehri, 1995) which, in essence, values and embraces the importance of both these approaches.

Current research refutes these two extreme views on reading and this is also observed historically. Historically, in research, the major disagreement centred around where to give the relative importance in teaching reading: on lower level technical skills such as decoding and sight word reading or on higher order skills such as comprehension and engagement with the context. These led to radically different approaches to reading – the famous Language Experience over Phonics debate, with researchers claiming superiority for their recommended programmes, but using different criteria to assess the sources of their programmes and to interactive models starting being developed (e.g. Chall, 1967)

Interactive models are underpinned by the concept that "one can take useful ideas from a bottom-up perspective and combine them with key ideas from a top-down view" (Grabe & Stoller, 2011, p.26). Grabe and Stoller (2011) critique interactive models and describe them as not only too simplistic, but also self- contradictory due to "conflicting processes" of comprehension and access to print. However, can one not interpret such models as complimentary rather than conflicting? Whilst it is true that as, Grabe and Stoller (2011) argue, (a) the "automatic processing aspects of comphrenesion, by definition, need to be able to operate without a lot of interference from the moment-to-moment informaton gained from background knowledge or massive amounts of inferenceing" (p.26); and (b) "the key processing aspect of bottom-up approachs… are incompatible with strong top-down controls on reading comprehension." , Grabe and Stoller (2011) seem to fail to appreciate models that appreciate the importance of these two aspects which lead to successful gleaning meaning from print - automated access to read and comprehension of language and background, and the

importance that needs to be give to both aspects, particularly in the early stages of learning, and to take into account that, whilst this incompatibility may true for the accomplished readers, models of reading need to appreciate and account for an awarenesss of these two processes and how these should then be translated in the learning process. This is also observed in the literature (e.g. Vail, 1991). Grabe and Stoller (2011) seem to focus on reading comprehension without giving due importance to the medium leading to reading comprehension.

If we take reading to mean 'gleaning for meaning' then the comprehension aspect needs to be given a lot of importance; indeed, ultimately reading is gleaning for meaning from the printed text, but how to arrive at this stage is also important (e.g. Aaron, et al., 2008). The famous 'first-grade studies' carried out in the USA in the 1960s (Bond & Dykstra, 1967) wanted to assess the effectiveness of different reading strategies and approaches in the teaching of early literacy. Although Barr (1984) notes that the result of this study yielded no 'overall winners' with regard to a specific approach, it was clear that children's decoding and fluency of reading was improved by programmes that specifically targeted decoding skills and knowledge of letter-sound consistencies in words, and comprehension and vocabulary building did not improve so much with this approach. Alternatively, the use of reading programmes focusing on meaning resulted in children becoming better at comprehension, but decoding and phonic knowledge was not improved. The inference from such research studies is that it is important that a fine balance is created, such that students are exposed both to strategies to decode and to whole language experiences, in a way that they are both stimulated to engage in a range of activities involving literacy and also developing positive skills towards literacy in order to be equipped with the correct skills to address reading techniques (Adams 1990; Graham & Harris 1994). Vail (1991) notes that educational "pressures" of the time:

> have forced many administrators and teachers to choose whole language or phonics. This deprived students of the full range of experiences they need and deserve. When adults go to extremes, kids pay the price. One-sided teaching makes a lop-sided offering. In language, structure and texture create and operate within a symbiosis interdependent, each nurtures the other, each needs the other for strength, and each compliments the other. Operating together, they form a handclasp of

common purpose, an alliance for literacy, a friendship for children (p. 3-4).

This construct is reflected in numerous studies which indicate that teachers should opt for an integrative approach to yield better readers. To mention one study as an example: Xue and Meisels (2004) carried out a longitudinal study of 13,609 beginning readers across 788 American schools. They record superior reading results in classes where language (LEA - a Top down approach) and phonics (a Bottom-up Approach) were integrated. Furthermore, children experiencing difficulties benefited more from a structured approach as opposed to a LEA. They conclude:

> Our findings suggest that, between the bottom-up (Phonics) and top down (whole language) models of reading, there is an intermediate position that incorporates both bottom-up and top down processes in constructing meaning from text. In contrast to the extreme language and phonics positions, the current study proposes that the more sensible beginning reading instruction should reflect a balance of skills development and authentic reading and writing. Our investigation provides empirical evidence that instruction incorporating both integrated language arts and phonics is more effective than either one taught alone. In order to learn to read effectively, children need a balanced instructional approach that includes learning to read the code and engaging in meaningful reading and writing activities. (p. 222).

Flower (1994) emphasizes the importance of seeking to integrate the social with the cognitive research perspective with regard to reading, and argues that a theories and models of reading which integrate both perspectives are needed. She notes that in order to address and appreciate such theories one needs to look at expert writers as opposed to novice writers. She finds that "expert" writers - referring to accomplished and competent writers - behave differently from novice writers. Whilst expert writers attempt to interpret and understand a written text into a meaningful and integrated social transaction between the writer and the reader, novice writers tend to focus on surface content and formal text structures and features. As she puts it:

> A literate act… is an attempt to create meaning and, in doing so, it reflects – is itself shaped by – literate, social and cultural practices… at the same time, literacy is also a personal intentional action, an attempt to understand, express, explore communicate, or influence (p. 9).

Specific models of reading.

Specific models of reading are a later development in the literature and such models usually provide "good explanations for what we know about reading from research" (Grabe & Stoller, 2011, p. 27). Such models started appearing around 25 years ago. For example, Stanovich's Interactive Compensatory Model of reading (2000) stresses that the more automated the access to print the more the readers comprehend; and the more difficulties there are to access to print, the more one creates compensatory strategies such as slowing down and using context, with as many resources as possible, to access meaning from print. As their name itself implies, Word Recognition Specific Models (e,g, Seidenberg & McClelland, 1989; Ehri, 1994, 2002) are then not so comprehensive and do not include comprehension although in the explanation of the model they refer that such skills are necessary for and lead to reading comprehension (e.g. Ehri, 2003).

If we continue to take a historical timeline, models then moved from interactive to specific and connectionist/interconnectionist. Such models focus on how we organise information that is accessible to us from the environment (e.g. Adams, 1990; Grabe & Stoller, 2011). These include models such as the Hoover and Gough's 1990 Simple View Reading Model, Sadoki's Dual-Coding Model (Grabe & Stoller, 2011) and Adam's Model of reading (1990). These models "draw[s] on several key concept from other reading models" (Grabe & Stoller, 2011 p.29) and present "separable but supportive sub-systems of cognition to support comprehension [of the printed text]" (Grabe & Stoller, 2011, p.30) . Of course such models are based on and have the privilege of the awareness of accumulated research on models of literacy. Ultimately, in any model of reading many factors must be taken into account particulary with reference to teaching and learning.

Why Adam's model of reading.

In this section I will argue why I opted to refer to Adam's Connectionist Model of reading. Adams's Model (1990) reflects the framework for reading with meaning as its major goal is reading for meaning. It echoes Flower's (1994) position for a need to integrate social with cognitive perspectives, given the equal importance it gives to the context and the techniques of reading. Adams

(1990) argues that there is no need for a division between teaching approaches - whole language (Top-Down) or direct teaching (Bottom-Up). Research findings in these later years have come to a conclusion that explicit teaching of lower level skills, coupled with comprehension - upper level skills - instructions, are the most effective, particularly if carried out in the context of other components of reading activities (Moats, 2009). This forms the basis of the SMSLI movement (Fletcher & Francis, 2004). In other words, effective teaching should be multifaceted, rather than based on the choice of one approach (e.g. Adams, 1990; Stahl, McKenna & Pagnucco, 1994; Moats, 2009), and educators should make use of these approaches for the benefit of their pupils. The importance of the language approach in teaching reading, and the use of a holistic, eclectic approach to early reading, should always be supported and promoted (e.g. Cazden 1992; Duffy 1991; Lonberger, 2000; Moats, 1999). SMSLI professionals and researchers, however, note that the lacuna is in how teachers approach and address the lower level aspect of reading to early readers, and a lack of knowledge teachers have with respect to the structure of the language (e.g. Moats, 1999, 2000, 2009; Moats & Farrell, 2005), as discussed in Chapter 3.This is the main reason why Adam's model is herein perceived as the better model to nest SMSLI.

Adam's (1990) model explains that in reading, the beginning and accomplished readers use a number of processors. The first is the orthographic processor since reading involves the use of sight. In any alphabetic written language, the phonological processor (second processor) is the link between print and speech and this link allows for more access to print as the link becomes stronger and more automatic. Adam considers the context as the third processor: the environment that the print is nested in. During the early phases of reading this context (pctures, other words) is sometimes overrelied upon (guesswork). Then, as the reader become more skilled, the context is used to interpret the text, deepen and support comprehension. These three processors work together to help lead to the fourth processor and the aim of reading: the semantic processors which consideres all possible meanings and then selects the correct one. The connection of the alphabet (Orthographic information – or tactile in the case of Baille -) with the sounds (phonological information) to form the words respects the importance that needs to be given to access print which

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allows the reading to, together with the context processor, achieve semantic processing such that the readers can work with and understand the messages the printed text (Adams, 1990, Moats, 1994). For effective reading to occur, all four processors must work together. This connectionist model helps explain the complex reading processing both with regard to learning and behaviour. Furthermore, it respects and embraces other models and approaches to reading and is also inclusive.

Introducing Structured Multisensory Literacy Instruction (SMSLI)

In this section I intend to present and explain SMSLI as a method of teaching literacy which nests well within Adam's model of reading. I will define SMSLI, give its historical context, and discuss its five basic principles in order to present an argument for its effectiveness.

SMSLI uses teaching strategies which seek to actively stimulate all available senses simultaneously; address the structure of language and present linguistic knowledge, including a meta-cognitive approach, in order to help break the code to literacy. This implies having and using linguistic knowledge to effectively teach children to break the code to literacy. This content knowledge includes linguistic knowledge of phonemes, graphemes, syllables, morphemes, sentence structures, parts of speech and orthography rules. From a theoretical framework perspective, SMSLI embraces the social model of disability approach as developed by Oliver (1992, 1996, 2004), Universal Design Learning (UDL) (Turnbull, Wehmeyer & Turnbull, 2010), the Vygotskian concept of scaffolding in learning (Vygotsky, 1978), and the Piagetian psychological stages of child development (Evans, 1973).

Defining SMSLI.

Moats' and Farrell's (2005) definition of SMSLI: "Techniques for novice or poor readers that involve visual, auditory, tactile-kinaesthetic, and/or articulatory-motor components in the carefully sequenced teaching of language structure" (p. 24) very effectively and concisely embraces the five basic principles underpin SMSLI: (a) the use of as many senses as possible – Adam's

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orthographic and phonological processors; (b) the element of structure and sequence - Adam's link between processors in the learning processors ; (c) linguistic knowledge of the structure of the language - Adam's orthographic and phonological proessors lnked with the context – the linguistics environment; (d) evidence-based practices - Adam's model is a specific model based on research findings (Adams, 1990; Grabe & Stoller, 2011; Moats, 1994,1999) and (e) effective reading for all - Adam's model is appreciative of all populations and all learning styles (Ehri, 2003; Moats, 1999). Each principle will be individually discussed in detail below. These five principles not only nest themselves well within Adam's model (1990), but also emabrace the final objective of the model – effective and expedient access to print.

SMSLI - A Brief History.

The use of Structured Multisensory Literacy Instruction (SMSLI) to address literacy dates back to the late 1930s. Orton's neurological research (Orton, 1925, 1928) on children who were struggling to learn how to read led him to identify the condition *strephosymbolia*; to appreciate the work of Helen Keller and Grace Fernald who were using kinaesthetic methods and modalities to reinforce visual and auditory associations; and to build on this concept. Orton proposed the use of all sensory methods and modalities to improve 'weak memory patterns' in teaching reading (Birsh, 2005; Moats, 2005; Shaywitz, 2003).

Orton's pioneering concept led to the Orton-Gillingham programme (Gillingham & Stillman, 1960, 1997). This multisensory reading programme was put together by Anne Gillingham after being requested by Orton to do so. The task Orton presented to Gillingham was to come up with a suitable method based on phonemic structures to teach printed language to children who were having difficulties learning how to read. The target was to make students understand the connection between sounds and letters, and the role each play in words. At this early stage of the development of SMSLI, Orton was already aware of the importance of multisensory techniques (MST), the concept of meta-cognitive skills in learning, and their use when other processes are challenging to the reading situation. The Orton-Gillingham multisensory method was, and

still is, innovative because of the teaching techniques, the structure and the sequence of skills presented for teaching and learning, and is the pioneer of present SMSLI. The effectiveness of such techniques has been researched and promoted by several educators such as Fernald (1943), Gillingham & Stillman (1960, 1997), Strauss & Lehtinen (1947) and more recently by researchers and practitioners such as Hornsby (1995). Hornsby et al. (1999) and Moats and Farrell (2005).

Programmes following the principles of the Fernald and the DOrton-Gillingham method then started to be developed, particularly across the United States and in the United Kingdom. In the 1930s, Kathleen Hickey actually travelled to the United States to observe the Orton-Gillingham method, started using these techniques herself, and during the early 1970s developed and published the Hickey Multisensory Language Course which was aimed at enhancing reading, writing and spelling skills. Hickey (1977) notes the importance of phonemic awareness and grapheme-phoneme correspondence and notes that alphabet in education is the basis of the language using an alphabetic code to literacy. The Orton-Gillingham and the Hickey Programme are considered to be the first programmes in the history of SMSLI (Hornsby, 1995). Along the years, other multisensory programmes were developed. One has to note that all multisensory programmes are based on the original concept of the Orton-Gillingham programme. Examples of these programmers are the Units of Sound programme (Bramley 1972), Alpha to Omega (Hornsby et al., 1999), Barton Reading and Spelling System (Barton, 1999), Bangor Dyslexia System (Miles 1997), Recipe for Reading (Traub & Bloom, 2000), Wilson Reading System (Wilson, 1996), Programme Beat Dyslexia (Franks, Nicholson & Stone, 1997), and M-POW'R programme (Muscat - in use locally and still unpublished).

All these programmes have the concepts and principles of SMSLI as a common element, but then vary on minor aspects such as how and when to introduce letter names and letter sounds. These structured multisensory programmes can be modified according to the specific needs of children and can generally be used by all children, irrespective of general ability and learning style, as will be discussed below. Each of these programmes offer varied tasks

and therefore give professionals infinite opportunities and resources to suit learning preferences, strengths, weaknesses and speed of learning. The key to their success is their multisensory techniques and their highly structured format, as evidenced by several research findings (e.g. Adams, 1990; Adams & Bruck, 1995; Moats & Farrell, 2005; Miles & Miles, 1983). To note is that all the programmes listed above, except for the Muscat programme, were planned for individual or small group teaching as they were meant to be intervention programmes for students with a profile of dyslexia. However, the resources in all the programmes, particularly the programmes published from 1970 onwards, are so varied that they can easily be adapted for inclusive classrooms teaching.

SMSLI Principle 1: The use of as many senses as possible.
Multisensory learning represents the environment that surrounds learners. Humans learn best if all the senses are used, and this also helps ingrain memory (Cohen, 2001). Research clearly indicates that, for all learning, multisensory techniques (MST) teaching involving some or all of the senses should be used all the time in the inclusive classroom as this is beneficial to all children and particularly important for students with learning challenges and with students dyslexia with regard to literacy (Turnbull et al., 2010). It is further assumed that in such classrooms the population has mixed ability and teachers should use strategies to include all children such as UDL planning and implementation (Pugach, 1995; Rose & Meyer, 2002; Turnbull et al., 2010). This is important if students are to have easy access to the curriculum and to literacy.

Tod (1999) refers to the Seven-M principles of teaching strategies: Multisensory, Meaningfulness, Memory, Metacognition, Manageability, Motivation and Mastery in order to ensure learning for all. These are embedded in SMSLI and underpin UDL and the social model of disability. Tod refers to the provision of at least one mode (Modality) of learning with which the learners feel comfortable and the compensation of a modality through the use of other channels. For example, if learners have a difficulty dealing with information presented throughout the auditory channel, this could be compensated for through the use of the visual channel (compensatory channel). Moreover, there needs to be not only consideration for learners as individuals but also a holistic

appreciation of learners' individual learning patterns (Johnston, 2009; Johnston & Dainton, 1996; Reid, 1998; Tod, 1999).

Tod's Manageability and Memory principles are also addressed in SMSLI. Children with learning difficulties need more time to learn (Ormrod 2011). For example, whereas, on average, children need to see a flashcard about 12 times to remember written words, children with difficulties need at least 40 times (Ehri, 1995; Felton, 1993; Felton & Pepper, 1995; Meyer & Felton, 1999). Considerable reinforcement and repetition are necessary due to short- and long-term memory challenges. Memory strategies need to go beyond rote learning as noted above and explained below. Since SMSLI was initially designed for children with dyslexia (Orton, 1925, 1928), auditory sequential short-term memory challenges had to be taken into consideration and such challenges necessitated the use of strategies beyond simple rote learning. Repetition and over-learning using a multisensory mode were considered effective strategies: oral (say), visual (see), auditory (hear), kinaesthetic (feel). In other words, the use of auditory, visual, kinaesthetic and cognitive mnemonics is very important in the teaching of reading and spelling - e.g.: (a) B*EAU*TIFUL – (*E*lephants *A*re *U*gly); (b) 'ight' I might fight the bright light and then have a slight fright during the flight; (c) rule Learning -.1-1-1 rule; 'i' before 'e' rule; soft and hard /c/ and /g/ sounds) (e.g. Barton 1999; Hickey (1977/2001); Miles 1997; Traub & Bloom, 2000; Wilson, 1996).

The use of as many senses as possible, or multisensory learning, is an instructional approach that combines auditory, visual, and kinaesthetic elements into learning a task (Aaron et. al., 2008; Mercer & Pullen, 2006). We naturally use our eyes, ears and touch to receive information from our environment. We use this information that we get through our senses to remember, to understand, to form new ideas, to solve problems and to construct meaning (Cohen, 2001). A multisensory reading method uses multimodality teaching and learning processes where as many modalities as possible are used to help children learn how to access the printed text. Such teaching is based on the premise that "some students learn best when content is presented in several modalities" (Mercer & Pullen, 2005, p.419). The importance of knowing which learning style students utilize is crucial to successful learning. King (1996) reports that visual

learners make up approximately 60% of the population, auditory learning 30% and tactile/kinaesthetic learning 10%. King (1996) notes that not everyone learns in the same mode or manner and most people use visual, auditory, and kinaesthetic/tactile learning styles. Learners use all these learning styles, but one style is often used more predominantly than the others. Furthermore, 90% of the population utilizes a combination of visual and auditory methods as learning styles. Whilst many teachers present material in their classrooms most often in a visual or auditory manner, it is also important to include the tactile/kinaesthetic, particularly in inclusive classrooms (Centre for Applied Special Technology - CAST, 2011), as this also help memory and retention (Cohen, 2001).

In learning, and particularly in literacy teaching, the use of all senses is referred to as VAKT (Visual-Auditory-Kinaesthetic-Tactile) and includes tracing, listening, writing and seeing (Fernald, 1943). For example, learners hear the words/sounds as they are pronounced, see the word/letter/s symbols, and are also be given the opportunity to increase tactile and kinaesthetic stimulation through the use of tactile resources such as sandpaper letters, plastic or wooden letters, finger painting, sand trays and raised or sunken letters. Grace Fernald developed the first VAKT programme -The Fernald Method - (Cotterrell, 1973; Fernald 1943,1988). Her kinaesthetic literacy method prompted struggling students to trace words. Years of such teaching experiences and research culminated in her 1943 classic work, *Remedial Techniques in Basic School Subjects*. Her influence has lasted and even Howard Gardner includes her concept of kinaesthetic learning as one of his multiple intelligences   (Gardner, 2011). VAKT anchors modern instruction in the areas of special education, specialised reading instruction, inclusive teaching techniques and SMSLI (e.g. Moats, 2009). Anna Gillingham developed her reading instruction method - The Gillingham Method (Gillingham & Stilman, 1970, 1997) within this VAKT Framework, but whereas Fernald stressed on whole word learning, Gillingham stressed on sound blending , in line with research findings that were evolving at the time (Aaron et al., 2008; Mercer & Pullen, 2005).

SMSLI Principle 2: The element of structure and sequence.

SMSLI programmes are sequential and cumulative as it is necessary for children with difficulties to master sub-skills before moving to more advanced material and pace suffieicnt importance and attention on phonological and phonemic awareness. Any SMSLI programme is usually highly structured, linear, enables learners to complete and master a particular skill before advancing to a subsequent skill, and skills are taught together and purposefully with the practice of reading/spelling as the focus (e.g. Hornsby, Shear & Pool, 1999; Wilson, 1996). SMSLI programmes are usually phonetically based and involve phonological training, linking phonemic awareness with the verbal visual input, supported by linguistic knowledge and rule learning, providing structure as well as more meaning and effectiveness.

Multisensory literacy instruction requires the organization of material in the logical order of the language (Moats 1994). The sequence must begin with the easiest and most basic elements and progress sequentially and methodically to more difficult material. Each step must also be based on material already learned and concepts taught must be systematically reviewed to strengthen memory (Moats, 1999). As such, trained instructors must teach in a logical and cumulative order and must utilize both synthetic and analytical literacy instruction. In other words, present the parts of the language and teach how the parts work together to form a whole and vice versa (Aaron et.al., 2008). Given that such techniques were originally developed to support children with literacy difficulties, programmes using this process of learning are always structured and sequential and ensure that elements of reading are explicitly addressed. The next section not only explains this explicit knowledge required but also refers to the sequence and structures of how, in the learning situation, such knowledge needs to be presented.

SMSLI Principle 3: Linguistic knowledge.

In SMSLI, explicit linguistic knowledge of basic basic language constructs is intrinsic to the learning process and taught in a direct systematic manner. Such knowledge includes phonological and phonemic awareness, sound-symbol association, , the alphabetic principle, phonics, syllable knowledge and use, and morphology. (e.g. Moats, 1994; NICHD, 2000). This is necessary for

developing accurate, automatic word recognition needed to glean meaning from printed texts through fluent effortless reading. SMSLI is based on direct instruction where the inferential learning of any concept cannot be taken for granted. Moats (2007) reports that poor readers often "know simple letter-sound corrrspondence, but do not know how to divide a multi-syllabled word into its essential sounds. To do this, students must recognize base words and endings, roots and affixes, compounds and contractions". (p.15), in other words have a linguistic knowledge base.

Phonological and Phonemic Awareness.

Phonological awareness is the understanding of the internal linguistic structure of words. It includes the ability to understand that language is made up of words, words of syllables (phonological awareness); and syllables of phonemes (phonemic awareness). When addressing phonology, learners are taught sounds and how these work within their environment (speech words in words). In SMSLI programmes, this would involve addressing the skills of identifying and manipulating compound words (bedroom - bed room), identifying and separating syllables in words (ta-ble; car-pet) recognizing and generating rhyming words (hut, cut,) and differentiating phonemes (mat - /m/ /a/ /t/). Learning progresses from phonological awareness to eventually presenting and guiding towards phonemes - the smallest unit of sound in a given language that can be recognized as being distinct from other sounds in the language. (Moats, 2007).

Phonemic awareness, which falls under the umbrella of phonological awareness, is an important and fundamental aspect of phonological awareness and involves the ability to segment words into their component sounds. This then forms the basis on which the ability to decode words is based such that this skill, when mastered, is then paired up with the "eventual association of the written letters of the alphabet with their sounds" (Aaron et al., p. 303). Beginning and struggling readers may need auditory-verbal instruction, perhaps with the supprot of non-verbal input (Pictures) to help memory, and without the use of letters, if they have difficulty distinguishing between sounds or recognizing and producing sounds from words (Moats 1994, 2007, 2009).

Sound-symbol association.

Sound-symbol association is the knowledge of the various sounds of the language (phonemes) and their correspondence to the letters and combinations of letters (grahemes) which represent these phonemes. This involves the ability to *verbal-visually* perceive perceptual difference automatically and quickly (Aaron et al. 2008). *Verbal Visual Discrimination* is important because the readers need to distinguish very similar line drawing such as 't','h','k', ' ph', and 'm', 'n', 'u', 'pl' when reading. Such discrimination is important to arrive at the appropriate lexical meaning.   Discrimination of similar looking letters is the basic elements of the written language, and perception of form needs to be exact for successful reading. Furthermore this then has to be automatically linked to the sound of each grapheme.

Sound-symbol association must be taught (and mastered) in two directions: visual to auditory (reading - recalling a phoneme from a given verbal visual symbol) and auditory to visual (writing - recalling and producing graphemes from a given sound). Furthermore, students must master the blending of sounds and letters into words as well as the segmenting of whole words into the individual sounds. These skills need to me mastered automatically with the ability to process them simultaneously. If students, as is often recommended in synthetic phonics (e.g. Lloyd, 1998), are taught to say the single sounds of a word seen as visual print and then blend the sounds together into a work, one would not be able to ascertain whether students would be decoding - recognizing the letters and blending the sounds at the same time - or whether studends are recognizing individual letters and them through memory blending the sounds voiced together into a word. Similarly, if students are taught to recognize a word and then asked to recite the sounds of each grapheme, again one cannot be assured of appropriate decoding. In other words, decoding requires the fusion of these two skills - blending the words together with translating visual symbols into sounds (e.g. Moats, 1999; Hornsby, 1995; Wilson, 1996).).

Phonics.

Moats (1007) emphasises that it is extremely important for professionals to clearly understand that phonemic processing is not the same as phonics. She notes that "confusion between them is pervasive" (Moats, 2007, p. 14) in programmes meant tor teaching beginning readers, that "phonics is more than most people (including many phonics advocates) realize, more than simple connections between letters and sonds" (p.15). She cautions that professionals should be wary of programmes which end phonics instruction before longer more complex words are tackled and explains that phonics must include linguistic word analysis. Whilst phonemic and phonological awareness, as explained above, focus on the features of speech sounds and spoken words (without the use of printed letters or words) and in the learning process must precede "tying those sounds to letters, as phonics does" (Moats, 2007,p.15), phonics is the ability to use phonemic awareness as you are working with the printed text. In order to recognize printed words, learners need to not only learn the connections between phonemes and graphemes but also understand the spelling patterns for syllables in order to cope with longer more complex words

Phonics, syllable knowledge and use.

A syllable is a unit of oral or written language which includes one vowel sound (Aaron et al., 2008). In a context where any syllable in both the English and Maltese language includes only one vowel sound, linguistic knowledge on syllabes is essential in SMSLI (Moats, 2009). SMSLI syllable instruction is taught in a structured and sequential manner and in Engish, specifically addresses the teaching of the six basic types of syllables (Table 1), where syllable division rules should be taught in relation to the word structure (Moats & Tolman, 2009;). The rationale behind this aspect of SMSLI is that without a strategy for chunking longer words into manageable parts, beginning and/or struggling literacy learners may look at a longer word and simply resort to guessing, or ignoring. Knowledge of syllable-spelling helps readers know not only whether a vowel in a word is short (eg. Cab - closed syllable) or long (e.g. cable – open syllable), but the familiarity with the six syllable patterns helps students read longer words more accurately, more easily and more fluently, as well as have more skills to solve spelling problems.

Table 1. Six Syllable Types (Moats, & Tolman, 2009; - Table 5.1. Summary of Six Types of Syllables in English Orthography, ttp://www.readingrockets.org/article/28653/)

Syllable Type	Examples	Definition
Closed	<u>dap</u>-ple <u>hos</u>-tel <u>bev</u>-er-age	A syllable with a short vowel, spelled with a single vowel letter ending in one or more consonants.
Vowel-Consonant-e (VCe)	com-<u>pete</u> des-<u>pite</u>	A syllable with a long vowel, spelled with one vowel + one consonant + silent e.
Open	<u>pro</u>-gram <u>ta</u>-ble	A syllable that ends with a long vowel sound, spelled with a single vowel letter.
Vowel Team (including diphthongs)	<u>aw</u>-ful <u>train</u>-er con-<u>geal</u> <u>spoil</u>-age	Syllables with long or short vowel spellings that use two to four letters to spell the vowel. Diphthongs ou/ow and oi/oy are included in this category.
Vowel-r (r-controlled)	in-<u>jur</u>-i-ous con-<u>sort</u> char-<u>ter</u>	A syllable with er, ir, or, ar, or ur. Vowel pronunciation often changes before /r/.
Consonant-le (C-le)	drib-<u>ble</u> bea-<u>gle</u> lit-<u>tle</u>	An unaccented final syllable that contains a consonant before /l/, followed by a silent e.
Leftovers: Odd and Schwa syllables	dam-<u>age</u> act-<u>ive</u> na-<u>tion</u>	Usually final, unaccented syllables with odd spellings.

The six syllable type in the English Language are presented in a relatively sequential order of difficulty include. Furthermore, closed, open, vowel team, vowel-r, and VCe syllables can be either simple or complex syllables. Whilst simple syllables have no consonant clusters, (e.g. late; back; sick; bee; side), a complex syllable is any syllable containing a *consonant cluster* (i.e., a sequence of two or three consonant phonemes) spelled with a *consonant blend* before and/or after the vowel (e.g. Crate; Stick; Shrink; free; blind) (Moats, & Tolman, 2009).

Morphology.
A morpheme is the smallest unit of meaning in a word and morphology studies word structures and how words are formed from morphemes and how morphemes are combined from words. . Morphemes may be as short as one letter (e.g. the plural 's') or a combination of letters that contain meaning (e.g. suffixes -ful, -ly, -ness,-tion; prefixes mis-, un-, dis-). These units of meaning could be base words, roots and affixes - prefixes and suffixes. Morphemes are usually classified into free and bound morphemes. Free morphemes occur as

separate words (e.g. cat; you) and bound morphemes cannot stand alone as words (e.g. '-s', 'un-'). (Aaron et al., 2008; Azzopardi, 2007; Cassar 2002). .

Students who understand words at the morphemic level are better able to get the meaning of words and better prepared to deal with reading and writing, as the literacy content increases in quantity and quality. Effective readers use morphological knowledge to recognize complex words. Learning morphemes helps students be better equipped to address unfamiliar words and morphologically complex words. Students with morphological knowledge are better able to separate out the morphemes into meaningful units for use in decoding, comprehending as well as in spelling tasks. This is again taught within a structured and sequential programme (Moats, 2007).

SMSLI and Maltese.

At this point, it is appropriate to offer an introductiont to the Maltese language, in order to present the argument that (a) SMSLI can be used for Maltese literacy and other alphabetic languages, in spite of differences in the writing system of languages; and (b) SMSLI should be used for Maltese and English in the Maltese educational system as skills can be transferred across languages (Moats, 2007; Xuereb, 2009).

Maltese is a unique language. It evolved under Arab rule from AD 870 to AD 1090 and is the only Semitic language officially written in the Latin alphabet (Camilleri, 1996). Over the centuries, Maltese has undergone significant linguistic change and has embraced vocabulary reflecting various countries that once occupied the islands and contact with speakers of Sicilian, Italian and English (Cremona, 1990; Mifsud, 1992). English was introduced to the island in the 19th century. Following their concern over French occupation (1798-1800), the Maltese asked for help from the British and this resulted in British colonial powers (1800–1964) and the introduction of English to the island (Abela, 1997).

The following information will help inform the reader about Maltese alphabet in the context early literacy development and SMSLI (Azzopardi 2007; Moats, 2009; Xuereb, 2009).

The Maltese alphabet.

The written Maltese alphabet is composed of 30 Roman letters, with one letter consisting of two alphabet consonant letters /għ/ and a long vowel written with two alphabet vowels /ie/ (pronounced as the vowel digraph /ee/ as in feet).   The letter [y] is not part of the Maltese alphabet and the alphabet includes five unique letters:

(a) Ċ   pronounced /ch/ as in <u>ch</u>air;

(b) Ġ   pronounced /j/ as in <u>j</u>ump (as opposed to G pronounced /g/ as in goat).

(c) GĦ unsounded aspirated glottis placed before, after or between vowels.

(d) Ħ   pronounced with a guttural [h] sound as /gh/ in lau<u>gh</u>.

(e) Ż   pronounced /z/ as in <u>z</u>ebra.

All other letters are pronounced the same way as in English except for:

(a) Z   pronounced [ts] as in pi<u>zz</u>a.

(b) J   pronounced as [y] as in <u>y</u>acht.

(c) X   pronounced as [sh] as in <u>sh</u>ip.

The letters 'h' (e.g. hemm – pronounced 'emm' and meaning there) and 'għ' (e.g. għar pronounced 'are' and meaning cave) are silent except at the end of words when they are aspirated like the /gh/ in laugh.

The Maltese alphabet has six vowels: /a/ (pronounced /u/); /e/; /i/; /ie/ (pronounced as /ee/); /o/; and /u / (pronounced /oo/). Five vowels can be long or short, but /ie/ can only be a long vowel, and the vowels 'i' and 'u' become diphthongs after /għ/. For example, the vowel sound in *Għid* (Easter) is pronounced as in the vowels sounds in h<u>eight</u> or <u>eight</u>; the /għu/ vowel sound in Tistgħu (you can) is pronounced as as the /o/ sounds in 'c<u>o</u>de' or in 'h<u>ow</u>'. Awareness of syllable patterns is also important in the Maltese language as, as in English, it affects the long and short vowel sounds (Azzopardi, 2007). As such, although Maltese may be a more transparent language then English, it is less transparent than languages like Italian and is not a totally transparent langague like Finnish (Chan, 2002) and, given its structure and rules, linguistic knowledge is still a valuable tool for literacy learning (e.g. Muscat, unpublished).

Bi-lingualism and literacy in Malta.

More than 90% of Maltese citizens have Maltese as their L1, whilst the rest are either totally English speaking or bi-Lingual (Borg, Mifsud & Schiriha, 1996) with Maltese and English used interchangeably by parents and children at home, at times not respecting language registering.

Malta is one of seven European countries with more than one official language (http://www.eucountrylist.com/). Article 5 (1) (2) of the Constitution of Malta *(*1964, last update 2007) states that wheras the Maltese language is the national language of Malta and must be the language used in the courts, Maltese and English "shall be the official languages of Matla and the administration may for all official purposes use any of such languages (Article 5(2) p.7), where every law should be written in both langauges (Article 74). This is then reflected in the educational system. Education in Malta is provided in the two languages. All schools are obliged to teach Maltese and English in order to obtain a licence to operate. However no official language education policy exists to date. State schools usually introduce literacy in Maltese (Kindergarten) and then move to English (January of Year 1) whilst Church and independent school start with English literacy.

Xuereb (2009) reports that "research on the relationship between bilingualism and dyslexia does not yet provide conclusive evidence on the nature of the interaction of these two learning conditions. However there are studies that show that when difficulties arise in the development of literacy skills, these are most apparent in the more difficult [less transparent] orthography (p.329). In the local context, this would mean that generally more difficulties would arise with English literacy due to both the profiles of the two written language and language fluency where English is an L2. English is considered an opaque language, given the characteristics of its written systems, when compared to more transparent languages such as Finnish, Spanish, Italian and Maltese. In spite of these difference in the written system, studies such as those of Bajo, Burton, Burton & Canas (1994) amd Sebastian-Galles (1991), as well as the present study, argue for the need of two pathways to breaking the code - decoding and whole word – particularly if adopting Adams' model of reading

(1990) and if reflecting of Ehri's (2002) stages of sight word development and if embracing current reesrach findings (Moats, 2009).

Xuereb (2009) reports that "considerable research has shown that phonological awareness contributes to learning to read not only in English but also in Chinese, Swedish, Danish, Spanish, Italian, Dutch, Turkish and Serb-Croatian" (p.331). Studies comparing L1 and L2 decoding skills in readers of different orthographies suggest that these skills are positively correlated and that individual differences in the development of these skills can be predicted on the basis of underlying cognitive and linguistic abilities such as phonological skills, memory, orthographic knowledge and speed of processing (Geva & Wade-Woolley, 1998). Likewise, in a study on Maltese seven year olds, Xuereb (2009) concludes that "all children performed better on nonword reading, spelling and rapid naming tests in English and better on word reading, segmenting and nonword repetition in Maltese..Correlation analyses highlighted significant correlations between the following parallel English and Maltese measures: (1) word reading, (2) nonword reading, (3) spelling, (4) nonword repetition, (5) elision, (6) segmenting words, (7) segmenting nonwords and (8) all rapid naming tasks. Such results emphasise the concept that SMSLI can be used for both languages in the Maltese context" (p. 339).

SMSLI Principle 4: Effective reading for all.
The two operative words in this principle are 'effective' and 'all'. Is SMSLI more effective and more inclusive than other literacy instruction?

Effective?
As already discussed previsouly, SMSLI does not belittle the importance of language, vocabulary, reading comprehension, it simply states that access the the code needs to be done as efficiently and as effectively as possible (Stanovich, 2000), in order to glean meaning from print. Effective reading involves the ability to read texts accurately, automatically, and smoothly with little conscious attention to the mechanics of accessing the printed text – reading fluency. Fluent readers read texts with appropriate ease, speed, accuracy, proper intonation, and proper expression. Researchers have found a relationship between fluency and text comprehension, which indicates the importance of fluency. Readers must decode and comprehend to gather

information from text. If the speed and accuracy of decoding words are hindered, comprehension of the words is compromised as well. Fluent reading allows for deeper knowledge of the printed text by making connections among the ideas presented without attention being taken away for accessing print. Furthermore fluent readers tend to be more confident about the content and meaning of what they have read, tend to complete their work faster and with higher quality than less fluent readers (e.g. Archer, Gleason & Vachon, 2003; Cunningham, & Stanovich, 1998; Hasbrouck, Ihnot & Rogers, 1999; Kamil, 2003;Meyer & Felton).

For all?

The key questions is - who benefits from multisensory language instruction. Research studies clearly indicate that SMSLI has been proven to be effective for a wide range of ages and abilities, including adults and special populations, and is an inclusive strategy from which all children would benefit irrespective of learning patterns (e.g. Falzon et al., 2011; O'Connor, Fulmer, Harty & Bell, 2005). For example, although Taylor, Pearson, Clark and Walpole (1999) never specifically refer to the term SMSLI, they identify specific practices conducive to the use of these techniques for successful literacy at the classroom level. Apart from a stress on literature as an enjoyable activity, they include a need for systematic word recognition instruction, repeated reading to develop fluency in reading, guided writing activities, one-to-one reading support, continuous assessment of pupil progress, and daily small group instruction sessions of not more than 20 minutes. These pointers all refer to the need for structure, the use of phonics, the use of modelling and the use of support embedded in SMSLI.   Several government-commissioned reports refer to the importance of direct teaching, although the term SMSLI is often not included. The Harrison report (2002), for example, concludes that all studies of literacy reviewed for this national survey report suggest three major implications: (1) Poor readers need structured and graded texts, (2) Need for structure and guided practice for unstructured texts, (3) Although a "natural" way of reading development may be fine for good readers - in other words the Top Down Approach/Language Experience Approach (LEA) (Goodman & Goodman 1979)

> for weaker readers, a systematic and structured support for reading development, which is offered by reciprocal teaching, and which underpins all similar approaches… is absolutely vital and has the

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potential to make a real difference to the abilities of the weaker readers to cope with a range of texts, both in school and beyond. (p. 20)

The question remains: could there be a better way than SMSLI to address early literacy? Looking at the research discussed above, one notes that SMSLI does not refute previous techniques or reading models, but simply organizes techniques into a structure and within a body of linguistic knowledge where one can utilize all possible strategies to address teaching reading, keeping in mind the diverse profile of the classroom. This allows for the inclusion of all children, even children with intellectual impairment and Learning Disabilities (LD) (Kirk, 1963). For example, in the case of children with Down Syndrome or Autism who are known to be strong visual learners (whole word approach - WWA) and may have difficulties with generalization (use of decoding/phonics), one may maximize their visual strength when addressing reading and build on this strength. Hughes (2006) notes:

Children with Down syndrome learn to read in the same way as typically developing children. They build on their good visual memory skills but find it more difficult to use phonics. In other words, they benefit from learning to read through a 'whole-word' learning strategy initially, bringing in phonics knowledge at a later date. (p. 62)
CAST researchers (http://www.cast.org) develop instructional materials

Programmes based on UDL principles and specifically for students with cognitive impairment use principles embraced by SMSLI. With regard to the CAST resources on literacy, Turnbull, Turnbull and Meyer (2007) note that:

research in literacy [that] suggests that, like all students, students with mental retardation benefit from literacy instruction that focuses on meaning and that also provides direct instruction in the skills and strategies needed to decode and understand print in meaningful contexts. To provide those learning opportunities, these researchers developed software that incorporates universal design features to enable young children with mental retardation to learn to read. (p.219)

and quote Bridget Dalton, project director and CAST chief education officer, who notes that "when we integrate research based literary instruction, the principles of Universal Design for Learning, and technology, it is possible to create learning environments that unlock the potential for students with significant cognitive

disabilities" (p. 219). This supports concepts that SMSLI is inclusive in its theoretical constructs and effective in its outcomes.

The social model of disability.

I have embraced the concept of the social model of disability (Oliver, 2004) for philosophical and practical reasons as it compliments both Adam's model and SMSLI. Oliver describes the use of models as "ways of translating ideas into practices" (p.19). He assigns professionals and society with responsibility to address the challenges and holds that "society and not people with impairments [that] should be the target for professional intervention and practice" (p. 19). Translating this model into the context of this project, my theoretical construct stems from the belief that, if children are not learning, educators should reflect on their own practices and teaching techniques, and change teaching strategies and learning environments accordingly. Within the context of teaching early literacy, this alternative evidence-based strategy is SMSLI. Furthermore, Oliver (2004) argues for "an attempt to switch the focus away from functional limitations of individuals with an impairment to problems caused by disabling environment, barriers and cultures" (p.19). In the context of SMSLI this is translated as the necessary structure, sequence and understanding of individual profiles to ensure access to literacy for all. Oliver also argues for contextualizing "specific problems [not] in isolation from the totality of disabling environments". A lack of structure and sequence in early literacy teaching may lead to young learners not learning how to read because of the learning environment. Oliver also notes that this model appreciates the use of intervention when and as needed. Likewise, SMSLI can be used both in the classroom and in intervention programmes for children with Specific Learning Difficulties (SpLD). Oliver argues that the "potential and usefulness" of the social model of disability was also recognized outside the disabled population and refers to Tony Blair's, then prime minister, aim to remove barriers which hold people "back from fulfilling their potential" (Oliver, 2004). Even in a context where this model is challenged (e.g. Shakespeare & Watson, 2001) I see its concept and applicability useful to SMSLI and the research aim of this project.

Universal Design Learning (UDL).

Universal Design Learning (UDL) was first used by the Centre for Applied Special Technology (CAST) in the early nineties. Its paradigm, concept, theory and terminology - Universal Design (UD) - was inspired by an architectural concept originally formulated by Ronald L. Mace at North Carolina State University. UD proposes designing and constructing all-accommodating edifices and products from the outset. CAST applies this UD concept to learning: curricula should, from the outset, be designed to be inclusive of all kinds of learners; curricula, instructional aims and objectives, teaching methods, teaching resources and assessments should ensure the reduction of physical, cognitive, intellectual and organisational barriers to learning. UDL's educational framework is based on research in the learning sciences, including cognitive neuroscience, and embraces the development of flexible learning environments to accommodate individual learning differences (Rose & Meyers, 2002).

CAST (2011) proposes three guiding principles for curricula: multiple means of *representation*, *expression* and *engagement* - the *what*, *how* and *why* of learning . For example, with regard to representations, they refer to differences in the way learners perceive and relate to information and refer to cultural and linguistic differences, as well as special populations (e.g. the blind, the deaf, SpLD profiles, the gifted) and how this perception and understanding will in turn affect transfer and generalization of learning. Whereas this principle seems to refer to the input and comprehension stage of learning, their second guiding principle refers to the output stage and the strategies, practices and levels of organisational skills this requires. Their inference is that learners should be provided with options to express their knowledge. Multiple means of engagement then builds on the Maslowskian concept of motivation and levels of engagement (Maslow, 1934) and proposes that this is affected by "a variety of sources that can influence individual variation" (CAST, 2011 p. 5). These include neurology, culture, personal relevance and preferences, subjectivity, background knowledge and working styles.

CAST (2011) notes that learning is untenable if information is "imperceptible to the learner, and difficult when information is presented in formats that require extraordinary effort or assistance. To reduce barriers to

learning, it is important to ensure that key information is equally perceptible to all learners" (p.14). They propose the provision of multiple representations through the use of different multisensory modalities allowing for adjustability by users to "ensure that information is accessible to learners with particular sensory and perceptual disabilities, but also easier to access and comprehend for many others" (p. 14). In as much as CAST stresses on reaching out to all learners, even those who cannot read, it notes that learners must "develop a variety of fluencies" (p. 24) such as visual, auditory, mathematical and literacy fluency in order to be effective learners. It explains that this often requires "multiple scaffolds to assist them as they practice and develop independence [where] curricula should offer alternatives in the degrees of freedom available, with highly scaffolded and supported opportunities provided for some and wide degrees of freedom for others who are ready for independence" (p. 24).   This Vygotskian concept of scaffolding and respect for diversity reflect the inclusive UDL framework that also underpins SMSLI (e.g. Moats, 1999, 2005; Hornsby, Shear & Pool, 1999; Wilson, 1996). There are also other valid models and programmes which also embrace this inclusive concept, such as Slavin's Education for All model built on the concepts of sharing abilities and total positive regard to children's potential for learning (Slavin, 1996).

SMSLI and UDL propose an inclusive theoretical framework for successful learning, base their model on theories of learning and development, have an "exciting conceptual framework" and are gaining popularity among educators and disability support professionals (e.g. Rose & Meyers, 2002). On the other hand UDL "appears" (Roberts, Park, Brown, & Cook, 2011) to be sound whilst SMSLI carries a body of empirical research findings. Roberts et al. (2011) refer to lack of research on UDL's effectiveness as a model of good pedagogy, learning outcomes and exam results. They refer to a number of studies with data in support of UDL at post-secondary level, but conclude that UDL "is an exciting conceptual approach that appears theoretically sound but lacks a substantial empirical research base" (p. 14) . Furthermore, whilst UDL refers to all learning, SMSLI focuses on literacy. Most importantly both are guided by the same inclusive principles and the dream to include all, as indicated in Figures 1 and 2 and herein discussed, as well as embrace the social model of disability in their paradigm.

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SMSLI principle 5: Evidence-based practices.

How best to teach reading has been the subject of great debate for most of the post-war period (Chall, 1967), as briefly outlined above. The reading war (Vail 1991) - language experience approaches (Top-down/inside-out theories of reading) versus direct teaching (Bottom-up/outside-in theories of reading) - is now outdated as the literature is clear that one aspect of literacy development is not more important than another and the issue is not what to choose but how to blend in all approaches in the learning environment, as reflected in Adams' (1990) model of reading. Adams argues that there is no need for a division between teaching approaches - whole language or direct teaching - but a need for a structured reading programme respecting all aspects of the reading process and development.

Research findings repeatedly conclude that direct teaching of linguistic structure concepts embedded in exposure to rich vocabulary and varied and interesting texts are essential to beginning and challenged readers (e.g. Adams, 1990; Moats, 1994, 2009), and the use of SMSLI with beginning readers results in more effective readers (e.g. Bos, Mather, Dickson, Podhajski, & Chard, 2001).

Hirsch (1996) considers it unjust not to expose children to what they *must* learn in order to be able to cope with further learning in school. With regard to early literacy teaching to break the alphabetic code, this evidence-based *must* points towards the use of SMSLI (e.g. Adams, 1990; Hornsby 1995; Miles & Miles, 1983; Moats, 1999, 2009; Orton, 1966,1976; Orton, 1925,1928). Research on SMSLI is referred to as evidence-based reading practices, particularly in American literature, where it is referred to as Scientific Based Reading Research (SBRR) (REA, 1998), as noted in Table 2 overleaf. This refers to the application of rigorous, systematic and objective procedures to explore reading development and specifically addresses reading instruction and reading difficulties (Fletcher & Francis, 2004; Reading Excellence Act - REA, 1998).

Table 2. Definition of scientifically based reading research'. (REA, 1998,
          TITLE VIII-Subtitle-SEC. 2252/5)

(5) The term 'scientifically based reading research':
(A) means the application of rigorous, systematic, and objective procedures to obtain valid knowledge relevant to reading development, reading instruction, and reading difficulties; and
(B) shall include research that
(i) employs systematic, empirical methods that draw on observation or experiment;
(ii) involves rigorous data analysis that are adequate to test the stated hypotheses and justify the general conclusions drawn;
(iii) relies on measurements or observational methods that provide valid data across evaluators and observers and across multiple measurements and observations; and
(iv) has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective and scientific review.

Given that SMSLI arose from specialized education, which often involves funding, it is relatively well-researched., Such studies critique that ITT does not include this *must* with regard to early literacy teaching (Binks, 2008) - the "missing link" in early literacy teacher education (Moats, 1994).   The Reading Excellence Act (REA 1998) provides a specific definition for such research (Table 1) which reflects SMSLI principles and adds the concept of validation and verification through empirical research.

Recent research findings conclude that instructions that include explicit teaching (lower level skills) coupled with comprehension (upper level skills) are the most effective, particularly if carried out in the context of other components of reading activities. This forms the basis of this research movement (Fletcher & Francis, 2004). In other words, effective teaching should be multifaceted rather than based on the choice of one approach (e.g. Adams, 1990; Stahl, McKenna & Pagnucco, 1994; Moats, 2009), where educators should make use of these approaches for the benefit of their pupils.

The importance of a language approach in teaching reading, and the use of a holistic, eclectic approach to early reading, are always supported and promoted in the literature (e.g. Cazden 1992; Duffy 1991; Lonberger, 2000; Waugh & Jolliffe, 2008). SBRR, and the context of this present research, notes

that the lacuna is in training teachers how to approach and address the lower level aspects of reading during early literacy instruction, and a lack of knowledge teachers have with respect to the structure of the language (e.g. Binks, 2008; Moats, 1999; 2009; Moats & Farrell, 2005), as will be discussed in Chapter 3.

Moats (1999) summarizes what, according to her, "Research say[s] about effective reading instruction" (pp. 5-7):

- well-designed, controlled comparisons of instructional approaches have consistently supported the[se] components and practices in reading instruction listed below:
- Direct teaching of decoding, comprehension, and literature appreciation;
- Phoneme awareness instruction;
- Systematic and explicit instruction in the code system of written English;
- Daily exposure to a variety of texts, as well as incentives for children to read independently and with others;
- Vocabulary instruction that includes a variety of complementary methods designed to explore the relationships among words and the relationships among word structure, origin, and meaning;
- Comprehension strategies that include prediction of outcomes, summarizing, clarification, questioning, and visualization; and
- Frequent writing of prose to enable a deeper understanding of what is read.

These elements bring together all theories and models of reading historically presented in the literature and emphasize the importance of language experiences approaches (upper level skills) and mechanics of reading (lower level skills) - the focus of this research. The substantial body of evidence with regard to teaching lower level skills of reading points at SMSLI as the most effective way in introduce and develop early literacy skills in the classroom (e.g. Moats, 2000; Oakland, Black, Stanford, Nussbaum & Balise, 1998), and the positive effects of such strategies are no longer a query in the literature. Although SMSLI originated from the field of Learning Disabilities (LD)/ SpLD) (e.g. Hickey, 1977; Hornsby, 1995; Miles, 1997; Miles & Miles, 1983; Orton 1976; Snowling, 2000; Thomson, 2003), its use in the classroom situation is increasingly being appreciated (e.g. Adams & Bruck, 1995; Chall, 1967; Joshi, Dahlgren, & Boulware-Gooden, 2002; Liberman & Liberman, 1990; NICHD,

2000; O'Connor et al., 2005; Schneider & Naslund, 1993). Traub and Bloom (2000) claim that teachers using SMSLI find the techniques effective when used not only for children with literacy challenges, but also with all children, resulting in children learning to spell and read more easily, effectively and expediently at an earlier age. Daniel (1997) reports that with the use of SMSLI children with a profile of LD/SpLD started to outperform children without such a profile. Such results are possible because SMSLI includes phonics, decoding, sight word reading, rule-learning, and meta-cognitive approaches, blended together within a whole language approach (Adams, 1990; Hornsby, Shear & Pool, 1999; Moats 2000). It is therefore clear in the literature that the use of SMSLI is conducive to successful reading for all, and there is ample evidence that all students benefit from such instruction (e.g. NICHD, 2000; Adams & Bruck, 1995).

Moats (1994) notes that the scientific community has reached unanimous agreement that specific difficulties in literacy originate with a "specific impairment of language processing, not with general visual-perceptual deficits, inability to construct meaning from context or other more general problems with attention and memory" (p. 82); in other words, a core deficit in phonological processing linked with the visual verbal input (decoding from print). This implies that there is need for phonological awareness that also includes phonemic awareness of the written language structure, linked to the verbal input that represents these components of the language, in order that learners might effectively break the alphabetic code and become readers able to glean meaning from print. Moreover, research in early intervention clearly indicates that the degree of awareness and skills in the phonological structure of language is the best predictor to reading success (Yopp, 1992; Ball & Blackman, 2001). All research, whether philosophical, theoretical, experimental, empirical, qualitative or clinical, points to the necessity of helping unskilled readers and spellers learn explicit knowledge of language structure, the basic pedagogy used in SMSLI (e.g. Joshi, et al. 2002; Moats 1994, 2009; O'Connor et al., 2005; Snowling 2000).

The conclusions of a number of government-commissioned reports (e.g. Harrison, 2002; Rose, 2006; NICHD, 2000) concur with the concept that SMSLI

are effective tools in early literacy. For example, NRP's (NICHD, 2000) meta-analysis of reading programmes indicates that systematic phonics teaching is more significant and effective to children's literacy growth and development than unsystematic or a total lack of phonics instruction. The NRP also concludes that this is more effective if started at the Kindergarten level. Similarly, although Pressley (2000) focuses on reading comprehension, he stresses the importance of structure in teaching in order to be able to arrive at the end result, namely, gleaning meaning from the written texts easily. Pressley (2000) recommends the teaching of decoding, an emphasis on morphology, the use of contexts, monitoring meaning, relating to texts, addressing inferential questions, and teaching modelling of strategies as well as using scaffolding for independence. These are again principles and strategies embedded in the concept of SMSLI. The American government had actually created the National Reading Panel (NICHD, 2000) to perform a meta-analysis of evidence-based research studies in 2000. This meta-analysis outlined five essential components: (1) explicit, systematic instruction in phonemic awareness, (2) phonics, (3) fluency, (4) vocabulary, and (5) comprehension.

Phonics cannot be taught without structure and contexts (Education & Skills Committee, 2005; Rose, 2006; Waugh & Jolliffe, 2008). Literacy learning and development are not just exercises in the mechanics of reading, but this aspect of the training in early literacy has to be given its due importance and then be well-embedded in fun activities and language experiences. Phonics need to be taught through multisensory activities in order for the skills to be of high quality with regard to learning and application, and must be embedded in a context. Rose (2006) notes that when "early phonic work is taught successfully within a language-rich curriculum" (p. 32), children's confidence, self-efficacy and beliefs towards reading are positively affected. This is also supported in the Effective Provision of Pre-school Education (EPPE) report (Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004) which notes that high quality pre-school learning experiences where particular attention is given to a language rich environment and to cooperation and liaison between home and school reduces the risks of a poor start at learning in Year 1.

Rose (2006) notes that the simultaneous use of visual, auditory and tactile activities not only captures the interest and motivation of both boys and girls, but learning and progress of boys did not lag behind those of girls, particularly in writing. Rose further reports that there is a need for greater technical skills on the part of the teachers, particularly since it is "highly worthwhile and appropriate to begin a systematic program of phonic work by the age of five, if not before" (p. 29). Ehri (2003) finds that the effect of systematic and contextual phonics in an early reading programme is significantly greater when it is the method the children start with, and also leads to a larger sight word vocabulary bank. In other words, early instruction of systematic phonics using SMSLI is very effective for successful reading with all learners and also taps, at a much more effective level, children at risk (Moats, 1999).

Rose (2006) supports the concept that one needs to go beyond mere phonics, reflecting, although never mentioning, a basic principle of SMSLI to teaching reading. He points outs that the mere use of phonics, which has been in place and part of the British National Curriculum since 1989, in and of itself had little impact in improving reading and writing skills. What was, in his opinion, effective was the introduction of structure - the National Literacy Strategy's (NLS) introduction of the Literacy Hour in schools (Education and Skills Committee, 2005). The NLS started operating in 1998 and at the time only 65% of British 11-year olds had reached the required target in English. By 2005, after seven years - in other words a whole cohort of students from Reception to Year 6 - using the literacy hour technique, Rose (2006) reports that the percentage had increased to 80%. Rose attributes this difference to a structure, a system and a context, where:

> Despite the content of phonic work of the National Curriculum over that time, HMI reports show that it was often a neglected or weak feature of the teaching. However, that changed markedly with the advent of the NLS, which engaged schools not only with what phonic content should be taught but also how to teach it [and where] the bold undertaking of the NLS, despite its non-statutory remit, was to match teaching methodology with curriculum content, thus appearing to "tell teachers what to teach". (p. 12)

On the other hand, Waugh and Jolliffe (2008) note that within this context of improvement

> about 20 per cent of the children had still not achieved the expected standard for their age. This triggered a review of the approaches advocated by the DfES. The House of Commons ([Education & Skills Committee], 2005) report concluded that the government should undertake an immediate review of the National Literacy Strategy and the teaching of reading. (p.108)

Of concern, with regard to this Rose report, is that such an important report fails to directly refer to SMSLI. Furthermore, Jolliffe (2006) also critiques the lack of explicit instruction to teachers, which is also reminiscent of Moats' (1999) concern for the "missing link" in education which Jolliffe refers to as the "crucial link" (Jolliffe, 2006). She concludes that there is a need for an explicit understanding of pedagogy and teaching techniques in order for such initiatives to be effective. She explains that whilst the British model adopted the New Zealand Model on which it based its concept for the NLS, it failed to embrace the New Zealand strategy to "develop[ment of] teachers' skills and knowledge" (p. 38) in order to implement best and most effective teaching strategies that laid stress on "strong professional leadership" (p. 38), in a context where "teachers need to understand the underlying pedagogy" (p. 42).

Comparing Jolliffe's (2006) and Moats' (1999, 2009) concern, it seems that one is again facing a situation where important competencies embedded in a philosophical framework are assumed and therefore not addressed. This leads to a situation where "ironically for many of its critics, it could be described as not 'prescriptive' enough" (Jolliffe, 2006; p. 42). Like Moats (1999), Jolliffe (2006) concludes that effective literacy teaching must include explicit comprehension of the pedagogy adopted, the implications for ITT and CPD that this involves, and strategies that include all children. This is supported by research findings on SMSLI, reflecting Jolliffe's plea that "teachers need to know not only *what* to do, but *why* they do it" (p.46), and my concern that teachers may not know that they do not know.

The Argument for SMSLI

Understanding the interdependence between the linguistic structure and components of oral and written language, the need that these should be explicitly taught, and the need to do this in a rich linguistic and literature context, are consistently echoed in the literature.   Research indicates that such techniques are more likely to produce effective readers, particularly when considering those struggling to learn how to read (e.g. Adams, 1990). For SMSLI to be truly effective and motivating for children, the teaching of skills needs to be embedded in a context where reading for meaning, content and leisure is the ultimate goal and is interlaced in the pedagogy. Even from a bottom-up approach, this is precisely why SMSLI does not only promote phonological awareness, but also sight-word approach and reading fluency, such that readers can have easy and expedient access to reading for meaning. For example, Baddeley, Gathercole and Papagno (1998) note that learning and improving vocabulary are facilitated by phonological processing, whilst Berninger and Richards (2002) and Ehri (1995) conclude that proficiency and fluency in reading, reading comprehension, writing and spelling is related to proficiency in word attack skills.

Effective teachers who practice inclusive strategies within Oliver's social model of disability (Oliver, 2004) and UDL as a principle and paradigm (Pugach, 1995; Rose & Meyer, 2002; Turnbull et al., 2007, 2010); and who are aware of and open to SMSLI approaches, particularly with the use of metacognition in literacy cues, yield more effective readers in a more efficient and expedient manner. This study will therefore not discuss further the merits of SMSLI in the classroom, as its effectiveness and success is not in dispute, and research findings overwhelmingly indicate its effectiveness and do not need to be reconfirmed. When teachers implement and believe in such practices, "we may begin to hope for progress in the only reading war that really matters - the one against reading and writing disability" (McCutchen et al. (2002), pp. 81-82).   The focus of the next chapter will be on teacher training and whether teachers are cognizant of such SMSLI early literacy techniques and programmes.

CHAPTER 3

Too many theories
and not enough
instruction and practice

…significant gaps in their preparation to teach literacy…[they] felt prepared for teaching literacy [only] at the most general level… and expressed [a need for] specific literary teaching knowledge and for a better balance since their training had too many theories and not enough instruction. (Louden & Rohl, 2006, p.77-78)

In a context where reading "serves as the major conduit for all learning - the groundwork for both school and life-based knowledge; [where] over the past two decades, both educators and politicians have focused on the importance of assuring that all children become skilled readers" (Podhajski, Mather, Nathan & Sammons, 2009, p. 403) and where "reading is highly dependent on language development and quality instruction" (Birsh, 2005, p.1), this literature review seeks to understand and critique early literacy professional training, given the effect of literacy on every aspect of the human experience and of the human quality of life, juxtaposed against present global statistics on poor reading and socio-economic repercussions (Richmond, et al., 2008).

Before focusing on an aspect of knowledge and skills in early educators, I believe it is important for me to present my views on what, in general, an effective teacher is, as this reflects my philosophy, my belief system and my values which embrace inclusive education and quality of life. Effective teachers in inclusive classrooms need to have the appropriate attitude, knowledge and skills to both create a positive classroom environment and also provide the right learning and successful experiences, where one aim is not more important than another (Sapon-Shevin, 2005a, 2005b). Effective teachers should always have a positive attitude toward students' abilities, be aware of challenges and provide necessary proper strategies. They need to appreciate the rights of all students - no matter their abilities, personality, family background, culture or challenges - to a high quality and effective education. Moreover, students' potential for development and progress must always be respected. Teachers' evolving knowledge base is also important, as the more knowledge one has, the more one will be able to address personal needs and understand the rationale of lesson objectives and lesson outcomes (OECD, 2003a, 2003b).

This knowledge should not be restricted to subject matter but also to students' profiles, classroom organisation, classroom management techniques, group processes and developmental patterns. Finally, effective teachers' skills should not only include interpersonal, leadership and communication skills, but also the ability to task analyze, to adapt, to be creative, to use effective teaching approaches, to create collaborative learning, to self-evaluate and to reflect on their practices in an environment with continuously evolving knowledges and

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skills. These skills have often been quoted in research studies on effective teachers' profiles, and are important to keep in mind when addressing teaching techniques or programmes. Such a profile is also necessary for effective teachers of early literacy (Faculty of Education, University of Malta, 2004; Sultana, 2002).

Within the context of what I consider a humane teacher and of the literature on evidence based research studies presented in Chapter 2, this literature review will discuss teacher education as part of the political agenda of governments as a prelude to presenting research on initial teacher training (ITT) and early literacy teaching techniques, research on changing attitudes, and an analysis of Maltese training programmes. The aim of this literature review is to provide evidence for the relevance of the research question and is again guided by my theoretical evidence-based argument that (a) SMSLI is the most effective and expedient of teaching techniques to developing the ability to glean meaning from print and that (b) this technique has not yet made its way to inclusive classroom teaching (Moats, 2009).

Teacher Training Curricula, Policies and Politics

Education and teacher training are political issues as they affect all aspects of the business and of running a country and also reflect government policies, ethos, ideologies, as well as way and quality of life. Poverty is directly linked to a lack of literacy which leads to a barrier to education, (e.g. Richmond et al., 2008; Stanovich, 1986, 2000). Literacy is on the main agenda of the United Nations (e.g. 2003-2012 UN Literacy Decade), and governments often turn to education to create strategies meant to solve challenges. I will just mention two examples occuring forty years apart:

The 1958 American National Defence Education Act (NDEA) was a reaction to the Soviet Union 1957 launch of the first-ever satellite. Politicians blamed and turned to education in an attempt to win the space race. Sputnik threatened the American belief that its educational system was superior in Mathematics and Science to those of other countries, whilst there was concern that Russian schools were superior. NDEA provided funding to educational

institutions at all levels. This led to substantially more high school graduates attending tertiary education, and over 450 million dollars injected into the educational system over a period of three years (Urban, 2010).

In the wake of the British riots of summer 2011 where shops, ironically except book shops, were looted (The Economist, 2011), British Prime Minister David Cameron (2011) both criticized and turned to a culture for education as a cause and a way forward for social order and control:

> Finally, Mr Speaker, let me turn to the deeper problems. Responsibility for crime always lies with the criminal. But crime has a context. And we must not shy away from it. I have said before that there is a major problem in our society with children growing up not knowing the difference between right and wrong. This is not about poverty, it's about culture. A culture that glorifies violence, shows disrespect to authority, and says everything about rights but nothing about responsibilities. …we need a benefit system that rewards work and that is on the side of families. We need more discipline in our schools. We need action to deal with the most disruptive families. And we need a criminal justice system that scores a clear and heavy line between right and wrong. In short, all the action necessary to help mend our broken society. (Section: Tackling the Deeper Problem, para. 1)

The Council of the European Union (EC) also unequivocally turns to education as crucial in addressing the socio-economic status of member states and always links education to the increase of the labour market, such as its ten-year (2010-2020) plan to raise EU employment from 64.2% to 75% (Wozowczyk & Massarelli, 2011). At its March 2008 council meeting, the EC stressed the need to combat poverty and social exclusion within the remit of the Lisbon Agenda and referred to difficulties due to low performance in reading, early school leaving, and challenges experienced by learners from migrant families or from disadvantaged groups. This communication further stresses the need to address teacher education in a context where (a) teachers are an ageing population (30% over 50 years old), (b) most countries reported "shortfalls in teaching skills" (p. 11), and (c) induction support and Continued Professional Development (CPD) were perceived as weak (European Commission, 2008). The 24th presidency conclusion notes:

> Investments in education and training produce high returns which substantially outweigh the costs and reach far beyond 2010. They should be targeted on areas where economic returns and social outcomes are

high. Education and Training must occupy a central position in the Lisbon reform agenda; in this context, the Lifelong Learning Programme 2007-2013 will be essential.   (Council of the EU, 2006, Minute 24)

This is also reflected in budgets allotted to education by governments. Eurostat (2011) quotes an average of 5.6 % of Gross Domestic Product spent on education, with Denmark (8%), Sweden (7.3%), Cyprus (7.1%), Estonia (7%) and the UK (6.9%) allocating the most for education in Europe and worldwide, and Italy, Greece, Bulgaria, Germany, Slovakia and Romania allocating less than 4%. With regard to the percentage of government expenditure, percentages in the EU range between 8.5% (Greece) and 15.7% (Lithuania). Although private investment in education is increasing in the EU, this increase is only significant in the United Kingdom, Germany, Cyprus and Slovakia (at most 17%), and is still considerably less than that of Japan and Australia (25%), the United States (30%) and Korea (40%).

It is clear that education and ITT programmes are the subject of political discussion and usually reflect the values, culture and significant financial resources of most governments. In this context, what knowledge, attitudes, behaviours and skills educators should possess is an important argument in most countries. Teachers are entrusted with the transmission of government-led purposely selected knowledge, attitudes, behaviours and skills necessary for effective living in societies and sustainable economies of the future.

Knowledge is growing and changing so fast that education, mostly funded by governments, is turning towards *soft skills* - lifelong learning skills in order to cope with continuously changing and new competencies - as opposed to knowledge. For example, 50% of just-graduated engineers' knowledge becomes obsolete in a span of five years; 90% of our present seven-year olds will possibly be in jobs which do not yet exist, and workless peoples are mostly negatively affected by attitudinal barriers, lack of confidence in ability to learn, increasing lack of training motivation with age, and lack of literacy (Newton, Hurstfield, Miller, Page & Akroyd, 2005; Richmond et al., 2008; Taylor, 2005; Winterbotham, Adams, & Kuechel, 2001).

Hoffer (1973) notes that "in a time of drastic change it is the learners who inherit the future. The learned usually find themselves equipped to live in a world that no longer exists" (Aphorism 32). One should not only "train" teachers with the skills and knowledge of today as, even by the time they graduate, their knowledge-base may be outdated. Alternatively, one should "educate" and help teachers develop and address a philosophy of lifelong learning based on concepts of continuous change and need for new knowledge and skills. This does not merely include teaching techniques – "training teachers" –, but presenting techniques based on a pedagogy grounded in a philosophical construct often, in educational systems, politically driven (e.g. UN literacy decade 2003-2012).

Irrespective of whether teacher preparation is an *initial training programme*, which implies reading courses before qualifying as a teacher, *induction* which provides ongoing training and support for newly qualified teachers, or CPD; or whether the *consecutive model* (Undergraduate degree plus further training) or the *concurrent model* (Bachelors' degrees in education) of teacher education is used, this fusion of skills, research and theory must always be adhered to. ITT curricula have evolved to be composed of four major areas: (a) foundational knowledge in education-related areas of knowledge, namely philosophy of education, history of education, education laws, educational psychology, and sociology of education; (b) skills in assessing and addressing student learning; (c) content-area and methods knowledge and skills - often also including ways of teaching and assessing a specific subject; and (d) supervised teaching practice (Ashby et al., 2008).

The critique in the literature is that whereas these four major areas are generally found in programmes, indeed even in the Maltese undergraduate programmes as will be discussed below, there still remains a need for more links between foundation knowledge of education-related areas of knowledge and skills; more links with the theory presented at the educational institution and the classroom experience; more emphasis on hard-core pedagogy (Alexander, 2004); an attitude to continuously address changes in learning and curricula, as needed by the community (Alexander, 2004; Ashby et al., 2008), and, with regard to SMSLI, a better effort to produce early literacy teachers who have a

sound theoretical and knowledge background backed by effective teaching techniques (e.g. Moats, 2009).

Given that we are living in a continuously ever changing civilization, in a world where it is no longer possible to know in advance what kinds of knowledge and skills pupils will need when they enter adult life and because teaching skills required are evolving likewise, no ITT programme can prepare a teacher for a career of even ten, let alone 30 or 40, years. This highlights the importance of CPD and continuously evolving ITT (Ashby et al., 2008). Increasingly, emphasis is placed upon soft skills such as 'learning to learn' or 'social competences', which cut across traditional subject parameters and boundaries, and should therefore affect ITT, schooling curricula, classroom management and teaching techniques. (e.g. Birdwell et al., 2011; Taylor, 2005). Furthermore, the critique that teacher education focuses too much on theories and much less on skills is still ongoing in the literature (e.g. Alexander, 2004; Louden & Rohl, 2006; Birdwell, et al., 2011).

Birdwell, et al. (2011) query why 50 per cent of school leavers in Britain not only do not get academic certification but are also the least equipped to cope in the labour market and have little opportunity to progress career-wise and consequently to improve their financial profile. Aptly called "The Forgotten Half", their report finds a severe lack of preparation in this group of youth and presents a number of recommendations to provide a fairer chance to this 'forgotten half' – the NEETs (Not in Education and Employment or Training). They criticize the academically-oriented university-geared curricula of present education which do not include technical education such as apprenticeships and enough soft skills. The EC goes a step further and address higher institution to address this lacuna:

> The crucial role of universities and their research staff is in the dissemination and transfer of research results to the business community and hence the need of developing managerial skills and competencies for the people involved. The European Council looks forward to the report of the Commission on higher education which will address in particular the triangle education-research-innovation as well as the links between universities and the business community. (EU Council, 2006, Minute 24)

In a context where, globally, university graduates are not the majority, universities should reflect the wider community in research and curricula and should recommend to governments accordingly.

In relation to education, literacy and "the forgotten half", Birdwell et al. (2011) criticize literacy and numeracy teaching as "unsatisfactory". The authors further express concern about the British government's 2010 decision to end the right for individual tuition for young people in numeracy and literacy and the curtailing of funding of early literacy programmes such as Every Child a Reader and Every Child a Counter run by the Every Child a Chance Trust, in spite of a body of research (e.g. Stanovich, 2000) which concludes that "early programmes provide a huge return on investment because of the long term savings in social costs (p. 163)". Birdwell, et al. (2011) query the British government's assertion that this cut was to "give more freedom to head teachers" (p. 163). They echo the raison d'être of the EC with regard to the role and importance of basic literacy and numeracy skills for transition from school to work and hold that investments in such early intervention and later support programmes are "critical" for effective and productive adults.

In a context where Birdwell et al. (2011) are strongly recommending that school curricula "move towards a school system that caters for all students and puts in place the learning and preparation for employment that would enable young people not going to university to make a smooth transition to work" (p.161), they are still advocating the importance of literacy in every aspect of life. This is also politically and practically enshrined in the Maltese scenario as documented by the Directorate for Quality and Standard in Education (DQSE) within the Ministry of Education (2009) in a document on core competencies in primary education:

> There are good reasons why we consider literacy, eLiteracy and mathematics at the core of a quality education. These form the foundations on which a quality education is built... When we talk of Malta developing as a centre of excellence in education in the context of the 2015 Vision, it is morally indefensible to justify that children still leave the primary cycle of compulsory education without mastery of these essential competences. These competences are a right in themselves, essential as tools and critically important for development within a knowledge society. (p. 6)

The EC reflects an increase in higher education but indicates that there are still a lot of "inequities in European education", including unsatisfactory ITT (EC, 2008). Whereas in 2008 three million more students were in higher education and the first decade of the new millennium saw one million more graduates per year, six million young people (one in seven of European youth aged 18-24 years) only achieve compulsory education or less and one in seven four-year olds are not enrolled in education (EC, 2008). The estimated 50% British Youth and almost 40% Maltese Youth (EU Commission, 2011; Walker, 2011) - "the forgotten half" - will leave school without many required key skills they deserve as they walk into an ever evolving uncertain future. These include basic literacy and numeracy. Alexander (2004) laments: what and when, then, is teacher education doing to address these concerns? I further query: are teacher educators aware of these concerns? Are they ready to listen to these concerns? Do they agree that these concerns over the quality of teacher training are justified?

Concerns about the quality of teacher education do not only lie within the EU. In his 1997 State of the Union address, US President Clinton expressed his concern over the quality of teacher education and a need to improve ITT:

> First, a national crusade for education standards - not federal government standards, but national standards, representing what all our students must know to succeed in the knowledge economy of the 21st century. Every state and school must shape the curriculum to reflect these standards, and train teachers to lift students up to them... Tonight, I issue a challenge to the nation: Every state should adopt high national standards, and by 1999, every state should test every 4th grader in reading and every 8th grader in Math to make sure these standards are met….(para. 27) to have the best schools, we must have the best teachers. (para. 31)

This led to the National Center for Education Statistics's - NCES (1999b) report based on teacher preparation and qualifications and teaching practices, where the latter should be a reflection of the former (Lewis et al., 1999). The report refers to teacher preparation and working conditions as pillars affecting education in a context where teachers are being asked to teach new methods and to keep abreast of every technological change as well as diversities in the classroom. Lewis et al. (1999) note that teachers themselves do not feel

prepared to meet teaching challenges. Only 20 per cent of American teachers surveyed in their study felt that they were very well prepared to integrate educational technology in classroom instruction or to meet the needs of students and disabilities; only 28 per cent indicated that they were well prepared to use student-performance assessment techniques; only 41 per cent felt very well prepared to implement new teaching methods and only 36 per cent indicated that they were very well prepared to implement state or district curriculum and performance standards.

In May, 2010 the American Association of Colleges for Teacher Education (AACTE) and National Education Association (NEA) held a special forum on teacher education and state policies. During this special forum, AACTE president and CEO, Sharon P. Robinson, noted that

> The research is clear. We know what is necessary to help develop and support effective educators. As states and localities look at new ways to promote teacher quality, they must not lose sight of the non-negotiables including subject matter knowledge, rigorous curriculum that connects research to practice, and a rich clinical experience. (AACTE, NEA, 2010)

and NEA Vice President Lily Eskelsen cautioned that

> as we discuss improving our public schools, it is vitally important that we address all aspects of the education system. Until we look at a full spectrum approach for transformation that includes teacher preparation and support, our students will continue to receive an education that does not adequately prepare them for the future. We must work to ensure that new teachers have the necessary skills, knowledge, abilities and support, so we are well positioned to change the dynamics in our schools and the trajectory of children's lives for the better. (AACTE, NEA, 2010)

An EU Policy cooperation document presents a profile of teachers' attributes that teachers in EU Member States should possess (EC, 2007). This document perceives a profile of an effective teacher as a professional equipped to respond to challenges continuously evolving knowledges are creating and to effectively prepare learners to be empowered independent lifelong learners. This implies an in-depth knowledge of learning styles and learning processes, the ability to self-reflect on practices, and the insight to understand that teachers themselves are lifelong learners.

This document proposes four common principles which should guide teacher education institutions: (a) sound professional background with regard to content and pedagogy embedded in a (b) context of lifelong learning, (c) mobility across borders and cultures and (d) partnerships across institutions. Likewise, Jolliffe (2006) notes that her findings conclude four important prerequisites for success in literacy development: (1) an effective programme of professional development; (2) genuinely interactive teaching; (3) deep-rooted understanding of the pedagogical process; (4) clear links between theory and practice (p.39). The concern is whether European Educational Institutions are taking these recommendations on board:

> [an] analysis by the European Commission shows that current systems for teacher training and education in the Member States are often failing to give teachers the training they need. Indeed, in some Member States there is little systematic coordination between different elements of teacher education, which leads to a lack of coherence and continuity, especially between teachers' initial professional education and their subsequent induction, in-service training and professional development. (EC Communication, 2007, para. 3)

It appears that in spite of perceptually increasing the professional status of teachers and teacher training by having most countries' ITT at universities (Committee on Higher Education, 1963), it seems that ITT programmes tend to continue to have patchy uncoordinated coursework which fails to allow teacher trainees to process theory and practice, or where theory most often prevails in the university lecture rooms and practice is then only experienced during teaching practice (TP). This creates the lack of coordination and cohesion of knowledge and skills which the EC (2007) finds lacking in ITT programmes. The perplexing query is: what is holding ITT programmes back, given the research and the official reports available? A more profound question – are teacher educators aware of this critique, do they accept this critique as valid, and do they want to change their curriculum and coursework accordingly?

Alexander (2004) reflects on the 1981 Brian Simon study – Why no pedagogy in England?, looks at the situation 25 years later and concludes that Simon's conclusions were still relevant in the wake of a 2003 primary strategy put forward by the Department for Education and Skills (DfES) which again chooses to ignore pedagogy in a context where

Pedagogical research has progressed considerably since then, and in the cumulative body of scholarship and evidence about children, learning, teaching and culture which the [2003 DfES] Primary Strategy has chosen to ignore, not to mention the collective experience of the teachers it claims to respect, I would submit that we have had for some time both an ample basis for a coherent and principled pedagogy and a viable alternative to the pseudo-pedagogy of the Primary Strategy. (p. 28)

Alexander (2004) argues and concurs with Simon that this is set within a historical context where Victorian education was more concerned with character and utility rather than the intellect. He argues extensively on the very definition of pedagogy and how it differs across Europe, influenced by historical, cultural, political and social contexts, and laments that in the English context "pedagogy and didactics, to many, suggests one kind of teaching, traditional direct instruction" (p. 10). He expresses dissatisfaction with and disdain for the 2003 Primary Strategy and laments that "we would do better to go back to Comenius in 1657, whose ideas on pedagogical structure and pace are far in advance of those in the [2003 DfES] Primary strategies (p. 20)." He seems to allude that the 2003 proposed Primary Strategies told all but said nothing - waffled - indeed expressing "scant ground for hope" (p. 23). He notes that:

The doctrine of 'cheap but efficient' one century on, has resolved the growing mismatch between educational task and professional resources by trimming the education rather than re-assessing the resources. This nettle the primary strategy has, in its turn, failed to grasp. Teaching assistants may be useful, but in the context of children's statutory curriculum entitlement they are not substitute for a staffing policy which provides each primary school with a team of professionals who between them have the range and depth of the subject knowledge to do full justice to every aspect of the curriculum for every child, and the flexibility to deploy such knowledge as required…The Primary strategy … is ... patronizing in its assumption that teachers will be seduced by Ladybird language, pretty pictures, offers of freedom and enjoyment and populist appeals to their common sense. There is no case, no argument, some fragments of a strategy but certainly no vision (p. 27-28).

Hirsch (1996) is also very critical, one may dare say brutally so, of American educational policies and practices of the 1990s which, he attests, do not value trained teachers in a context where teachers are exposed to theories of education but not to enough actual content. The American National Reading Panel – NRP (NICHD, 2000) report stresses the importance of effective and appropriate teacher "education" and is of the view that this produces more

successful learning and achievement in pupils. What is interesting is that, in this report, the term used was always "teacher education" as opposed to "teacher training". This is reflective of Flower's (1994) passionate insistence that good theories of reading must reflect both cognitive and social perspectives. Likewise, Poulson (2001) expresses her concern on teachers' subject knowledge both in ITT and in professional development. She advocates for "a higher priority to developing our understanding of the relationship between tacit and formal knowledge, and how teachers learn" (p.40) and laments that "we have very little sense of what exactly it is that teachers learn; how learning takes place; or its relationship to teachers' communities of practice" (p.52).

The NRP Report (NICHD, 2000) argues that while it is possible to train teachers to use particular methods and techniques, it is also important that teachers understand the context, backed by theoretical knowledge, that they are working in: that is, the need for flexibility and autonomy such that their methods and techniques can truly be child centred. The NRP understands the importance of having the appropriate underpinning philosophies and rationales, as it is only in this context that teachers can have the appropriate and effective decision-making tool. NRP looks into the relationship between teacher training, professional training and student success among 70 groups of teachers across the United States. It concludes that, provided they are well-funded and well-supported in terms of providing time for teachers to learn, interventions in teacher education and professional training (a) are successful in improving literacy; (b) improve classroom teaching that leads directly to higher achievement on the part of learners; (c)change teachers' attitudes as a result of successful interventions; (d) evidence that without such changes in attitudes, it is extremely difficult to effect changes in practice; and (e) conclude that no single method of teaching investigated showed unquestioned superiority, but rather an eclectic mix of methods was successful (NICHD, 2000).

Policies on teacher education all stress the importance of professional development, the importance of fusing theory with practice, of helping the teacher-trainees appreciate the culture of their community and that of others in preparation for possible mobility, and of becoming flexible enough to address change in knowledge and skills through CPD in line with evolving knowledge

and resultant practices and techniques. All governments, as also the UN, then include literacy and education as part of their manifesto, and this places literacy as central to Primary school teacher education. In spite of policy and reports written on profiles of teacher education, the UN still finds difficulties with adequate teacher education, particularly with regard to teaching techniques and to understanding how theory affects practices which, in their turn, are built on theory. This brings one in line with the research questions, since it directly addresses effective early literacy teaching. How is the quality of teacher education also affecting preparation to teach early literacy skills? This will be the focus of the next section.

In this section my aim was to contextualize early literacy teacher education within the policies and profile of general teacher education programmes. Theoretically, there is general agreement that teacher education programmes reflect the political pulse of a country, that literacy is of paramount importance politically and educationally in all learning and teaching programmes for educational and socio-economic aspects and that teacher training programmes often fail to equip teachers adequately, particularly with reference to pedagogy and specific teaching techniques (Alexander, 2004). Alexander notes that Hirst critiques that decisions on teacher education cannot be taken on political and cultural ideologies alone, but must be guided by "Professional knowledge grounded in different kinds of evidence" (p. 8) and by experience such that educators can make "rationally defensible professional judgments" (p.8) while they teach, plan and evaluate. This is particularly applicable to early literacy teaching as literacy is pervasive across curricula and embedded in UN policies on education.

The discussion will now focus on early literacy and ITT within a theoretical construct valuing inclusion, equity and quality of life. As noted by the European Trade Union Committee for Education (ETUCE) Policy paper (2008):

> A teacher education programme should aim at developing an academic environment in which all students can build on their personal cultural experience and be fully engaged in all aspects of students' activities. Teacher education students must be equipped with the professional confidence to deal with and to build on the challenges of society in order

to bring out the potential of their own students, in a context of social justice and common values. (p. 61)

SMSLI and Effective Early Literacy Teachers?

Freire (1970) argues that effective teaching techniques are underpinned by individuals' realization of the political and philosophical repercussions of the socio-economic system of the community. This is determined by the perceived relevance and practicality of teachers' knowledge base (Kiwia, 1990). Where does that place effective techniques to teaching literacy? It is clear in the labour market that literacy is necessary, and our environment has made reading necessary for basic survival activities - starting from managing our food intake. This places literacy as one of the priorities of modern civilization which needs to be reflected in the school experience and in ITT. This section will present a number of research findings in an attempt to suggest a theoretical construct for effective early literacy teachers.

Literacy is in and of itself a tool and not a subject like, for example, Science, History or Geography. Literacy skills cut across the curriculum and can be a bridge, or a barrier, to learning. This leads to two very important assumptions. First, literacy is such an important element in education that the focus of early education is teaching to read (Kindergarten to Year 3), and subsequently education uses literacy to teach. These skills are so fundamental and pervasive to academic learning that they are set out in all national curricula across continents (e.g. OECD 2003a, Rose 2006) and enshrined by the UN. Secondly, since literacy skills are not a "subject", teachers must ensure that a context is created for the teaching of these skills. In other words, any underlying literacy skills must be taught within a context on two levels – the *context of content* (linguistics and mechanics of language) and the *context of use* (language and literature) (e.g. Harrison, 2002; Wray, Medwell, Poulson & Fox, 1999; Moats, 2009; Pressley, 2000; Wragg, Wragg, Haynes & Chamberlain, 1998).

Medwell, Wray, Poulson & Fox (1998) were commissioned by the UK Teacher Training Agency to conduct a study on effective teachers of literacy. Such studies are usually criticized because of methodology flaws, such as the

methodology used to correctly identify successful teachers. In this particular study, Medwell et al. (1998) were very stringent in choosing effective teachers and did not only use head teachers' recommendations as a measure but also a two-year measure of students' improvement using standardized tests, as well as Ofsted reports. 228 teachers from all over the UK, a validation sample of 71 primary teachers, and collected data on several issues including belief system, practice, pedagogy, assessment, knowledge, organisational skills and professional development were involved. Their methodology included questionnaires followed by interviews and classroom observations, thus seriously attempting to ensure triangulation.

Their findings conclude that effective literacy teachers have a set of particular characteristics. This group of teachers (a) ensured that reading was taught in a context; (b) created texts within the classroom and by the class children (Language Experience Approach - LEA); (c) used systematic decoding and specifically addressed spelling techniques; (d) introduced pupils to metacognitive awareness of decoding strategies and technique – for example, students were told *why* such techniques and structures were useful to glean meaning from print; (e) emphasised the functions of the content of learning; (f) were well-versed in theories of reading and believed that theories of reading are emancipatory and professionally empowering in nature; (g) had strong philosophies and paradigms that emphasised purposed comprehension and communication; (h) believed in an integrated approach to teaching reading: "the effective teachers did not declare a strong orientation towards phonics… yet they taught phonics systematically, but as a means to an end not as an end in itself" (p. 26); (i) employed well-structured systems of assessments; (j) had an extensive knowledge on literacy and children's literature available, and (h) continually attended professional courses available as they felt that CPD was important.

Medwell et al. (1998) note that whereas there have been several research studies on effective teaching of reading, one finds very few studies on the qualities of effective practitioners in the area. They feel that although there has been research on successful reading strategies, this source of information from the "actual" has been "comparatively neglected". They consider this

information as producing some important lessons about teachers' approaches. They compare teachers' practices of two groups of teachers; one group identified as effective teacher by advisory staff in the LEA and another control group. Their research refers to the teaching of early literacy (Key Stages 1 and 2) and notes that effective teachers use a brisk pace of work; refocus the students' attention on the reading task; make checks on students' progress regularly; use modelling strategies extensively; promote metacognitive techniques: "asked children how they accomplished tasks, what reading cues they used and to explain conclusions" (p. 20); raise children's awareness of their own literacy cues and comprehension; create a literacy environment that has "presence, function and use by children" (p. 20); teach letter sounds within the context of using a big book; use short regular teaching sessions; and are very clear about the purpose of the strategies chosen. Similarly, Wray et al. (1999) note that "the effective teachers of literacy, because of their concern to contextualize their teaching of language features within shared text experiences, made explicit connections for their pupils between the text, sentence and word level of language study" (p. 21). The implications of these studies indicate that for the use of technical skills to breaking the code to literacy to be really effective and motivating for children, there is a need for such techniques to be embedded in a context embracing reading for meaning, content and leisure as the ultimate goal.

Medwell et al. (1998) note that they had carried out the first research of its kind in the UK and beyond. They note that at the time literature with a similar focus was not documented except for one American research initiative (Pressley, Rankin & Yokoi, 1996). They report that this 1996 study used participants by nomination only whilst their study included learning outcomes as a criterion for selection. In spite of the difference in selection, the findings of both studies are similar: engagement in academic activities using on-task communication involving students themselves; effective classroom management; positive learning environment; a cooperative learning environment; explicit teaching of skills involving modelling; and the use of context were effective measures for success.

Wragg et al. (1998) conclude similar findings from their two-year study. They focus on 35 teachers selected on three criteria similar to the Medwell et al. (1998) selection criteria: (a) 90% of the pupils of these teachers had improved beyond expectation, (b) these teachers were highly regarded by their heads of school, and (c) their pupils were attentive and on task.   They infer a list of characteristics and note that each teacher did not have all the characteristics but manifested some of them. These characteristics included a high level of personal enthusiasm for literature, good professional knowledge of children's authors, literacy valued in a literacy-rich environment, public celebration of children's success to increase confidence, careful matching of tasks to children's reading interests, systematic monitoring and assessment, regular and varied reading activities, pupils encouraged and shown how to develop autonomy and high expectations for all.

The Harrison Report (Harrison, 2002) involves a national survey which covers themes from staff development to reading success to teaching strategies, and in this sense is very comprehensive. The report clearly outlines the importance of teacher training, and the conclusion of the survey, which Harrison regards as "good news", is that there is a strong and important relationship between teacher training and literacy progress and improvement. In fact, Harrison extrapolates five major themes for this success: (1) high expectation of students, (2) teamwork including meetings and training, (3) changes occurring over more than one year, (4) literacy intervention at all stages of primary education, and (5) ongoing professional development. Besides, the survey concludes that *fluent phonics* are without doubt important as is the accurate and automatic recognition of words. The report further emphasizes that the "purpose of reading is to gain meaning, not simply to recognize words rapidly" (p. 3).

In 2005 Snow et al. stated that "what is lacking and the task that remains ahead of us as a profession is documentation that teachers who possess this sort of knowledge actually teach better and more effectively (where 'more effectively' means students learn more and better) than those who do not" (p.210). This had been partially addressed in a number of studies even before 2005. In point of fact, teaching and its effect on student learning and

performance is considered by McCutchen, et al. (2002). Their experimental study involved 24 teachers in an experimental group, 20 teachers in a control group and children's reading assessments. The experimental group received an intensive two-week summer instructional programme. Knowledge of the structure of language prior to the intensive training programme was assessed through the administration of the Moats Informal Survey of Linguistic Knowledge (Moats, 1994; Moats & Lyon, 1996), and their general knowledge was assessed through the administration of a 45- item cultural literacy test.

The intensive instructional programmes included teachers' understanding of research about learning disabilities, effective instruction using SMSLI, and the opportunity for interactions and discussion between teachers and a university research team. Teacher implementation following the summer programme was also observed. The experimental group and the university team also had three follow-up sessions in October, February, and May to discuss implementation and address queries. Student learning and performance were also addressed, and 492 kindergarten and 287 first-grade students sat for four assessments throughout the scholastic year (September, November, February and May). This battery of assessment addressed students' phonological awareness, listening comprehension and orthographic fluency, kindergartners' word reading and spelling for the older group and concluded. McCutchen et al. (2002) conclude that:

> Comparisons between experimental group teachers' pre- and post-test scores on the Moats phonological survey indicated that this group did [significantly - p < 0.01] deepen their phonological knowledge after our instruction… (p.75) [furthermore] …children in the experimental conditional gained, on average, about 50% more in letter production than children in control classrooms. (p. 77)

All developmental curves in this study yield a significant difference among the two groups of children. More importantly, no statistically significant difference in listening comprehension scores between the two groups was noted. This leads to a very important inference: emphasis on phonological and orthographic activities does not compromise or negatively affect language and comprehension growth if teachers also ensure language experience in the classroom.

SMSLI instruction and student learning is referred to in several research studies (e.g. Ball & Blachman, 1991; Bradley & Bryant, 1985; Cunningham, 1990; Foorman, Francis, Fletcher, Schatschneider & Mehta, (1998); Foorman, Francis, Shaywitz, Shaywitz & Fletcher, 1997; O'Connor, 1999; Torgesen, 1997; Vellutino et al., 1996) yielding similar findings. These findings generally conclude that exposure to SMSLI and supervised instructional activities indicate that: (1) it is possible, feasible and cost effective to deepen teachers' own knowledge of SMSLI; (2) teachers can use this knowledge to change their classroom practice; (3) teacher knowledge and classroom practice on SMSLI improve student learning; (4) explicit methods to teaching reading does not affect language growth and reading comprehension; (5) such methods are inclusive and yield more effective readers. Podjhajski et al. (2009) conclude that:

> An implication from our findings is that effective professional development, which informs teacher knowledge, can have a positive effect on children's reading performance, in particular for children from lower socio-economic environments… teacher must have knowledge of and the ability to deliver scientifically based reading instruction. This is the only way that we can begin to close the reading gap and reduce the number of children who struggle daily to become efficient readers. (p. 414)

Teacher Training and Teacher Preparation

Historically, in 1961 Austin and Morrison carried out a research study on the nature and quality of teacher training. It is interesting to note that, over forty years later, the reading field is still addressing some of the same concerns analyzed during this study (e.g. Alexander, 2004; Louden & Rohl, 2006; Moats, 2009). This historical research study had two aims: to learn how American training colleges and universities were preparing future teachers for teaching reading, and to suggest recommendations to improve teacher training on reading instruction. The study analyses the programmes of 74 American universities, including curriculum, certification, content, pedagogy used, causes of reading difficulties, reading research needs and anticipated needed changes in reading instruction. Austin and Morrison (1961) list a total of 22

recommendations. These include the need to address content and instructional techniques in teacher training, more training on the job, the opportunity to relate theory to practice, the use of cooperating teachers, and continuous evaluation of universities' and colleges' training programmes.

Morrison and Austin's (1977) follow-up study 16 years later was meant to determine the extent their 1961 recommendations had been addressed by training universities and colleges. This time the study consisted of a three-part questionnaire covering three areas: the extent of adoption of the 22 recommendations, the significant changes of colleges and universities, and recommendations for the future. Effectively, this 1977 study indicates that each recommendation had been taken up to varying degrees. Two of the major findings were that (a) teachers with specific deficiencies in their understanding of reading programmes were required to return to university for additional training, and (b) there was a need for in-service training in reading instruction for principals, supervisors and teacher. Finally, recommendations for the future reveal a concern for an increase in the number of courses and a need for earlier introduction to the classroom situation during ITT, the need to improve the quality of faculty members responsible for teaching reading courses, and the need for federal funding.

Similarly Villa, Thousand and Chapple (1996) refer to a need for "quality in-service programs [which] must afford faculty and staff experiences for continually upgrading their skills for the purposes of supporting increasingly more inclusive learning communities" (p. 42). They propose changes, in both content and format, to ITT and CPD. In spite of all this evidence, concern still prevails. The Journal of Learning Disabilities published a special issue (2009, Vol. 42 No. 5) entitled: *Perceptions and reality: What we know about the quality of literacy instruction*. In general, the nine contributions in this issue echo once again a need for better training with more link between theory and practice, more classroom based learning, and greater exposure to "content knowledge about language" (Moats, 2009, p. 517).

The Rose report (2006) supports all the research on teaching literacy and teacher training. This report very clearly states that if we want early literacy to

improve, ITT needs to improve and in-service CPD training should be provided. This report includes all stakeholders through the use of wide range consultation with practitioners, teachers, trainers, resources providers, policy makers and on-site visits to schools and training institutions. As also previously noted by Darling-Hammond (2000), this report's findings outline five key main ingredients to effecting teaching of beginning readers: (1) well-trained teaching force, (2) well-designed systematic programmes, (3) inclusive assessment of teaching and learning,(4) strong supportive leadership, and (5) principles of high quality phonics working within a language-rich curriculum. In spite of its comprehensiveness, the Rose report fails to refer to SMSLI and the concern is that there may be "experts" in literacy who are not aware of this body of research.

Several studies indicate that teacher quality and student achievement are positively correlated. Darling-Hammond (2000) provides clear evidence from her survey of case studies, case analyses and American state surveys that there is a link between teacher qualifications and pupil performance. These findings underscore the importance of effective ITT programmes since these directly lead to increased student performance. Her results indicate that ITT and certification are more strongly correlated to student performance than student socio-economic statues, language issues, social class, family financial profiles or teachers' salaries. The implication of this study is that communities wanting to improve student achievement should focus on teacher preparation. Moats (2009) expresses concern that "current educational policies and funding practices continue to focus on program selection, school organisation, and student test scores – not teachers, the context in which they teach, or the leadership and professional development required to ensure 'teacher quality' (p. 387)."

The importance of effective literacy teacher preparation has been widely recognized by scientific investigators, scholarly panels, and professional organisations (e.g. Brady & Moats, 1997; International Reading Association - IRA, 1998). These findings point towards a need for effective literary teachers able to address both lower mechanical skills (breaking the code) and more complex linguistic skills in the literary lesson (context rich environment). They

further indicate the need for in-depth knowledge and openness to change, growth and self-reflection. The research also points towards a theoretical construct for successful learning which must include strong teaching preparation, where a fusion of both theory and practice in content and delivery is present. The next section will focus on the specific research with regard to SMSLI and ITT.

SMSLI, Professional Teaching Profiles and Initial Teaching Training (ITT)

The lack of exposure to the appropriate scientific knowledge during ITT and CPD leads to a disconnection between teachers and scientific knowledge about literacy. Birsh (2005) advocates for

> [A] strong foundation of knowledge, enhanced by scientifically based reading research, from which to make judgments about what to teach, how to teach it, when to teach it, and to whom, ensures a successful outcome when working with all students, but especially with students at risk of failing to learn to read or with those who have already fallen behind. (p.1)

ITT prepares teacher trainees in many subjects as well as areas of knowledge, including philosophy of education, child development, health issues and education law. This may result in a packed curriculum which, especially during ITT, allows for a mere introduction to reading instruction (Louden & Rohl, 2006; Moats, 1995, 1999; Nolen et al., 1990). Moats and Foorman (2003) note that "phonics instruction in English requires teachers to lead students through multilayered, complex, and variable spelling correspondences at the sound, syllable, and morpheme [unit of meaning] levels" (p. 24). This knowledge helps early educators develop accurate and automatic word recognition in beginning readers, an ability necessary for fluent and efficient reading to access comprehension. On the other hand, teachers' knowledge of morphology and English helps inform vocabulary instruction, and requires a systematic understanding of the "relationship among word structure, grammatical rule, and meaning" (Moats & Foorman, 2003, p. 24). Moats (1995) concludes that teachers are typically not prepared for the task of teaching literacy "explicitly" to pupils. Graduate teachers may be aware of theories of reading but not of the actual linguistic knowledge and implementation of effective teaching techniques.

Moats notes that this was quite widespread, a repetition of previous studies carried out from the early nineties, and therefore a good representation of the profile of the American community. Moats's results indicate clearly documented gaps in teachers' knowledge, as will be discussed in this section. Lyon, Vaassen, & Toomey (1989) report that both general and special education teachers report that their "real education" occurs after their ITT and when they enter the classroom full time.

The PISA 2003 report (OECD, 2003a) clearly identifies sound "content knowledge" of the subject taught as one of the main ingredients for students' success in learning. In this sense, the content for teaching literacy is the mechanics, the linguistics and the structure of the language (e.g. Moats & Farrell, 2005) which is essential for effective SMSLI. NCES (2000) reports that although everyone agrees that new teachers must be better prepared to teach students, there are limited data available on how well educational institutions achieve this. According to Anders, Hoffman and Duffy (2000), 19,457 studies have been conducted on reading since 1970, but of these only 140 focus on ITT and teaching reading. Moreover, they note that these studies use different research methodologies and research rigour, at times leaving more questions and concerns than answers about the nature of teacher training.

Moats (2009) laments that several studies over the last 20 years conclude that: "Unfortunately, levels of knowledge content about language is typically found to be very low" (p. 387). Spear-Swirling and Brucker (2004) argue that graduate teachers are often not prepared to address early literacy teaching techniques appropriately, and Moats (1995) refers to this aspect of teacher training as "The missing Foundation in Teacher Education". In general, there seems to be consensus that most ITT programmes do not prepare trainee teachers adequately to address early literacy using SMSLI.

Research findings and national reports (e.g. NICHD, 2000; Rose, 2006; Harrison, 2002) suggest specific elements and pupils' skills necessary for learning to read. Notwithstanding, early educators continue to demonstrate limited knowledge of these necessary concepts, knowledges and teaching strategies. Several researchers (e.g. Bos et al., 2001; McCutchen et al., 2002;

Moats, 1994; Moats & Lyon, 1996; Spear-Swerling & Brucker, 2004; Wray & Medwell, 1999) attribute poor classroom instruction to a lack of basic knowledge and understanding of the concepts related to language structure, resulting in the non-delivery or incorrect delivery of early literacy instruction. This is attributed to a lack of exposure during ITT. On the other hand, when teachers/trainee teachers receive high-quality training, student reading achievement improves (Moats, 1999).

A number of studies have been carried out comparing teachers and successful readers. Although the focus of these studies were often on readers, they do provide important insights to teacher training and one can generally infer that these studies indicate that effective early literacy teachers need effective training, including the use of structure, resources, supervision and guidance for knowledge by experts in the area (e.g. Baker, Dreher & Guthrie, 2000; Jenkins, Vadasy, Firebaugh & Profilet, 2000; Juel, 1996; Spear-Swerling & Bucker, 2004; Vadasy, Jenkins & Pool, 2000; Vadasy, Sanders, Peyton & Jenkins, 2002).

I would now like to focus on a particular study which has really influenced my teaching at university, my research interest and the motivation to start an innovative programme at a local independent school. In fact, it was this study which gave me the ultimate push that inspired me toward this research project. Apart from being innovative and daring, this study is unusual as it is a "knowledge test" for professionals. Moats(1994) explores teachers' awareness of language elements (e.g. phonemes) and how these elements are represented in writing (e.g. grapheme/ sound-symbol correspondences). 89 participants – literacy teachers, classroom teachers, special education teachers, and speech and language pathologists (SLPs) – were assessed on their "knowledge of speech sounds, their identity in words, correspondence between sounds and symbols, concepts of language, and presence of morphemic units in words" (Moats, 1994, p. 89). Specifically, respondents were expected to define terms; analyze words into speech sounds, address syllables, indicate morphemes; and find and give examples of phonics, syllables and morphemes.

Results indicate that even highly motivated, literary and experienced teachers had a poor understanding of the spoken and written language

structure; inadequate understanding of language concepts; and persistent weaknesses of skills necessary for direct, language-focused reading instruction, such as an inability to indicate the number of phonemes in a word and to identify phonic relationships. Moats concludes that this lack of understanding of spoken and written language structure makes teachers unable to explicitly teach such essential skills to beginning and struggling readers. Furthermore, Moats also expresses concern that misinformation on differences between speech and print and on how print represents speech was rife.

Specifically, Moats' results indicate that the respondents in her study could not accurately define or discriminate terms such as inflection, derivation, compound, phonetics, phonology, phonics, phonological awareness, speech sound, and phoneme; only 10-20% could identify consonant blends in written words; almost all respondents failed to identify consonant digraphs; and only 30% could explain the 'ck' spelling rule. Phoneme and morpheme awareness was also of concern: only 27% could identify the component morphemes of transparent words, and only 25% knew that "ox" is comprised of three speech sounds - /o/ /k/ /s/. Moats comments that: "Ignorance was the norm" (Moats, 1994, p. 93). With regard to misconception, participants thought that "the letters 'ng' represent an amalgam of /n/ and /g/… silent letters (e.g. tomb) should be pronounced…digraphs such as 'th' represent a melding of two consonant phonemes (/t/+/h/) rather than a unique phoneme [represented by a grapheme consisting of two letters], …a doubled consonant such as the t's in 'little' represents two distinct speech sounds" (Moats, 1994, p. 93).

A later similar study by Moats & Lyon (1996) yields similar conclusions "[teachers have] insufficiently developed concepts about language and pervasive conceptual weaknesses in the very skills that are needed for direct, systematic, language-focused reading instruction, such as the ability to count phonemes and to identify phonic relationships (p. 79)." Moats (2009) supports the premise for a need for more training, notes that "Teachers cannot teach well what they do not understand themselves" (p. 387) and is concerned that "one of the most common findings in studies of teacher knowledge is that teachers are unaware of or misinformed about the elements of language that they are expected to explicitly teach" (p. 387). Wray and Medwell (1999) similarly report

skimpy knowledge based on intuition rather than on abstraction, metacognition and linguistic knowledge:

> Even the effective teachers, however, had limited success at recognizing some types of words (e.g. adverbs, preposition) in a sentence and some sub-word units (e.g. phonemes) out of context. Units such as phonemes, onset and rimes and morphemes were problematic for them and even using more everyday terminology for these units still did not guarantee success for the teachers in recognizing them out of the lesson context. Despite this apparent lack of explicit, abstract knowledge of linguistic concepts, the effective teachers used such knowledge implicitly in their teaching, particularly that connected with phonics. It seems that these teachers knew the material they were teaching in a particular way. They appeared to know and understand it in the form in which they taught it to the children, rather than abstracted from the teaching context. This is an important finding, which we feel has implications for the content of teachers' continuing professional development. (p. 4)

Bos et al. (2001) also "examined whether educators were knowledgeable about recent research findings that identify critical components of instruction for teaching reading to a broad range of learners… and [if they] were favourably disposed to using an explicit, systematic approach for students who struggle to learn to read" (p. 114). 252 trainee teachers before or during teaching practice and 286 graduate professionals with varied amounts of teaching experience were asked to fill in a perception survey designed to measure attitudes, knowledge and self-perceived preparation to teach early reading skills. Bos et al. (2001) conclude that "pre-service and in-service educators demonstrated limited knowledge of phonological awareness or terminology related to language structure and phonics" (Bos et al., 2001, p. 98). For example, 53% of trainees and 60% of professionals were unable to correctly answer nearly half of the "Knowledge of Language Structure" questions. This team notes that whereas nearly all respondents could define a phoneme, identify a short vowel sound, and identify two words that began with the same sound, all other scores fell below 67% accuracy. Less than two-thirds had mastered the meanings of SMSLI terminology (e.g. syllable, consonant blend, and digraph), only 50% were able to segment the phonemes in a two-phoneme word, and most failed to segment four-phoneme words. In this study, special educators demonstrate more knowledge than general educators, and educators with more than 11 years of teaching experience have greater knowledge of language structure than educators with five years or less teaching experience. Participants perceived

themselves as only "somewhat" prepared to teach early reading to struggling readers. In this respect one can infer that at least they were aware that they "do not know" enough, which may possibly make them open to learning and development.

Bos et al. (2001) further note that "The relationships between educators' perceptions of their preparedness to teach and the attitude ratings and knowledge scores indicate that in general, pre-service educators' attitudes toward a particular instructional approach may have had a greater effect on their feelings of preparedness to teach than their in-service colleagues" (p. 115). Trainees who preferred an explicit approach felt more prepared to teach all children, including struggling readers, and to address phonological awareness and phonics. On the other hand, whereas professionals with a more positive attitude toward explicit instruction perceived themselves as more prepared to teach specific aspects of literacy – phonological awareness and phonics – they did not feel so confident to address all readers or struggling readers. Respondents who felt more confident with the knowledge of language structure also perceived themselves as more prepared to teach all children how to read. On the other hand, all educators who felt more positive about implicit code instruction seemed to feel more prepared to teach using a whole language approach. Bos et al. (2001) conclude that these findings "[indicate a] mismatch between what educators believe and know and what convergent research supports as effective early reading instruction for children at risk for reading difficulties" (p. 98). These results continue to evidence that SMSLI is not communicated effectively to teachers and trainee teachers, rendering early educators with lack of, limited or incorrect knowledge about the structure of the English language and, therefore, with limited skills to teach reading explicitly.

Falzon and Muscat (2001) evaluated CPD carried out at a Maltese independent school. One Grade 2 teacher in this study perceived this CPD from an "expert" point of view, as a learning and metacognitive journey for her in spite of years of teaching in the early years: "She was our fulcrum, she was important, certain things we did not know. She gave us papers with instruction and I used to ask her. She was a very good teacher. You know some things but then you click - get and understand the reasons for everything … (slide 14)".

This group of teachers also refers to a lack of and/or incorrect knowledge prior to this specific training in SMSLI: "The teaching techniques, those are beautiful, what she taught us, especially the rules of learning. I have been teaching for 21 years and I have always stressed on reading and spelling - I am obsessed. But I have never had a class that can really make out a word, reasoning, using the rules. Those are beautiful!" (slide 44, Grade 3 teacher).

Spear-Swirling and Brucker (2004) examine the word structure knowledge of novice teachers using three tasks: grapho-phonemic segmentation, classification of pseudo words by syllable type, and classification of real works as phonetically regular or irregular. The study involves novice teachers with and without SMSLI training. The result of the study clearly indicates that pupils of trainee teachers who had received SMSLI training achieved significantly better pupils' reading results as pre- and post-test results indicated. This again highlights that teachers' knowledge of the grapho-phonemic structure of the language is very important in effective teaching of literacy and that it is paramount that such training is included in teacher training programmes. Furthermore, error analysis also reveals links between teachers' patterns of word-structure knowledge and children's patterns of decoding progress: "This pattern [of results] suggests that knowledge acquired as part of course instruction influenced novice teachers' abilities to teach word decoding effectively" (p. 354). These authors refer to a number of distinct elements used in the preparatory ITT sessions. These include (a) structured lesson plan emphasizing one or two basic techniques addressing specific skills; (b) specific assessments with detailed clear information about skills to work on; (c) opportunities for practice administering assessments during tutoring, and (d) presentation and opportunity for practising various instructional techniques during tutoring (p. 356).

Similarly, Spencer et al. (2008) note that their comparative study with teachers and with speech and language pathologists (SLP) reveals better knowledge in the latter group. Furthermore, teachers in this study had not only lack of but also incorrect knowledge: "the phonemic skill level of the reading and special education teachers was not sufficient to provide an accurate phonemic awareness intervention… [with] misconceptions about speech and print" (p.

517). They note that only 55% of the teachers could correctly identify the four speech sounds of one of the easiest words on their research tool - *stop*, compared with 89% of the SLPs. Of most concern to these authors is that the knowledge of specialist literacy teachers was not any better than those of classroom teachers and Kindergarten Assistants (KGAs). In their study they therefore recommend the inclusion of linguistic knowledge, analysis of this knowledge and an understanding of the philosophy behind this knowledge and its importance to teaching reading effectively in ITT and CPD: "effective training must help education to thoroughly understand that speech maps to print (and not the reverse), to analyze speech without reference to print, and, ultimately to think clearly about how speech maps to print" (p. 518). Similarly, with regard to their study on teachers' attitude towards and knowledge of metalinguistics in the process of learning to read, Fielding-Barnsley and Purdie (2005) conclude that in order to effectively teach reading, writing and spelling, teachers "need to understand the relationship between speech and print because these basic language processes are often deficient in cases of reading failure… teachers also need to be knowledgeable in this area to benefit from psychologist and specialist reports" (p. 65). These results also echo conclusions of other studies (e.g. Brady & Moats, 1997; McCutchen & Berninger, 1999; Moats, 1994, 2000).

Nolen, McClutchen and Barninger (1990) survey syllabi and programmes of teacher preparation in general education and note that the minimal requirements of training did not equip teachers to handle class learning challenges. Lyon et al. (1989) present a similar argument and are more specific in their description of ITT, calling it "inadequate". They regard the teaching of literacy as the job of an expert and therefore needing intensive theoretical and practical preparation in teacher training. Teachers need to be adequately prepared for teaching literacy as this, in turn, not only brings about success for students but also self-efficacy for teachers. The ripple effect is also less referrals to intervention programmes. Soodak and Podell (1996) postulate that students are usually referred for support when teachers feel that they cannot help bring about positive outcomes.

Linking research and practice is paramount to teacher education (Zeichner & Liston, 1990). One cannot belittle the importance of theory, as this

helps in producing effective decision-making teachers who can then transfer their knowledge of reading theories to the practical teaching situations (Hollingworth, 1989; Zeichner & Tabachnick, 1981). However, this must also be backed up by the correct practical content to achieve effective literacy teachers (Louden & Rohl, 2006; Moats 1995, 1999, 2009). The International Reading Association (IRA, 1998) developed standards for reading professionals in order to use as guidelines to evaluate training programmes. IRA used three descriptors of proficiency: awareness, basic understanding and comprehensive understanding: *Awareness* - student teachers being trained to be aware of the different aspects of literacy development; *basic understanding* - related proficiency in the performance of tasks with regard to literacy development ; and *comprehensive understanding* - the ability to proficiently apply broad, in-depth knowledge of all the different aspects of literacy development of the classroom (IRA, 1998). IRA (1998) specifically develops sixteen areas of literacy competencies for reading professionals. These cover not only instruction and assessment, but also knowledge and beliefs about reading, as well as organizing, enhancing and implementing reading programmes (Appendix A). More than half of these literacy competencies relate to the practical aspect of teaching literacy and a good basic knowledge of the language structure. This becomes very important when one looks at teacher-training programmes and the lack thereof of these characteristics (Hollingworth, 1989; Louden & Rohl, 2006; Moats 1995, 1999; Zeichner & Tabachnick, 1981; Zeichner & Liston, 1990).

The IRA (2001) identifies seven key positive features in teacher training. These include: (1) programmes with clearly spelled-out purposes and goals, (2) faculties with a clearly defined mission statements integrated throughout their programmes, (3) faculties who endeavour to maintain the integrity and quality of the literacy programmes, (4) student-centred programmes, (5) supervised apprenticeship programmes, (6) programmes which embrace in-depth content knowledge to best meet the needs of the diverse students, and (7) programmes that demonstrate the necessary knowledge and skills to help children from diverse backgrounds.

The trend to produce teachers not versed in linguistic knowledge and techniques to teaching early literacy seems to be pervasive in countries across continents with an Anglo-saxon tradition. Louden and Rohl (2006) argue that their results yield different perceptions among Australian beginning teachers and senior staff, where beginning teachers take a more positive view than senior staff. They note that whereas their study yields more positive results when compared to previous Australian studies, their respondents also voice concern. They caution against general conclusions that teacher training is ineffective but report that beginning teachers in their study perceive "significant gaps in their preparation to teach literacy…[they] felt prepared for teaching literacy [only] at the most general level…" and express "[a need for] specific literary teaching knowledge" (p.77) and for a better balance since their training had between "too many theories and not enough instruction" (p.78), and a need for "more time on practicum/teaching rounds in school before graduating and more effective mentoring after graduation as more important" (p.77). Their results indicate that beginning teachers feel confident about general aspects of preparation to literacy but less confident about the mechanics of teaching literacy and linguistic scientific knowledge necessary to do so. They report that within four-year ITT progammes "pre-service teachers typically take two or more units with a literacy focus" (p.66).

Joshi, Binks, Hougen, Dahlgren, Ocker-Dean and Smith (2009b) echo that in spite of several national American reports and research findings suggesting the effectives of SMSLI, many teachers are still not knowledgeable in the basic concepts and structure of the English language. They report that teachers may be "well-versed" in children's literature but then lack knowledge and techniques on how to address the language structure, what they refer to as the "basic building blocks of language and reading" (p.392).

The IRA (2003) specifies critical features that must be included in effective ITT programmes: oral language, phonological and phonemic awareness, phonics, word identification, fluency, vocabulary, comprehension, assessment. Findings discussed in this section indicate that these needs are not reflected in ITT programmes.   ITT does not seem to include sufficient or in-depth content and skills training. This may seriously impact implementation of

recommendations such as those offered by the NRP (NICHD, 2000). ITT and CPD should develop preparation programs "to foster the necessary content and pedagogical expertise at both pre-service and in-service levels" (Lyon ,1999; p. 8), as teachers' attitudes about their teaching responsibilities and parameters are affected by their knowledge and their attitudes (Cunningham, Zibulsy, Stanovich & Stanovic, 2009).

Research findings clearly indicate that early educators have little or no knowledge of SMSLI and related content knowledge; and teachers exposed to SMSLI perceive its usefulness and these techniques as more effective. The studies herein discussed argue for my theory that teachers "do not know that they do not know" (Falzon, 2010, p.104) with regard to a need for exposure to hard-core knowledge about the language structure and its need to teach early literacy as effectively and as expediently as possible and is actually the major concern that inspired my main research question.   As Cunningham et al. (2009) note: "a recent line of research suggests that teachers are largely unable to accurately assess their own performance on measures of literary knowledge and that they often overestimate their knowledge of phonemic awareness, phonics morphology and children's literature (p.428)."

Addressing Teacher Educators (ITT trainers)

Given that teacher educators design ITT curricula and syllabi, it was felt necessary to look at research on teacher trainers' knowledge on SMSLI - a fish starts smelling from its head, quotes a Maltese proverb. A search of the literature only yielded few studies addressing teacher educators' linguistic knowledge and knowledge in connection with SMSLI. Reynolds, Wang and Walberg (1992) note that, in a survey given to university and college trainers, most of the "experts" did not attribute the mastery of structural language knowledge as a critical component in successful reading. It is thus understandable that such techniques are not put in ITT programmes. This is also reflective in primary education teacher training in Malta, as will be discussed below. Likewise, Louden and Rohl (2006) report that student teachers themselves queried how relevant methodologies presented by teacher trainers were. Beginning teachers differentiated between teacher trainers who had

"forgotten what it is like" (p.73) and others who "remained in contact with classroom practices and were able to support pre-service teacher to develop literary teaching strategies (p.73)."

Joshi et al. (2009b) surveyed 78 teacher trainers. They conclude that even though teacher educators were familiar with syllabic knowledge, they performed poorly on concepts related to language concepts such as morphemes and phonemes. Furthermore, 80% of another set of 40 instructors interviewed about best practices in teaching components and subskills of reading incorrectly defined phonological awareness as letter-sound correspondence and did not refer to phonics as an effective method for early literacy instruction, particularly for students at risk for reading difficulties. Joshi et al. (2009a) also propose lack of relevant information provided in textbooks on literacy used by teacher training colleges. This team carried out a content analysis of components of textbooks recommended by American NRP (NICHD, 2000) - namely phonemic awareness, phonics, fluency, vocabulary, and text comprehension and conclude that many textbooks do not adequately cover these five components content and methodology-wise. In addition to the poor amount of information, of more concern is that some textbooks analyzed actually presented incorrect information and errors.

A group of American universities are running research on this issue. The Texas Reading First Higher Education Collaborative (HEC) was designed to engage teacher educators from Texan colleges, universities, community colleges, and alternative certification ITT programmers in an active effort to improve the reading achievement of Texan students by directly addressing the "missing link" (Moats, 1995) in ITT. Starting with 15 faculty members from four institutions in 2000, it now includes hundreds of teacher trainers from more than 80 institutions. In 2005 the consortium also included principals and other school administrators. The objectives are to (a) ensure that teacher trainers are knowledgeable about and incorporate SMSLI in their courses; (b) prepare and provide resources; (c) create a spirit of collaboration and continuous development; (d) initiate and maintain direct contact with schools; (e) address the importance of school leaders' and teacher trainers' SMSLI knowledge; and (f) create collaborations to ensure implementation and dissemination. In order

to achieve these aims seminars, presentation of materials and programmes, on-site training, practical training on knowledge and techniques and discussions of research are organized. How to incorporate SMSLI into ITT courses is specifically discussed and practically provided. This includes distribution of material, complete modules (slides, handouts, and videos), books, and other resources. The effectiveness of the project is determined though member evaluations and surveys with teacher trainees. An HEC on line was also set up as further support (home page http://www.meadowscenter.org/vgc/pd/hec.asp)

Binks's (2008) unpublished doctoral thesis investigates the effectiveness of such training and collaboration. She notes that her contribution is innovative as little research has focused on the knowledge and expertise of teacher trainers. She echoes arguments already put forward (e.g. Moats & Foorman, 2003; Spear-Swerling & Brucker, 2004) and argues that teachers cannot be expected to

> learn the essential basic language constructs needed in early reading instruction through field/teaching experience, reading programs, screening tests, or even individual pursuit. Rather, [ITT] coursework has been proven to increase teachers' reading knowledge and ability, when such courses provide explicit instruction and ample practice in each construct. (p.94)

The 287 participants in her study include 66 university instructors and 118 trainee teachers who had not been involved with HEC programmes, and 48 university instructors and 55 trainee teachers who had been exposed to SMSLI. Binks's survey results on self-perception, knowledge, and ability related to basic language constructs indicate that

> university instructor's self-perception, knowledge, and ability in basic language constructs is greater when having participated in the professional development program and this higher self-perception, knowledge, and ability appears to carry over to pre-service teacher students as well. This conclusion is evidenced by overall higher performance on survey items by the professional development groups, as well as statistically significant correlations between professional development and survey results. (p.95)

Teacher trainers and teacher trainees taught by university instructors who had been exposed to HEC training, on average, scored higher on almost every

item of the survey than their counterparts. Binks's results also indicate a particular need to address phonics and morphology. Moreover, although teacher-trainers had some knowledge and could apply some basic language constructs, they did not have a metacognitive awareness of this knowledge, "highlight[ing] a critical need for improvement in university instructors' knowledge" (Binks, 2008, p.97). Binks infers that "professional development of university instructors of reading education will ultimately lead to increased student reading success" (p.98).

In the local Maltese scenario, the Directorate for Quality and Standard in Education (DQSE) issued a national policy and strategy document for core competences in primary education (DQSE, 2009). In its very title, this 86-page document declares that it would address both policy and strategy, where policy is defined as "a set of criteria that underpins the strategy and which emerges from the principles and beliefs enshrined in the [1999] National [Minimum] Curriculum" (p .14) and strategy as "recommend[ing] general guidelines for ways of implementing the policy" (p.14), which would lead to "action plans developed and 'owned' by the various colleges and schools" (p.14). Advising for a revision of teaching and learning processes for competences and to not be tied down to specific programmes, the document explains that teachers need to "own" the policies and action plans as only if they believe in, really understand and are excited and motivated will they implement in the classroom. The document also concedes that teachers require not only CPD but also "adequate and on-going support" (p.14). So far so good. Difficulties then arise and echo the research discussed in this section when the document refers to SMSLI. Both patchy and very skimpy knowledge on theories of reading development as well as an erroneous definition of SMSLI are observed. This, I feel, is quite worrying, particularly when the Chair of this document is herself a teacher educator.

Whereas the document refers to "structured multisensory teaching" and acknowledges its positive impact, it then embraces the techniques as effective for "struggling and/or dyslexic reader and instrumental in reducing literary difficulties and extending literary opportunities" (p.23) and places SMSLI in the "Community Based Programmes" section. Politically, its mention and its placement have negative ramifications and are also reflecting an anti-inclusive

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philosophy. Putting SMSLI in the section "Community-based Provision: Suggested Support Programmes", where community based programmes are defined as "family support programmes" and "wider community initiatives" (p.26) and referring to SMSLI as beneficial for children with difficulties only, may imply that (a) these techniques should be carried out outside the classroom; (b) it is not necessary for general primary teachers to be versatile in these techniques (c) it is not useful for all children and (d) a lack of understanding of inclusive strategies.   In this policy document, SMSLI seems to be presented as an "extra" - an appendix - and within a limited and rather outdated reading model where, whilst referring to Adams (1990) Interconnectionist Model of Reading, then reduces reading theories and approaches as: "While one school of thought has advocated the whole word method another movement has posited strongly that the teaching of phonics is all effective" (p.24) Furthermore, in the same paragraph it calls for a need to use "multisensory teaching/learning" as an alternative, defining it as an approach that "use[s] all sensory modalities". This is rather worrying as the document seems to indicate that the technocrats involved in the writing of the document are not conversant in theories of reading both with regard to concepts and with regard to research, not conversant with theories and techniques of reading development, not conversant with the Adams' model of reading they actually quote and not well-informed on evidence based research studies (Binks, 2008).

    Furthermore, the teachers' role for structured multisensory teaching is perceived as "the training of teacher and support assistance in multisensory techniques to regularly target individual needs" (p. 25). DQSE does not seem to see these techniques as instrumental to address literacy in the classroom by class teachers, even though local research on SMSLI implementation in more than four schools is available. Since the publication of this document, the Local SpLD services have been training "complimentary teachers" and literacy support teachers in SMSLI. Locally, complimentary teachers are support teachers who address learning difficulties within or outside the classroom with regard to literacy and numeracy. Literacy support teachers are a new concept introduced by Dr Christine Firman (SpLD Unit) . This is on the one hand an improvement but on the other defeats the inclusive construct referred to in the policy document. The SpLD team should train all teachers.

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Beliefs and Attitudes to Instructional Practices and Change

In a context where teacher trainers do not seem to include SMSLI in their programmes and in a context where teachers tend to teach in the way that they are taught (Snow-Renner & Lauer, 2005) it is important to discuss teachers' beliefs and attitudes in connection with instructional practices. Teachers develop a philosophy for instructional practices consistently based on their beliefs and attitudes about content and student learning. Snow-Renner and Lauer (2005) note that these are often

> Firmly nested within the paradigm of teacher-centred instruction. But, if teachers are asked to shift to more student-centred ways of instruction, they also must adjust their beliefs to fit the new paradigm. To teach in the ways envisioned by standards reformers, teachers need strong content knowledge and the ability to change their pedagogical repertoire as well as their underlying beliefs and attitudes about it. To do this successfully, teachers need opportunities for deep learning of content, as well as opportunities to learn how to use reform-oriented strategies, practice those strategies in the classroom, and observe their effects on student learning. Therefore, standards-based professional development is the cornerstone of a successful standards-based system. (pp. 2-3)

Several (e.g. Fang 1996; Farrell 2001; Gupta 2004; Kagan 1992; Pajares, 1992; Richardson 1996;) note that teachers usually have well-developed and grounded beliefs and views about teaching and learning that make them resistant to change and to different pedagogies. Gupta (2004) and Gupta and Saravann (1995) note that due to the difference between the training and the trainees' own beliefs, trainees tend to fall back on remembered routines during their teaching. Brady et al. (2009) note that they found experienced teachers more sceptical and resistant to explicit teaching of language structure than novice teachers, particularly if such new knowledge threatened their belief systems. This is particularly prevalent in reading techniques because it is different to when one is teaching a subject.

For content subjects such as history and science, education deals with content knowledge, but for language and literacy, one deals more with skills rather than specific content and subject matter, and therefore teachers tend to fall back on "routines" they are familiar with. This happens particularly since they

have spent all their school years practicing these literacy skills such that by the time they reach university education, it may be a difficulty to change such ingrained beliefs and skills and this then translates into actions in the classroom (Richardson, Andres, Tidwell & Lloyd 1991; Zancanella 1991). Fisher, Fox and Paille (1996) identify difficulties involved in preparing trainee-teachers to use literacy strategies that they themselves have never experienced either because they, as children, were never exposed to them, or because they have never observed other teachers and mentors in their training, using them. In his study of Singapore trainee teachers and reading instruction, Gupta (2004) concludes that trainee teachers are at times expected to teach techniques and strategies that they themselves have never learned, such that they are ill-equipped and unprepared to teach students appropriately.

Cunningham et al. (2009) note that both researchers and policy makers express concern with how teachers structure literacy lessons and knowledge about reading development, processes, and teaching techniques. They explore the beliefs, knowledge, and instructional practices of 121 early literacy teachers using self reporting. The teachers in this research generally preferred varied language arts activities, but some teachers also "performed well on both administered phonic tasks" (p.427) and allocated more time to structured instructional activities. They comment that practices of teachers who "privileged" reading literature over other activities were not in keeping with the current research and policy recommendations and expressed concern at a dissonance between findings of national reports (e.g. NICHD, 2000) and the communication of these reports to practitioners. Even taking into consideration the limitations of the study, such as sample size, they conclude that:

> Research-based practices will not be employed widely, nor with fidelity, until teacher are knowledge and beliefs congruent with the instructional practices recommended by research and policy consensus. For this reason, studies that explore teacher characteristics are essential in determining how to truly support student success in reading. (p.429)

Changing beliefs and attitudes.
Teachers will use teaching techniques only if they themselves have had training in the area, if they believe in the strategies and techniques presented to them, if they are familiar with such techniques and programmes, and if they are

actually willing to use them. In their work experience, teachers develop highly individual approaches to teaching and if in time these approaches need upgrading and change, they need to make a fundamental shift. Teachers may be wary and hesitant in doing so. In such situations they will go through the same stages of new learning than any pupil goes through. First going exactly by the book without making complete sense of the *why* and *how*, then consolidating and feeling confident and eventually coming up with their new assimilated approaches. Of course, this cannot happen overnight and also needs the system's support (Taylor, et al., 1999). In fact, Taylor et al. (1999) state that it takes up to three years for large-scale innovations to start having an effect on school and learning.

Cunningham et al. (2009) note that "Implicit belief structures are often resistant to change (Richardson, 1996) and thus, even acquiring knowledge may not lead to a shift in teachers' choice of instructional practices" (p.427). Before presenting particular innovative strategies and techniques, one needs to address the belief systems of trainee teachers, in order to ensure that the new strategies have been embraced by the user. Granted, it is not easy to change trainee beliefs in language education, as trainees would have already developed their own theories about teacher and learning language and literacy that may be difficult to change. There are however, effective ways to address these needs. For example, Shrofel (1991) and Grossman (1991) use techniques where they encouraged trainees to understand the role of the learners and criticize what was wrong with pedagogies used. Mosenthal, Schwartz and MasIsaac (1992) not only trained the trainee teachers to use new reading strategies, but gave them ample time for practice using these strategies. This practice allowed trainee-teachers to become more aware of the effectiveness of the new techniques being presented to them, as they themselves were experiencing them. They were then more inclined, more convinced and more comfortable to use them in their teaching. Pedagogy is not only a matter of teaching strategies, but also a philosophy. Attitudes first need to be addressed when implementing a change. This also leads to better job satisfaction (Kaiser, Rosenfield & Gravois, 2009).

Simply giving packs of material to teachers is counterproductive and leads to no improvement (Stallings & Krasavage, 1986). Fullan (2000) notes that any change in education has to involve and be supported by teachers. This is not a mere distribution of material but involves meetings, planning, engagement and teamwork. He states that the "massive failure" to reform and implement initiatives in the 1960s and 1970s was because the methods of dissemination only involved forwarding material as opposed to systemic changes in the school, classroom and district levels. He points out that for innovations to be effective and implemented they need to have involved the front liners – the teacher and the school. Furthermore, front liners must be supported by effective partnership networks. This conclusion is also reported in the NRP (NICHD, 2000) report and supported by the practices of the HEC (Binks, 2008).

The NRP (NICHD, 2000) identifies that systematic phonics instruction, training in phonemic awareness, fluency, vocabulary, and strategies for comprehension are all necessary components of quality reading instruction. Furthermore, the National Research Council (Snow, Burns & Griffin, 1998) concludes that "quality classroom instruction in kindergarten and the primary grades is the single best weapon against reading failure" (p. 343). The issue is whether teachers are actually aware of their gaps in learning. Findings indicate that whilst teachers rate themselves as knowledgeable, they then indicate actual limited knowledge (e.g. Bell, Ziegler,& McCallum, 2004; Cunningham, Perry, Stanovich & Stanovich, 2004; Podhajski et al. 2009). For example, in their study Cunningham et al. (2004) find a discrepancy between belief and actual knowledge of early educators teaching in the first four years of schooling, including kindergarten. This includes not only knowledge on children's literature but also SMSLI elements of early literacy teaching such as phonemic awareness and phonics. Ironically, their results indicate that those teachers who were confident of their phonemic awareness knowledge actually did worse than those who perceived themselves as having limited knowledge and skills in this area. The authors infer that this overestimation may actually be a dangerous situation as it may then become more difficult for teachers to accept new knowledge and techniques and impede openness to new learning. This echoes one of Rogers (1969) principle of learning: Learning which involves a change in self perception of oneself may be threatening and tends to be resisted.

Spear-Swerling (2009) also concludes that there is a disparity between perceptions of general knowledge on literacy development and language structure. Simply carrying out instructions - in this case study eight hours - is not enough for teachers' knowledge to be translated into classroom instruction effectively. Notwithstanding, the Spear-Swerling study indicates significant progress in children even after a "brief term of six instructional sessions [for educators] and did not depend on whether their [the children's] tutors were graduates and undergraduates" (p.441).

Lonberger (2000) investigates three research questions concerning student teacher's belief system: (a) what is reading? (b) How do you believe young children learn to read? (c) How would you teach a young child to read? These three research questions are based on Lonberger's belief that one's philosophy reflects one's perceptions of the reading process, literacy development and how reading would be taught. Participants in Lonberger's study responded to the three research questions twice, once on the first day of university class and again during the last day of class. Lonberger classifies the responses in three bands: (a) bottom-up responses - responses stressing the use of phonics, (b) top-down responses - responses regarding reading as a constructing meaning process and (c) interactive responses, response which valued the importance of both (a) and (b). Participants' responses were then compared to both lesson plans they were asked to plan and implement; and the answers given by the participants before and after the university course were compared. This study reveals significant changes in perception. After these students had finished their university course, perceptions were becoming closer to their pedagogical choices. Lonberger concludes that after participants had been given the opportunity to reflect and practice their beliefs within a positive constructive environment, the majority chose an interactive approach to reading. In short, they were consciously and critically thinking about their beliefs when planning a lesson. This study infers the importance of reflective practice and a metacognitive engagement with the aims and objectives of lessons being taught.

Studies in changes in beliefs and attitudes indicate a need for a democratic decision-making process, based on informed choices involving the

sharing of knowledge and allowing time for modelling, experiential sessions and self- reflection of the new skills and knowledge in order to allow front liners to embrace the changes required. The mere preparation of distributed packs is not effective. These insights are very relevant in helping policymakers create strategies for change, ensuring respect for front liners.

The Maltese Situation

Given that I am trying to make changes in my own community and in order to contextualize the research, I felt it important to look at the Maltese situation in order to make meaning of research findings for the local scenario. This section address early literacy education within early educators' training programmes locally, specifically the preparation for Primary school teachers, Kindergarten Assistants (KGAs) and Learning Support Assistants (LSAs).

In February 28, 2002, the then Minister of Education Dr Louis Galea published a press handout (Galea, 2002) of an address he had delivered at a seminar on literacy. He outlined initiatives following the 1995 report *Tomorrow's schools: Developing effecting learning cultures* (Wain et al., 1995) which concluded that there was a link between low achievement, school failure and literacy and numeracy challenges. Galea reported that by 2002 "complimentary teachers" as support to class teachers were in place up to, instead of only in, Grades 3; the 1991 established SpLD Unit was extensively developed; afterschool programmes and a Grundtvig funded Parental Empowerment for Family Literacy Project had been introduced. He referred to a population of 18-20% literacy difficulties as outlined by a baseline reading assessment performed by Year 2 pupils (Mifsud, et al., 1998; Mifsud, et al., 2000), re-introduced emphasis on bilingualism, and referred to the new 1999 National Minimum Curriculum (NMC) which proposed revised assessment methods to provide schools with "opportunity for effective remedies" to individual students to overcome their linguistic difficulties' (Ministry of Education, 1999). Galea (2002) describes all these initiatives as

> A strategy where literacy policies in the schooling sector are concerned is a coherent and sensible one. We have understood that we must move away from the *ad hoc* piecemeal disjointed policy making of the past and

move towards a service which is based on a clear strategic plan with clear quality indicators. (para. 7)

The crux, however, lies in making polices with informed decisions based on evidence-based knowledge. What that information should be may be the root of most challenges in the early literacy system of education. This speech also seems to be reminiscent of the flowery language used by the DfES (2003) and criticized by Alexander (2004). Galea, as also noted by Alexander with reference to the 2003 UK primary strategies publication, does not refer to the importance of teacher knowledge and techniques, and sees additions to classroom teaching as a solution in the same way as the DfES saw the inclusion of class assistants as a solution to a problem (Alexander, 2004). Bezzina and Portelli (2006) in fact indicate that almost 45% of all Maltese teachers perceive their training for the job as inadequate, whilst a 2002 publication by the present Dean of Education Professor Valerie Sollars on early childhood education curricula policies and practices across Europe does not mention structures of language. Indeed, her report on practices for early childhood education across countries in Europe includes activities in literacy development which only reflect a top-down approach and practices to literacy development.

The Faculty of Education (2004) published a position paper on teacher education in the Maltese newspaper The Sunday Times. This position insists on the importance of knowledge and skills and of appropriate training:

> But one of the first questions that is asked when gauging the health or otherwise of a country's educational system is: 'Are your teachers *trained* to teach?' Experience with a century and a half of educational reforms has taught policy makers world-wide that plans for change will remain just that – *plans* – unless teachers are competent in implementing them... All routes into teaching [should] provide prospective teachers with adequate training in teaching methods, with enough field practice experience and with sufficient time to be socialized into the profession. (p. 1)

In spite of this position paper outlining what should be done, the latest ITT training programme (B.Ed. (Hons) Primary Entry 2010) does not seem to reflect this position, as will be discussed below. Furthermore, no research on the effectiveness of teacher training with regard to early literacy is available locally, except for two papers I was involved in (Falzon et al., 2011; Falzon & Muscat, 2001). I will therefore analyze the present ITT programme, the Initial

Kindergarten Training (IKGT)programme, the new degree in Early Childhood Education by the University of Malta (UoM), as well as training for LSAs. Teacher training is presently organized by the University of Malta, IKGT by the Malta College of Arts Science and Technology (MCAST) and the UoM, whilst training for LSAs is either through a UoM Diploma or through a 20-week course organized by the Directorate for Educational Services (DES).   The present B.Ed. (Hons) primary course is a four-year course with 240 ECTS (European Credit Transfer and Accumulation System) credits. Table 3 below is an overview of the course curriculum plan, whilst Appendix B presents the arrangement detailing study units per curriculum area. The present B.Ed. (Hons) primary course has 208 (86.7%) taught credits and 32 (13.3%) credits allotted to classroom practice (field placements).

Table 3. The B. Ed. (Hons) Primary Curriculum Plan (UoM, 2010)

Description of Work	Yr 1	Yr 2	Yr 3	Yr 4	Total	%age
Primary Studies - Core Content	26	10	20	8	64	26.7
Primary Studies - Core Professional	8	12	10	12	42	17.5
Primary Cycle - Early Childhood Education or Later Primary years	0	8	8	4	20	8.3
Field Placement	8	8	8	8	32	13.3
Dissertation	0	0	0	12	12	5.0
Research Methods	0	4	0	0	4	1.7
General Pedagogy	8	6	0	0	14	5.8
Personal Skills	6	0	0	0	6	2.5
Education Studies	4	8	12	12	36	15.0
Electives - One out of 16 in the fourth year is on literacy	0	2	2	4	8	3.3
Academic Writing and referencing *(requested by the registrar)*	0	2	0	0	2	0.9
Optional Credits	0	0	0	0	0	0.0
TOTALS	60	60	60	60	240	100

Some of the taught modules also include observations as part of the learning and assessment process. Field placement includes observations and four sets of teaching practice sessions (TP).   In their first year, trainee teachers perform "observation assignments" in schools every Wednesday and then have three weeks of TP in the spring, usually around April-May. There are three annual sets of six-week TP sessions. This ITT programme involves exposure to

teaching different subjects in the primary years, such as science, mathematics, geography, history, drama, music, art and physical education. The ITT programme for primary school teachers includes an option for the early and the late primary school years. Teacher trainees who choose the early years have a total of 8.3 ECTS (5%) or 14 ECTS (9.2%), if the only possible elective study unit on literacy is chosen, study units focusing on language and literacy.

Literacy study units in the B.Ed. (Hons) Primary Course

This teacher education programme dedicates 11.67% of its course work to language and literacy through seven 4-ECTS compulsory modules and one 2-ECTS elective study unit (Table 4).

Table 4. Literacy study units in the B.Ed. (Hons) (Primary) course
(Source: Database Faculty of Education University of Malta, 2010)

CODE	Study-unit Title	ECTS	Profile	Year
PRE1114	Teaching English to Young learners	4	Compulsory	Year 1
PRE1115	Maltese teaching for 5-11-year old primary school children	4	Compulsory	Year 1
PRE2611	Fostering language and literacy development	4	Compulsory	Years 2
PRE2710	Children's literature in primary education	4	Compulsory	Years 2
PRE2505	Literacy Difficulties and Young learners	4	Compulsory ECE	Years 2
PRE3109	Once upon a time… how to teach reading and writing genre in the primary years (Maltese)	4	Compulsory	Year 3
PRE3111	Pedagogies and resources in teaching English	4	Compulsory	Year 3
PRE4903	Reading between the lines: unpacking complex concepts in children's literature	2	Elective	Year 2

In the first year students are introduced to Maltese and English teaching. The study unit Teaching English to Young learners introduces students to the socio-linguistic profiles of our pupils and what can impact English as a second language. An analysis of its textbook and reference books indicates that this study unit addresses English as a language and attempts to introduce the literary aspect through story telling. Techniques to Breaking the code to literacy are not part of this study unit. The only other study unit which addresses language in the first year presents very effectively mother language teaching

theories, the Maltese syllabus (Attard, 2002) within the NMC as well as the four basic linguistic abilities, namely listening, speaking, reading and writing, and how to create classroom lessons and activities for these four abilities. This study unit includes two books related to literacy in the early years but does not mention any type of structured instruction to breaking the code to literacy.

In the second year, one study unit - Fostering Language and Literacy Development introduces "major language and literacy theories which help shape policies and practices in early childhood education setting." The course description also states that students will be introduced to skills towards becoming a "competent user of a language" and to practical activities for the classroom. Again, the study unit does not include SMSLI or a set programme of skills. The study unit Literacy Difficulties and Young Learners is delivered by a specialist in Dyslexia who has experience in SMSLI (Dr Christine Firman). During this four ECTS study unit, approaches to teaching reading, from top-down to bottom-up, and including SMSLI, are presented. This study unit seems to be the only module that refers to SMSLI. The course description clearly indicates that Dr Firman is doing her best to include SMSLI, but this study unit is not solely dedicated to this topic and therefore students are only introduced to the concept. The question that the present research question asks: is this enough? Is it placed in the appropriate timing of the course?

The last study unit tackled in the second year presents teacher-trainees to different genres of children's literacy, as also noted in the course title, within the context of a top-down approach to literacy; whilst the study units in the third year focus on language and literacy, assuming accomplished reading skills.

Kindergarten Assistants Training
Locally, until 2002 KGAs were trained by the Education Division through a two-year Kindergarten course. Then MCAST took over in 2003 and two years ago UoM also started an undergraduate degree course in early childhood. Most students who graduate find employment with state, church or independent schools. A select few have opened their own child care centre as a family-run business, and those who are not employed in Kindergarten centres are then employed within other child care centres. The MCAST course follows the

Edexcel Level 3 BTEC Nationals in Children's Care, Learning and Development and, to date, uses the September 2007 revised syllabus (Edexcel, 2007). Students can follow the six-unit national award (360 guided learning hours - GLH), the 12-unit national certificate (720 GLH) or the 18-unit national diploma (1080 GLH). The award does not offer any units in literacy development, whilst in certificate and diploma students may choose out of a possible 30 elective "specialist study units" weighted between 30 to 90 GLH each, out of which three 60 GLH modules are on literacy: (1) Supporting Children's Literacy Skills; (1) Specific Learning Difficulties: Dyslexia and Dyspraxia; and (3) Academic Literacy in the Children's Care, Learning and Development Sector.

The study unit Supporting Children's Literacy Skills acknowledges the importance of literacy skills in young children and the concern that "literacy levels in young people have been identified as being at a lower level than that required by employers and further/higher education institutions" (p. 213). The unit introduces the different theories of how children develop communication skills and children's literacy is addressed as well. An analysis of the specific themes presented indicates a lack of content on knowledge of language structure or on awareness of this need. The module Specific Learning Difficulties: Dyslexia and Dyspraxia does infer that SMSLI are important, but then does not specifically refer to knowledge of language structures:

> *Strategies*: multi-sensory approaches to learning, use of coloured overlays and coloured paper, development of visual memory, use of visual cues and reminders, differentiation and facilitation of achievements, activities to boost self-esteem, approaches to develop organisational skills, use of 'brain gym' to develop concentration and dexterity, supporting fatigue, use of individual education plans and the Code of Practice for Special Educational Needs. (p. 316)

The content picks up on the multisensory aspect of SMSLI but fails to address the structure and linguistic aspects which form the basis of SMSLI. The third elective module, Academic Literacy in the Children's Care, Learning and Development Sector, is a study unit which addresses the use of literacy at the tertiary level and is meant as an enrichment course for participants following the course. Therefore, potentially, graduates with a BTec. Diploma may actually not be exposed to any literacy training, and if they opt to read one of the elective

modules they would have been introduced to the concept of SMSLI only marginally and incompletely.

Two years ago, the Faculty of Education started a five-year part-time 180-ECTS undergraduate degree in Early Childhood: Bachelor of Education (Honours) in Early Childhood Education and Care. There are two cohorts running at the moment (2009-2014; 2010-2015). An analysis of the course content indicates that the course is designed within the parameters of the criticism put forward by the EU and, again, we observe more emphasis on theories, not enough links between theory and practice, and no compulsory content on SMSLI. Modules on early literacy follow the same rationale of content of the B.Ed. (Hons) Primary discussed above. For the first cohort, there was a 2-ECTS elective study unit on SMSLI which I actually asked the course co-ordinator to include (Appendix C). It was included as one of a pool of elective study units and 75% of the first cohort read this course (2010-2011). The curriculum plan of the second cohort does not include any electives, as it was deemed more important to include a compulsory registrar-imposed study unit on academic writing and no other significant changes to the curriculum plan were made.

Following this analysis of the programmes, I decided to regard the two-year KGA courses and the MCAST trained respondents as one group in the questionnaire analysis. At the time of collection of data, the UoM undergraduate degree in early children had just started its first semester.

Training for Learning Support Assistants (LSA)/Class facilitators
In order to be eligible to apply for the post of an LSA, candidates must be **"**qualified in not less than one (1) subject at Advanced Matriculation Level (minimum grade E), or a recognized appropriate comparable qualification, and four (4) passes at Ordinary Level Secondary Education Certificate (SEC) (Grade 1-5), or a recognized appropriate comparable qualification, or higher" (Cini, 2011; The Malta Government Gazette, 2010). Furthermore**,** when rank-ordered, applicants are given "due consideration" for other qualifications such as the Diploma in Facilitating Inclusive Education run by the University of Malta; Certificate in Education for Learning Support Assistants organized by the DES,

or the; MCAST/BTEC National Diploma in Child's Care Learning and Development. The Malta Government Gazette (2010) document further notes that LSAs are required to "follow professional development courses, in-service training programmes and/or an induction course as appropriate to their role and functions, as indicated by the Educational Directorates, College Principal or Head of School" (Article 6.1).

LSAs can be trained by the University of Malta (UoM) or by the Directorate for Educational Services (DES) within the Maltese Ministry of Education, Employment and The Family. The DES periodically runs a ten-week induction certificate of attendance Course which is a pre-requisite to the 20-week Certificate in Education for Learning Support Assistants (The Malta Government Gazette, 2010). Both are part-time courses run after school hours. The DES 20-week part-time course presents the basic philosophical framework of inclusive education as well as practical implements such as MAPS - McGill Action Plan System - (Forest, Pearpoint, Vandercook, & York, 1989) and IEPs - Individual Educational Programmes (Snell & Janney, 2000).

An e-mail correspondence (08/04/2010) between George Borg (Director, Student Service, Student Services Department DES) and Elena Tanti Burlò, Head, Programme for Inclusive Education UoM, indicates that the ten-week 70-teaching-contact-hours Certificate of Attendance Course - Supporting Students with Individual Educational Needs, was divided into seven themes with seven contact hours each, 21 contact hours on development implementation and evaluation of MAPs and IEPs, and a four-week Practice Placement at the school where course participants work. The seven-hour themes are principles of inclusive education; child development; learning processes; working with parents; behaviour management; lesson adaptations and teaching techniques; teamwork with class teacher and professionals. As indicated by the themes, this course is meant to introduce participants to main concepts of general teaching and the classroom environment and, given the parameters of the LSAs, at this point in their training it may be justified that they are not introduced to SMSLI. The 20-week courses expand on these concepts and, again, do not address SMSLI.

The Programme for Inclusive Education within the Department of Psychology at the Faculty of Education, UoM, then runs a 60-ECTS Diploma in Facilitating Inclusive Education which indicates different content. This Diploma is comparable to first year undergraduate coursework. It is also a part-time course and time-wise runs over two years (52 weeks). At the outset, I would like to declare that I am heavily involved in this diploma and so my analysis of the content may inadvertently be biased. Apart from study units focusing on the philosophical and sociological frameworks and ideologies of inclusive education and trans-disciplinary teamwork, diploma students are exposed to theories of learning and human development, diverse learning needs, and implementation of inclusive education from a planning, implementational and evaluative perspective. As also carried out in the DES-run course, students are exposed to IEPs and MAPs.

The diploma course also addresses specific techniques such as task-based learning, behaviour modification strategies, alternative communication, as well as SMSLI in numeracy and literacy: a 21-hour study unit I am responsible for. This by no means prepares students adequately to address SMSLI, as a total of 21 hours, out of which seven are taken up to address numeracy, only introduce the topic. The content, however, is presented linking theory with practice at the outset. Furthermore, students may then choose 28-hour elective study units out of a choice of five (hearing-impaired, visually impaired challenging behaviour, multiple disabilities, physical disabilities and Specific Learning Difficulties- SpLD /Learning Disabilities - LD). Those choosing the SpLD elective - usually around 40% of the cohort - then again address SMSLI. This elective study unit, again in my opinion, is not enough to provide adequate knowledge and skills. On a positive side, as also noted by student feedback, the LSA-trainees are at least becoming aware that such techniques exist and are mentioning them in discussions with other colleagues. However, it is only an introduction and one must be careful of over-confidence, particularly given that diploma graduates would, on the one hand not have enough expertise and knowledge-base but, on the other hand, given the analysis of local course content, may possibly be more aware of SMSLI than teachers. This may lead to a "know-it-all" attitude in the classroom, which is certainly not a collaborative or learning scenario.

This analysis of training in Malta reflects literature on teacher training. As is happening in other English-speaking countries, local training programmes do not give enough - or any - input on SMSLI.

Taking the Bull by the Horns

The literature review is a research process in itself. This experience reminds me of "saturation" in grounded theory. Strauss and Corbin (1998) argue that in grounded theory, when it becomes "counter-productive" to continue collecting and analyzing data, when "the new" being discovered does not add to the overall model, theory or framework, such that more data may then generate the problem of developing a conclusion, then one may conclude to have collected excess and possibly unnecessary data.   In my endeavour to find contrary arguments to my hypotheses with regard to lack of exposure to SMSLI in teacher training, and to generate critique and discussion, I did not manage to find a lot of divergence in research findings pertaining to the topic of the research.

Looking back at this chapter critically, the material presented may be perceived to have quite a positivistic view in relation to the research question, and may be construed as biased and rather descriptive. However, research studies which indicate negative effects such as slower reading improvement, waste of time for highfliers, or negative impact on teachers and children, could not be found. This led to a decision to take a different construct in the literature review. Instead of critiquing what I could not find evidence for, I opted to discuss research results to hopefully convince policy makers, government officials, teacher educators and early literacy educators to appreciate and address this "missing link" in early literacy education and in teacher education programmes, in CPDs and in classroom practices (Moats, 1995).

The quality of teachers has a stronger impact on the learning of pupils than the quality of the curriculum, the school or the role of parents (Hattie, 2003; Barber & Mourshed, 2007). Furthermore, the earlier the code to literacy is broken the greater is the chance for successful learning and a better quality of

life (Stanovich, 2000). This justifies the attention that needs to be given to policies with respect to teacher quality, appropriate teaching techniques and the right content to ensure that learners are not short-changed. A ripple effect is to also ensure that ITT trainers are conversant with this area of study, as the limited research available indicates otherwise (Binks, 2008).

In this literature review I have tried to examine teacher education programmes with reference to early literacy preparation and teachers' beliefs in their knowledge of SMSLI. Research findings indicate that teacher education programmes do not prepare teachers adequately with regard to skills and teaching techniques and to links between theory and practice both on a general level and in particular with regard to SMSLI. There is also concern at EU and UNESCO levels. Their reports indicate dissatisfaction with the way teachers are being prepared, and they critique the failure to link theory with practice successfully in respect of teacher trainees. Research findings overwhelmingly indicate that teachers are generally not equipped to address SMSLI, in spite of a whole body of literature indicating these techniques as the best way to break the code to literacy in young learners (Moats, 2009).

The Lacuna of SMSLI exposure usually leads to teachers falling back on techniques they experienced as a child and, unless they are presented with new teaching techniques in a respectful, collaborative, cumulative and supportive manner, they will not readily and convincingly start implementing new unfamiliar techniques and need at least three years to get accustomed to new techniques. , The critique is not only that there is a lot of theory in ITT programmes. It is also observed that early educators are, in general, not aware of these techniques. This leads me to the raison d'être of the research question: *Do they know that they don't know?*, and to the epistemological journey of my endeavour to try and understand the needs of my local community in as objective and detached manner as possible.

The science and art of teaching should be carefully reflected upon. As already noted, there are several studies which attest to the concept that teachers are not appropriately trained to meet the demands of early literacy teaching; this is emphasised in English, Australian and American studies.

Teaching literacy is more than just being aware of teaching strategies, awareness of best practices, positive and effective classroom management, child psychology, and instructional material. Teachers need to understand reading theories, know the structure of the language, and be able to interweave knowledge with strategies, classroom management and instructional material. On top of this, teachers must also ensure that inclusive strategies are in place at all times and that individual needs are determined and addressed. They must also be able to address challenges and problems on the spot (Young, Grant, Montbriand & Therriault, 2001). As the Ofsted (1996) report notes:

> [Schools] must above all else focus on the quality of teaching reading in the classroom. The teachers must be crystal clear as to what their pupils need to know, understand and be able to do to become confident and proficient readers. (p. 7)

CHAPTER 4

My Epistemological Journey

in search of the truth –

a chimera?

There is a social responsibility in research that transcends the academic discipline of a profession to which the researcher belongs. The ultimate moral justification for research is that it makes a contribution to the greater public good, by easing suffering or promoting truth (McLeod, 2003; p.175).

Mouly (1978) argues that experience, reasoning, reflection and research are necessary to understand one's environment. McLeod (1999) explains that good research is achieved by using personal and cultural sources, rather than following laid down procedures, whilst Denzin and Lincoln (2005) define research as an activity that "locates the observer in the world" (p. 3) and allows for practices that "make the world visible" (p. 3) thereby transforming our experiences. They explain that "this means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meaning people bring to them" (p. 3). Although Denzin and Lincoln are specifically referring to qualitative research, this concept can also be extended to different research methodologies. In fact, Matthews and Ross (2010) define research as a way of addressing and answering queries in trying to comprehend our environment. The Vygosktian socio-historical theory proposes that we acquire personal knowledge through social experiences, where understandings between people become understandings within people (Vygotsky, 1978). Likewise, in research, what is happening in the environment is meant to be understood and analysed by researchers.

In this chapter I intend to explore what I am trying to understand in my environment, why I was motivated to focus on the research question, and why I decided to use a mixed-method approach to try and explore the research question. The philosophy and rationale for the choice of methodology and research tools, and the values and ethical issues that guided my choices will be addressed. At the outset, I would also like to reflect on the concept of possible bias in the interpretation of my results and the awareness that "finding the truth" - or rather the perceived truth - is highly contestable. Guba and Lincoln (2005) argue that objectivity is a dream that is extremely unlikely to come true: "a chimera: a mythological creature that never existed, save in the imagination of those who believe that knowing can be separated from the knower" (p. 208). As a knower, I can never totally separate what I know from my personality, my opinions, my agenda, my experiences, my perceptions, my dreams, my biases and my limitations. I have been embedded in the phenomenon I am herein studying for over 20 years, and therefore I am aware of the richness and challenges this experience brings about.

Sayer (2000) refers to the concept of "naïve objectivity" in the sense that this may only be a chimera. This has been my beacon throughout the research. In an attempt to overcome possible limitations brought about by my profile of experiences and beliefs, I have used Sayer's concept to conclude a need for a mixed methodology approach both from an intra- and an inter-perspective to best address the research question. From an intrapersonal perspective, being a knower in this area of research both as an academic lecturer on SMSLI and as a practitioner in Specific Learning Disabilities (SpLD), may bring about insights and biases: concept dependencies on "social phenomena, such as actions, texts and institutions" (Sayer, 2000, p. 6), where "the most obvious candidates for intrinsically meaningful social phenomena, are the ideas, beliefs, concepts, and knowledge held by people in society" (p. 30). My theoretical paradigm with regard to the effectiveness of SMSLI, my values with regard to inclusion and quality of life, and my concern for the lack of knowledge I encounter when I visit schools, may affect the way I collect and interpret the findings and may lead me to over-interpret. I have tried to self-monitor and reflect on my role as a "knower" and "expert" in this field in order to interpret as objectively and as faithfully as possible, keeping in mind the ethical considerations towards "truth" and the objective of my research to hopefully give recommendations for learners and teachers. From an interpersonal perceptive, the choice of a mixed-method approach results from local biases towards qualitative findings and a yearning for my research results to be accepted by Maltese policy makers, politicians and professionals.

Philosophical Background

Root (1993) supports Weber's early 20th century concept that in research values cannot be eliminated. What scientists and social scientists choose to investigate is influenced by the very values they want to advance. This concept has never been disputed and continues to be considered relevant (e.g. Clifford, 2005). My value system (Chapter 1) reflects my political alignment towards values of inclusion, empowerment and quality of life. Others who may value streaming, for example, may query if this position may bias against excellence and may query if SMSLI gives more attention to students with learning challenges as opposed to gifted students as these may not need structured

strategies to learn how to read. My political alignment in a context of equity is evidence-based on literature and research findings (e.g. Moats, 1999) and my own previous research (e.g. Falzon & Muscat, 2001). These reveal that such techniques in no way disrespect or "holds back" any child. With regard to the research in question, my set political alignment may be a strength rather than a bias if I choose to always strive to analyse from the outside and try to be my own devil's advocate when interpreting research findings.

The concept of truly including everyone in the classroom needs to be viewed as a value within political, cultural, educational and emotional paradigms. Inclusive education has been on the manifesto of all our local political parties for a number of years, but how this is understood and implemented is a different issue.   Malta is a nation of paradoxical experiences: we live on a small island yet our houses are larger than most European homes; we are considered a catholic and kind nation yet do not easily accept people from different nationalities and creeds; we have been independent for over 45 years, yet at times still think with the mentality of a colony; we have had inclusive education for over 18 years, yet still have a selective system which streams children from the age of ten, whether officially or unofficially. The changes we need to make are as much structural and practical, as philosophical, affective and individual. We need to address the values, attitudes, pragmatics and approaches which prevent children from being part of the learning process at the level of policy and politics and within classroom practices. We need to ensure that early educators truly understand that, at times, giving a lesson does not mean that it has been delivered successfully, and that they need to reflect on the effectiveness of their practices and teaching techniques (Turnbull et al., 2010).

The purpose behind this research is to try and understand whether early educators are aware of SMSLI. The social model of disability, trans-disciplinary teamwork and UDL have affected the way we look at education and what methodologies we use in teaching, particularly in the local context. Historically, the social model approach has been of great benefit to the local context (Tanti Burlò, 2010) and is in fact still embraced by our National Commission Persons with Disability which also influenced the local Equal Opportunities (Persons with Disability) Act (2000).

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With regard to the specific area of research in question - namely SMSLI in early literacy teaching - these three paradigms are of paramount importance: SMSLI breaks barriers to teaching literacy and addresses individual needs. However, given that we are talking about programmes, one needs to ensure that all children, with their unique profile of abilities and challenges, are also taken into account, which is why I refer to the UDL paradigm where children's individuality is put to the fore from the design to the evaluation stage of the learning process. Given that I am combining this social model of disability with Transdisciplinary Teamwork and UDL (Moore, 2007; Rose & Meyer, 2002, Turnbull et al., 2010) as philosophies underpinning my research questions, I feel that I am also addressing and embracing Finkelstein's (2001) concern and belief that:

> Our society is built on a competitive market foundation and it is this social system that disables us. From this point of view disabled people are forced to live in a social prison. While no one can object to campaigning for 'rights' so that the prison in which we live is made more humane, it is only a political buffoon who believes that exploring prisoner experiences can lead to emancipation! Nothing less than dismantling the prison and replacing it with a non-competitive form of society can break down the doors which bar our emancipation (p. 4). For me *repossessing* the social model of disability means searching for openings in the structures of society where we might effectively contribute with others in the restructuring of society so that it is neither competitive nor disabling for all people… While disability organisations can be viewed as the *vehicles* for change, I see the creation of our own community-based profession (a profession allied to the community) as the *engine* for change. (p. 5)

In the context of the research questions of this study, "dismantling the prison" echoes the liberating knowledge all children, and particularly children with reading difficulties, experience when they are taught the linguistic mechanics of reading through SMSLI (e.g. Moats 1999), whilst the "non-competitive form of society" which will allow for the "break-down [of] the doors", represents the inclusive methodological strategies embraced by UDL (e.g. Moore, 2007) and manifested in the principles of SMSLI (e.g. Hall & Moats, 1999).

Standpoint Theory (ST) and the Insider Researcher

The term `insider research' is used to describe projects where researchers have a direct involvement or connection with research settings, as is my context in this study (Northumbria University, 2011; Appendix D). Such research contrasts with traditional notions in which researchers are `objective outsiders' studying subjects external to themsleves (Denzin & Lincoln, 2000).

Within the context that truth is but a chimera (Guba & Lincoln, 2005) and with the arguments I have already put forward above on naïve objectivity (Sayer, 2000), I now need to address insider research. Validity in insider research is challenged due to the researchers' involvement with the subject of study. However the disadvantages claimed of insider reseach can also be claimed for all research as (a) one can never guarantee total objectivity, total honesty and openness from participants and (b) all research is ultimately coloured by subjectivity, which subjectivity must always be help in check in a context where researchers must remain ethical towards the objective of all research - the greater public good (McLeod, 2003).

Many advantages of insider research are documented in the literature. For example, insiders have a wealth of knowledge and participants may feel more comfortable and freer to talk openly due to familiarity with researchers (Denzin & Lincoln, 2000). In as much as this may be criticized for lack of objectivity,   insider research also has the potential to increase validity due to the added richness, honesty, fidelity and authenticity of the information acquired. However, insider researchers must be aware of and minimise biases throughout on the research process and making their insider position transparent (Hammersley 2000; Northumbria University, 2011). Cohen, Manion and Morrison (2000) argue that making the research process transparent and honest, and declaring an insider research status enables readers to construct their own opinions and perspectives which "are equally as valid as our own" (p.106).

As an insider researcher, I was very concerned about being truthful and about expressing unbiased interpretation of the data from a standpoint approach

and presenting data using the participants' contexts. I considered it important to reflect and to analyse myself as an insider researcher within the paradigm of Standpoint Theory (ST) and the requirements of Northumbria university, as documented by the School of Health, Community and Education Studies' Research Ethics sub-Committee (Appendix D). This document presents a number of ethical considerations for insider research. These include potential for coercion of participants, boundaries of confidentiality; clarification of sources, methods of collection of data and dissemination of findings. As discussed in this chapter, particularly in the section on ethical considerations, these issues were all seriously taken into consideration and diligently followed as instructed in this document, within the context of Standpoint Theory (ST).

ST analyzes discourse developed and used mainly by social scientists, sociologists, political theorists and feministic research. In its narrow sense it tries to develop a feminist epistemology and was used by feminist theorists such as Dorothy Smith, Nancy Hartsock, Sandra Harding and Patricia Hill Collins. In its political sense, it assumes: (1) mutual concern and trust before and after the research process; (2) total commitment to understanding how data are produced and sustained; (3) that all forms of social identification are temporary non-fixed categories; (4) researchers as part of the participants' project and not the other way around, (5) using research as a basis for experiences one is part of, where the focus is to legitimize existence and history of involvement, not personal attributes (Olesen, 2005). Swigonski (1994) notes that a basic principle of ST is that any one phenomenon or event has several "standpoints" - points of view - attached to it. He explains that when taking a ST approach, understanding comes from concrete experience tied to an objective or to the situation from which people are viewing, perceiving and interpreting their worlds. Stone and Priestly (1996) refer to the use of the social model of disablement as an epistemological basis where one must "surrender" claims of objectivity and be committed to "struggles for self-emancipation". In ST, the importance of practical benefits and the evolution of control and empowerment over research production to ensure full accountability to participants are paramount, as is the importance and value of giving voice to the personal, whilst endeavouring to glean political commonality of experiences in response to the changing needs of communities.

ST as a research method of analysis is mainly sociological and political in nature. A standpoint perspective involves how human beings perceive and understand the world; how people adopt a particular standpoint view; how humans socially construct the world; and how humans perceive their social group membership affecting their own standpoints. Furthermore, differences and inequalities among social groups create differences in standpoints which, by definition, are all partial and value-influenced (Hartsock, 1983; McGlish & Bacon, 2003; Swigonski, 1994). ST also proposes the concept of strong objectivity (Harding, 2004). In other words, the perspectives of individuals - in Harding's interpretation "marginalized" individuals - can help create objective accounts of the real. This paradigm helps provide readers with a framework, allowing for evaluation of knowledge gained from a particular study within the context of the many points of view affected. It further places importance on the voices of "marginalized groups" whose messages can be communicated by listening to their voices. This will allow policy makers and professionals to understand these messages and to make informed decisions and implement changes based on information including all stakeholders within the construct of "Concept-dependence" (Sayer, 2000).

Walmsley (2004) stresses the importance of being inclusive where research participants, in her case participants with learning difficulties, are active participants. She derives this concept from the social model theory where subjects are active not passive and where research cannot be value-free but is either under the control of participants, valued as co-researchers, or presented in their interests, putting the researchers' skills at the disposal of the participants. Research relies on intellectual skills, and therefore non-disabled researchers have an "enduring role", where working together is a central component. As one participant in a study carried out by Nagar (2002) notes:

> When feminist scholars from Western countries come here to do their research, they often try hard to do everything in our local language and idiom. But why is it that when they return to their institution, they frequently write in ways that are totally inaccessible and irrelevant to us? ... the question of access is not just about writing in English. It is about how one chooses to frame things how one tells a story … you tell my story in a way that makes no sense at the conceptual level to me or to my community, so why should we care what you have to say about my life?

(Group discussion with three feminist scholar-activists, Pune, India, 2000; Nagar, 2002)

Fine (1992) seriously cautions researchers who propose the inclusion of giving a voice that they must present their own voice in the participants' own contexts and positions. She insists that researchers should "articulate how, how not, and within what limits voices are framed and used" (p. 217). These concepts have guided my research questions, the choice of research design, my reflection on the choice of methodology and how I chose and actually analysed the data. Furthermore, given my experiences, perceptions and bias, I needed to always ensure that I am truly presenting and interpreting the research results as truthfully and as accurately as possible. Keeping in mind the participants' and my position as a "knower" immersed in this field, I opted for a mixed-method approach. The quantitative research tool - the questionnaire - allowed me to access the early-educators' population. The use of Focus Groups (FGs) then allowed me to give "marginalized" participants a voice (Harding, 2004). In the context of my research, the "marginalized" community refers to professionals who have been exposed to SMSLI. Their profile, given that I hypothesized a minority, would have been lost in the data representing the population of the whole country, and I therefore chose to give them a voice through the use of FGs, placing their own concerns alongside the statistical data in order to ensure that I was aware of "within what limits voices are framed and used" (Fine, 1992, p. 142). I wanted to ensure that I gave a voice to the participants and respondents; that I was faithful to presenting their voices, that I remained as unbiased and de-contextualized from my experiences as possible. Qualitative research involves interpretation. The authenticity of participants' responses remains extremely important to me. I therefore felt it important to reflect and analyse myself as insider researcher within the paradigm of Standpoint Theory, within my ethical responsibility as a researcher:

> There is a social responsibility in research that transcends the academic discipline of a profession to which the researcher belongs. The ultimate moral justification for research is that it makes a contribution to the greater public good, by easing suffering or promoting truth (McLeod, 2003; p.175).

Mixed-Method Methodology

There is consensus amongst researchers that every research method has its advantages and disadvantages (Bogdan & Biklen, 2003). The issue of a "best method" is obsolete and choice of methodology should depend on the aims of the study, specific research questions, dissemination and the audience. For the research data to address my hypothesis and my aim to convince policy makers, it was, in my opinion, neither sufficient to conduct the study with a small number of participants, nor to just use statistical data. I wanted to both respect and address those still sceptical of qualitative research and, on the other hand, present the voices of professionals familiar with SMSLI. It was therefore more appropriate to employ a research methodology that included both quantitative and qualitative design in order to test my hypothesis and to address my research question.

Pintrich and Schunk (2002) are sceptical about qualitative research and note that, whereas they see the value of qualitative research due to intensive analysis and description of "meanings", and whereas qualitative research addresses links which may not be possible to address in quantitative research, they still refer to quantitative research as more reliable, intensive and thorough due to number of participants involved. They are concerned that since qualitative data use a small number of people - in my case 29 professionals - this "raises the issue of whether findings are reliable and representative of the population being studied" (p. 11). More recent publications seem to favour the view that qualitative research generates hypotheses, creates questions and probes, while quantitative research is used to generalize from hypotheses (Bergman, 2008).

Bergman (2008) argues that although mixed-method approaches may lead to more marketable research results and a "perception" of more "validity", one must be careful not to gloat over the use of a mixed-method approach research, interpreting this as superior research to mono-method research studies, or as allowing one to reach the "absolute truth". Denzin and Lincoln (2005) are very critical of mixed-method design, and caution that this may exclude stakeholders. They are concerned that this choice has been taken on

board as if it were a compromise and caution against possible "ominous development" (Howe, 2004).

My choice of mixed-method is by no means a reflection of the Scientifically Based Research movement (SBR). Howe (2004) explains that the SBR movement only accepts qualitative research within a mixed-method approach, where qualitative methods are seen as an option, less credible than quantitative methods, and an "auxiliary role". Denzin and Lincoln (2005) argue that SBR views qualitative methodology as the exploration part and the quantitative as the confirmation part. They caution that the mixed-method approach "excludes stakeholders from dialogue and active participation in the research process, weakens its democratic and dialogical dimensions and decreases the likelihood that the previously silenced will be heard" (p. 9). This led me to reflect a lot since I wanted to ensure that silenced voices would be heard (qualitative) and be able to convince (quantitative).

The concept of using a quantitative method as a "confirmation" was a political and not an academic or philosophical decision. I felt that I needed to speak the language of the people I wanted to convince to take action. Ultimately, the question that begs to be answered refers to the fundamental politics of research: what power do research results have to solve social problems (Denzin & Lincoln, 2005)? Clough and Nutbrown (2002) declare that all social research sets out with specific purposes from a particular position, and aims to persuade readers of the significance of its claims, that are usually political in nature. In the context of my research, this represents the importance of using statistical data. I would not like this work to be shelved as a research thesis, but hope to bring about changes for the benefit of future generations.

Using Statistics.
In June 2010, the UN General Assembly approved a resolution calling on all Nations to celebrate the 20 October 2010 as World Statistics Day. The Maltese NSO chairman, in his opening address during a national seminar to celebrate this day, notes that the UN's intention of establishing World Statistics Day was to:

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recognize the long history of official statistics in promoting economic and social development; the efforts of countries to produce timely and reliable statistics that are comparable and independently produced in a professional way; … During the past two decades cooperation and relationship with Eurostat, the EU Statistical Office became progressively the order of the day. (Camilleri, 2010, para. 1)

Camilleri (2010) further quotes the new *European Statistical Code of Practice:*

Official statistics exist in order to provide an indispensable element in the information system of a democratic society... As has been said in classical times 'statistics are the foundation of the state'... They should, therefore, meet the test of practical utility and are to be compiled and disseminated on an impartial basis to satisfy the citizens' entitlement to public information. (para. 4)

Camilleri (2010) concludes by emphasizing the severe challenges to the NSO due to Malta's membership of the EU and to the fact that "importance of statistics in the political decision-making process in order to conform to common requirements of the EU is growing every day" (para. 14). This needs to be done in a context of ethics, truthfulness and accuracy. One is here reminded of Greece's "unreliable" economic figures - a "lack of quality of the Greek fiscal statistics" and "failures of the relevant Greek institutions in a broad sense" (EU Business News, 2010, para. 3).

Qualitative inquiry.
Apart from the need to give a voice to participants who may have been lost in the maze of statistics, another reason for seeing the inclusion of qualitative methodology as vital to my research question comes from the literature on emancipatory disability and feminist standpoint research theories, even though this study does not utilize emancipatory research and is more traditional. Oliver (1992) explains that trust, respect, participation and reciprocity should underpin emancipatory disability research. This, I felt, would be more conducive if qualitative research methods were used. Qualitative research is open-ended, inductive, and facilitates new insights. It focuses on understanding the meaning of individuals' experiences and emphasises that data's meaning is not imposed upon by pre-set deductive hypotheses as is carried out in quantitative methods (Langdridge, 2004).

Qualitative research allows researchers to research in-depth and in as

natural an environment as possible (Denzin & Lincoln, 2000). It also allows for exploration of a detailed phenomenon using voiced participants' personal experiences, whilst allowing for reflection by and reflexivity in researchers. Mason (1996) promotes a dynamic process of identifying, proposing, solving and probing questions through reflexivity and action, where researchers are part and parcel of the data collection process through their interaction with participants/co-researchers, allowing for strategic and contextual decision-taking. Ultimately, the processes of qualitative research also lead to professional and personal growth (Ely, Anzul, Friedman, Garner & McCormack Steinmetz, 1991).

Exposing the truth? - Quantitative or Qualitative?

Given that I have been working and living in this small island community for around 24 years, I was able to choose my methodology and research questions not only with an understanding of the pros and cons of choice of methodology and with the underlying concept that there is no absolute truth, but also with a baggage of personal, professional, academic and cultural experience. I did not conceive the research question and the research tools in a vacuum; nor was it only a result of literature review. The choice of topic is the result of my professional, lived, experience. The choice of a mixed-method approach is the fruit of my experience with government officials and politicians who have always wanted "evidenced-based" - numbers and statistics - input.

In the early 1990s I was watching a panel discussion on the BBC about why the actual election results went against the polls that had been carried out before the election - polls hailed as a reliable tool for forecasting the election results. A member of the panel had queried: "But why was it not a good predictor?" "Simple," said another participant, quite tongue in cheek, "The British people lie!" This incident always comes to my mind every time I embark on a piece of research, and is always my concern throughout my research work: Will the research tools I am using help me arrive at the truth of the matter? Will I ever get to see the whole picture? Is the truth I perceive the real truth? Is there actually ever a truth? What guarantee is there that a mixed-method approach may project a truer version?

A positivistic approach to research suggests causality, where events occurring together in space and time are replicable. It emphasises that researchers are totally independent on what is being observed and addressed; proposes value-, culture- and context-free knowledge, and tends to promote the concept that all scientific research should be conducted in the same manner (Hayes, 2000; Langdridge, 2004). This paradigm may be difficult to implement when research in human behaviour and perception is involved. Within this context, and given the research question, it was more a situation where I wanted to add voice, power and recognition to my FG participants by including statistical data, given the profile of my audience and my objective for change. As Hayes (2000) notes:

> These two approaches to science are both reflected in modern psychological research. There are psychologists who stick rigidly to one side or other of the debate; but psychology is a pretty pragmatic discipline, and most psychologists are eclectic – that is, they use a mixture of approaches depending on what seems to be most suitable. (p. 8)

Statistical data enables me to understand the meaning, value and importance early educators gave to their experience and to substantiate this experience empirically (Fouché & Delport, 2002). Quantitative methods also allow me to step back from my immersed experience in the topic. I opted for questionnaires to address a whole island community population and Focus Groups (FGs), and interviews to triangulate. Hackley (1998) refers to presentations of social life through the use of language and discourse; whilst Jankowski, Clark and Ivey (2000) argue that the stance of "not knowing" allows researchers to move away from a hierarchical construct for a paradigm where researchers and participants are on an equal footing, allowing for a "freeing experience" (p. 241) for both researchers and participants.

The privilege of designing research tools after living the theme of the research in my community for over 20 years may give me, on the one hand, an advantage over being an outsider, and, on the other hand, a disadvantage of being biased, overconfident in results expectations, and being too positivistic. In such a context the use of data triangulation using a mixed-method approach becomes more relevant.

Data Triangulation

In social science, triangulation refers to the mixing of data or methods (Thomson, 2011; Yin, 2009). In this study, the triangulation refers to the use of quan-qual research methods - data triangulation (Olsen, 2004). Yin (2009) notes that, in data triangulation, the use of "multiple sources of evidence" allows for "converging lines of inquiry" leading to findings and conclusions that are "likely to be more convincing and accurate if [they are] based on several different sources of information, following a corroboratory mode" (p. 115). Yin claims that this type of triangulation allows for better construct validity since the same phenomenon is being addressed through multiple measures. In this context, one may even consider this research as a "case-study" of a small island community, using Thomson's (2011) definition of Case Studies:

> Analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. The case that is the *subject* of the inquiry will be an instance of a class of phenomena that provides an analytical frame - an *object* - within which the study is conducted and which the case illuminates and explicates. (p. 512)

- a case study attempting to analyse Maltese educators' knowledge and awareness of SMSLI. In this context, Yin's (2009) argument gains more weight. At the stage when I was deliberating on the best methodology to address the research question, I felt, and still believe, that this use of triangulation helped me get a clearer picture of the situation. Langdridge (2004) notes that "possibility of triangulation where multiple perspectives [are used,] enables us to truly understand the phenomena in question… By taking different perspectives and using different methods we get the possibility of greater understanding of the topic" (p. 256). Denzin (1989), like Yin (2009), also refers to this as data triangulation.

Social Constructionism agrees that objective reality can "never be captured" (Denzin & Lincoln, 2000, p. 5). Flick (2000) argues that triangulation should not be regarded as a research tool or as a strategy for validation, but as an "alternative" to validation in order to understand better the phenomenon being queried, adding richness and depth to the research (Denzin, 1989; Denzin & Lincoln, 2005). As such, this combination of research methods will

hopefully be perceived as adding rigour, validation, depth and breadth to the investigation and the research question by the local policy makers. In particular, I am trying to triangulate by attempting to make sense of the statistical data from the questionnaires and the analysis of the FGs in order to try to glean and "tease out the many layers of meaning" (Langdridge, 2004, p. 316) that either the questionnaires or the FGs on their own might miss.

In my research, I am trying to construct a belief related to teacher training and early literacy. This belief is shaped by my experiences, and by social forces that I have observed as a professional in the field and in my personal life (McLeod, 1999). This places me in the Social Constructionism Paradigm. A major focus of Social Constructionism is to discover ways in which people and groups of peoples participate in the creation of their perceived social reality and experience. This philosophy involves looking at the ways social phenomena are created, organised, institutionalised and traditionalised by human communities. Socially constructed reality is an ongoing dynamic process where reality is reproduced by participants, based on their interpretation, their knowledge, their culture and their experiences. Researchers are actually challenging themselves to take the position of not being sure or actually not knowing, in order to try to find ways to become more knowledgeable of the theme (Gergen, 1999). The perceived objective reality is constructed by personal and social interactions of each individual, where people are interacting, aware that their perceptions are related and intertwined, and therefore common knowledge is re-experienced and reinforced (Schwandt, 2000).

Given this whole context, I prefer to look at myself as a bricoleur (Denzin & Lincoln, 2000) attempting to produce a bricolage, a "pieced-together, close knit set of practices that produce solutions to a problem in a concrete situation" (p. 3), whilst also trying to understand the phenomenon in the context of my local culture. I am also aware that this research is an interactive process shaped and influenced by my history and background. I understand that my research will yield scientific data which can be powerful and act as agents for change in my country, but I also understand that this research is not value-free. The collage I am creating, hopefully in the interest of my country, is affected by my history, which, together with the results of my triangulated research tools, will help me

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create new images, understandings and interpretations of the phenomenon under study. I will be trying to connect parts to a whole in an attempt to glean meaningful relationships.

The Research Tools

The research tools employed are questionnaires and FGs. The decision to use these research tools was based on philosophical, professional, emotional and political issues as explained above and presented in Figure 1 and Table 5.

Figure 1. Theoretical construct of the research design
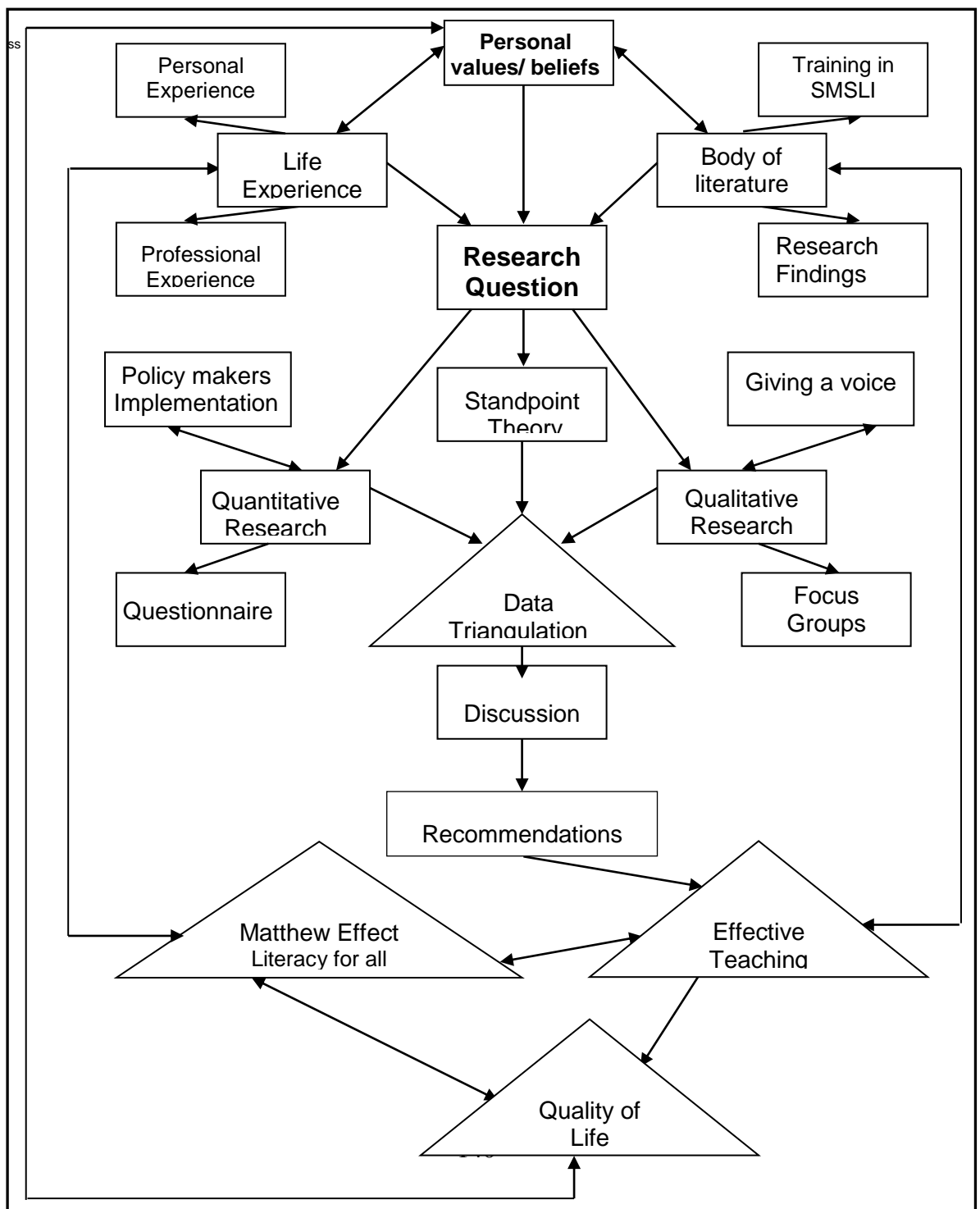
Table 5. APA ethical principles and code of conduct of psychologists

<u>Principle 1</u>: Beneficence and Non-malfeasance - The design and implementation of the research tools and in the specific aims listed in the participants' information sheets embraced these issues. I was very cautious and self-reflected to remain always respectful to professionals and in no way feel or express condescendence. To address this further, Section 3 of the questionnaire (Appendix E) was referred to as "teachers' input for suggestions for further training" as opposed to the "linguistic knowledge" section. Furthermore, the pilot study feedback was taken into account (Appendices F and G): detailed infomraton sheets and consent forms were provided (Appendices H, I, J and K.)
<u>Principle 2</u>: Fidelity and Responsibility - My fidelity and responsibility is towards children and guided by my values and beliefs. I tried to translate this conviction in my behaviour during data collection and analysis process. I personally distributed and collected questionnaires. Some schools preferred sending questionnaires to my office by hand or by post. I took particular care of interpersonal relationships, trust and confidentiality. For example, as noted in this chapter, some participants felt uncomfortable filling in the consent form, and I did not insist. Others even asked if they could be given courses in this area as such knowledge had never been covered in their training; I noted that this would be taken into consideration. Of the 701 questionnaire collected, only one teacher commented in writing that she felt 'insulted' by being asked such questions. Fidelity and responsibility also extended to inputting and interpretation of data. Data were, in fact, double-checked after being inputted/transcribed and FG transcripts were processed twice two months apart, as well as seen by colleague Dr Charmaine Agius Ferrante, to address reliability and validity of coding. The findings chapter and the transcripts were also viewed by the participants.
<u>Principle 3</u>: Integrity - Integrity refers to honesty, truthfulness or accuracy of one's actions, as discussed above. I ensured that I had the appropriate documentation when I introduced myself via e-mail and when I was on school premises. Furthermore, during the distribution of the questionnaires I was very respectful of the participants and of the management teams' wishes. For example, one Head of School decided not to give the questionnaires to the Kindergarten Assistants as, according to her: "these are not able to answer such a questionnaire". I replied that this was her school and I was grateful that she had accepted to distribute the questionnaire to her staff, even though in principle I did not agree with her.
<u>Principle 4</u>: Justice The content of my questionnaire, my research aims, and the values guiding my research process. Reflect my interest: that every child is given opportunities to learn how to read in pleasurable, respectful and effective way.
<u>Principle 5</u>: Respect for Rights and Dignity. Mechanics and practicalities of confidentiality as outlined in my Ethics Forms of the Universities of Northumbria and Malta were rigorously followed. The detailed information and consent forms (Appendices I, J and K) explained rights in detail. Participants were not forced to hand in their consent forms. In spite of my concern of lack of SMSLI knowledge and training of the participants, I still hold that their intentions are positive and it was an honour that they allowed me to peep into their professional world.

The theoretical construct of my research design is affected by my values, my philosophy of life, the body of literatureand reseach findings, my local context, my professional and personal experiences and the very aims and planned dissemination of the research. With regard to procedure of choice of research design, I felt that I always had to be faithful to the three main theoretical perspectives underpinning my research and also reflecting my value system and my dream for inclusion and literacy for all. This also had to be reflected in the choice content and language of the research tools. For example, I was careful how to phrase the questionnaire questions in order to ensure that I was reflecting the needs of all children; in the third section of the questionnaire I picked on examples of knowledge on early literacy which young learners are usually ready to address and learn; and during focus groups I was always careful to refer to all young learners.

The quantitative research tool.

Langdridge (2004) perceives questionnaires as an inexpensive and an effective way to gather data in a standardized manner from large samples of respondents over a limited period of time, and convenient to gather background information. He notes that it is possible to use questionnaires to analyse particular behaviours and discover opinions, beliefs or attitudes of many people at once. Furthermore, the use of close-ended questions offers reliable data easy to analyse and also helps ensure responses to relevant issues. Frankfort-Nachmias and Nachmias (1992) argue that questionnaires must translate the research objectives into specific questions which provide data for hypothesis testing, must include questions concerned with facts, opinions, attitudes, respondents' motivations and their level of familiarity with a particular subject, theme or area, and must be motivating to respondents in their presentation. Due to lack of direct human contact, one needs to be aware that there is a high possibility for misinterpretation of questions by respondents. Respondents may answer superficially or leave parts out. Respondents may read too quickly, leading to misunderstandings and misinterpretations of texts, particularly if questionnaires are too long and time-consuming to complete. Furthermore, discomfort due to content may lead to non-response or lack of accurate/truthful responses.

Russell and Roberts (2001) argue that putting together a good questionnaire is quite an intricate exercise, as abstract concepts need to be transformed into easy factual questions that also make for easy reading. They further refer to the concept that the perfect questionnaire is probably impossible to design, and this needs to be regarded as a limitation whenever one is using questionnaires. For this study, the use of questionnaires across the total population was considered valuable and useful for gathering factual data on the local situation. The use of questionnaires also enabled me to access and address a whole small-island population (Langdridge, 2004).

Designing the questionnaires.

Cohen, Minion and Morrison (2000) explain that the first step to creating a questionnaire is to clarify the main purpose and then "translate[d] [it] into a specific, concrete aim or set of aims" (p. 263). The second step requires researchers to identify and itemize subsidiary topics, and the last step includes the formulation of specific information requirements which are related to the issues mentioned in the second step. The questionnaire as a research tool was designed to discover training, practices, awareness and knowledge of SMSLI. In designing the questionnaire, apart from reflecting on the content, I further reflected on four other considerations to try and ensure a high rate of response: length, structure, language and feedback. Langdridge (2004) eloquently cautions that: "research invariably involves a trade-off between the parsimony (simplicity) of the method of data collection and the depth of information gathered" (p. 67). Given the research question involved, this was a very important issue since a fine balance needed to be kept in order to glean as much information as possible, whilst keeping the questionnaire as concise as feasible. Bogey (1996) in fact concludes, that

> there is remarked little sound experimental work to guide the survey practitioner in decisions about survey length…From the experimental work that has been done, it looks like the relationship between interview length and non-response is more often positive than not, but it is surprisingly weak and inconsistent (p. 1024),

whilst Engraft and Muller (1999) report that an eight-question questionnaire yielded as much information and a higher rate of response as a 52-question questionnaire. Given the specificity of the questions and the fact that it took

much less to complete and needed less effort from the respondents, the shorter questionnaire yielded more accurate data.

Birdie, Anderson, and Niebuhr (1986) further note that "seemingly more important than length is question content" (p. 53). Respondents are more likely to participate if the research topic is an area they are involved and interested in and if questions are meaningful and interesting to them. I therefore felt that I had to create a balance between the amount and type of content presented to attract the best possible rate of response. The structure of the questionnaire was also considered important. Birdie et al. (1986) advise that not only should instructions be clear and concise, but short sentences, basic reader-friendly vocabulary and language usage yield better response rates. Furthermore, with regard to structure, it was also decided to use one sheet of paper per printed page as it was considered more expedient to turn and write rather than turn, flip and write, as also noted in the pilot study feedback.

A fourth consideration is the choice of language for the questionnaire. In the context of my research, the first consideration was whether to use English or Maltese. English was preferred for two reasons: (a) all respondents are fluent in English and (b) the material in question is always taught in English in the local context. The type of language, given my hypothesis that most respondents were likely to be unfamiliar with SMSLI terminology, was another linguistic consideration. I had to be very careful to, as much as possible, phrase questions in such a way that early educators could understand what was required of them. The fifth important consideration to consider was feedback from respondents, implemented through the pilot study feedback.

I did not design the questionnaire (Appendix E) in a vacuum, but kept in mind personal research findings (Falzon et al. 2011; Falzon & Muscat, 2001), the literature review and the culture and experience of local early literary education as I perceive it through my professional and personal experiences. I have had the privilege of not only knowing the theoretical and academic material, but also having a feel of the local scene as a university academic since 1992, as a professional in the field since 1983, as a primary schoolteacher (1981-1986), as a parent of two children who have already gone through the

educational system (1991-2007) and, since 1993, as a parent of a son with SpLD. These professional and personal experiences, together with the literature review, helped me design the initial content of the questionnaire. The results of the questionnaire then helped me develop the guiding questions for the FGs (Appendix H).

Given that the specific aims of my research include finding out if Maltese early educators are aware of, understand and have a knowledge base for SMSLI, identifying what specific background knowledge they have and how they were trained, the questionnaire was designed accordingly. The questionnaire consists of three sections, each section made up of a group of related themes. Specifically, the content of the questionnaire is split into three parts: (1) detailed data of training, (2) perceptions of preparedness and strategies used in the classroom; (3) awareness of and actual knowledge on SMSLI (Table 6).

Table 6. Set-up of questionnaire

Part 1 Demographic Data
Educational background and Training
Literacy preparation during formal training
Part 2 Classroom Practices
Techniques used in Class
Definition of multi-sensory techniques to teaching early literacy
Confidence of preparation
Part 3 Planning for ffurther Professional training
Awareness of Knowledge of terms
Example of terms
Linguistic knowledge (phonemes, graphemes, short/long vowels, syllables)

Whereas planning the first two parts did not raise any difficulties with regard to possibility of lack of response, the third part of the questionnaire, specifically focusing on hard-core knowledge, caused concern. This was addressed by naming this third part "Planning for Further Professional training", followed by a specific explanation: "My research involves planning for further professional teacher training. I would therefore appreciate it if you were to answer the following, so that I can identify areas for further training for professionals". This explanation was aimed at helping respondents feel safe to indicate lack of knowledge. Furthermore, with regard to terms involving SMSLI,

this was addressed by creating a different section to give respondents the possibility to indicate whether they knew the meaning of terms and to then give examples in another section. Written comments on questionnaires by pilot study participants reflect these decisions and changes. (Appendices F and G)

Given that we are officially a bi-lingual nation and teach literacy in both languages during the early primary years; and keeping in mind my two constraints of conciseness and richness of content, I decided to use Maltese and English words to ask respondents to indicate phonemes and graphemes; English words to indicate long and short vowels; and English and Maltese words to address syllabication.   Following consultation with my supervisor, the pilot study for the questionnaire was planned and distributed in November 2007. The pilot study was analysed and this led to the finalization of the questionnaire. My field supervisor, Dr Camilleri, a statistics expert, reviewed the questionnaire to ensure that the design of the questionnaire could then be translated appropriately in SPSS results. The final version of the questionnaire (Appendix E) was the result of the original questionnaire amended according to feedback received from pilot study participants (Appendix G).

The questionnaire pilot study.
 Altman et al. (2006) stress that pilot studies are a must before distributing questionnaires. They define pilot studies as "a small experiment designed to test logistics and gather information and feedback prior to a larger study, in order to be able to improve the latter's quality and efficiency" (p. 1). This exercise allows researchers to understand and address deficiencies in the design of research tools, thus respecting the time and resources used for large scale distribution. The pilot study included the draft of the questionnaire, the consent form, the information sheet and a feedback sheet (Table 7 & Appendix F); and was sent via e-mail to 20 participants in mid-November 2007. These included five learning support assistants (LSAs); five literacy tutors who had been exposed to SMSLI; five early school teachers; and five part- or full-time university staff members. By the end of December 2007, 14 participants had returned the questionnaire and feedback sheet: four LSAs, three teachers, four literacy tutors and three university staff members. These were then processed in January 2008 (Appendix G).

Table 7. Pilot study feedback sheet questions

The Questionnaire
How long did it take you to fill in the questionnaire? _____   minutes
Is the language accessible?
Is the information presented understandable? Is everything explained well?
Were the questions clear?
Please mark on the questionnaire what you think should be changed and comment below.
Do you agree with all parts of the questionnaire?
What do you think should be deleted/changed from the questionnaire? Why?
The Information Sheet/Consent Form
Is the language accessible?
Is the information presented understandable? Is everything explained well?
Were the questions clear?
Other comments:

Appendix G provides an analysis of the pilot group participants' comments. Major difficulties perceived included: (a) length of questionnaire; (b) content of questionnaire; (c) choice of content with regard to linguistic knowledge; (d) keeping questionnaire as short as possible. Following these comments and a meeting with my main supervisor in January 2007, changes made involved reducing material and presenting material to ensure that participants could fill in the questionnaire easily and in around 15 minutes, rather than change the content. The final draft was five instead of seven pages long. There was concern that participants would not be aware of terms such as phonemes and graphemes, but the specific exercise was to see how aware and cognizant teachers were of the mechanics of language. It was felt that these terms should be retained, in light of the facts that (a) I was using the Moats Test as a concept (Moats, 1994, 1999) and (b) Wray and Medwell's (1999) conclusion that : "even using more everyday terminology …did not guarantee success" (p.4).   Comments I sporadically found in some of the questionnaires were a further insight that it was worthwhile to respond to the pilot study respondents' feedback and to address my research question. These comments were an insight to these professionals' perceptions and needs. Questionnaires were distributed to schools between February and July 2008.

Reliability of questionnaire content.
Langdridge (2004) describes reliability as "gathering data that are reliable" (p. 31) with measures that will provide "similar results on different but comparable occasions" (p. 32). To address this, a number of measures were

followed. First of all the pilot study helped streamline and address language, set-up and the content. Secondly, the Cohen et al.'s (2000) three-step process was followed: (1) clarify the main purpose and "translate[d] [it] into a specific, concrete aim or set of aims" (p.263); (2) identify and itemize subsidiary topics; (3) formulate specific information required. Thirdly, the content of the questionnaire was based on previous reliable measures - namely Moats' (1994) original study, as well as on other research studies. Fourthly, I tried to present as parsimonious and clear a questionnaire as possible by ensuring that questions were kept as simple and as short as possible; by using clear, precise, non-ambiguous and simple a language as possible, keeping in mind that although all professionals were English speaking, for some English was a bi-lingual language, for some a second and for others a third language; by avoiding questions that hint at a desired answer; by avoiding double negative questions - this was in fact only used once; by avoiding hypothetical questions; by ensuring that the wording of the questions were non-threatening and always respectful to respondents; by trying to use as least technical a language as possible.

Questionnaires' response rate.
Response rate is the single most important indicator of confidence that can be placed in the results of a study. A low response rate may be perceived as devastating to the reliability of research results. Smeeth and Flethcer (2002) note that: "No matter how expensive, well-designed, or important a study, a poor response rate can introduce such uncertainty - and worse still, bias - in the results as to make the study of little scientific value" (p. 1168). Fox, Crask and Kim (1988) report that their meta-analysis of experimental studies indicates that pre-notification and follow-ups, type of postage and university sponsorships increase response rate. They also note that "some evidence exists" suggesting that the colour of the paper used may influence the response rate. Heberlein and Baumgartner (1978) report a mean response rate of 60.6% in their study. They note that government organisation sponsorship, the type of population, the length, questions concerning other individuals, the use of a special class of mail or telephone, had a bearing on the final response. The 1983 Yu and Cooper meta-analysis of techniques used to increase response rates to questionnaires concludes increased response rates for the following reasons: personal and telephone as opposed to mailed surveys and questionnaires; either prepaid or

promised incentives; non-monetary and monetary rewards, preliminary notification; foot-in-the-door techniques; personalization; and follow-up letters.

Edwards et al. (2002) find similar results and conclude that response rate increases with monetary incentive, short questionnaires, personalized questionnaires, use of letters, coloured ink, use of recorded delivery, use of stamped return envelopes, contacting participants before sending questionnaires, follow-up contact and providing non-respondents with a second copy of the questionnaire. Response rate is also increased when questionnaires contain questions of a non-sensitive nature and when questionnaires originate from universities as opposed to other institutions, such as commercial organisations, and are designed to be of more interest to respondents. Boulianne and Basson (2008) refer to this as "Topic Saliency": response rate increases if respondents believe that the topic is important, interesting or provides an opportunity to address one's own needs. They further note that Topic Saliency exceeds the "potential impact" of sponsors.

Cummings, Savitz and Konrad's (2001) meta-analysis reports an average response rate of 61% for mailed questionnaires between 1985 and 1995. They note an average response rate for large sample surveys (> 1,000) of 52 per cent and conclude that response rates have remained somewhat constant over time. Furthermore, Baruch (1999) concludes a 55.6 % response rate of 141 academic studies published between 1975 and 1995 (with a decline to 48.4 in 1995). Baruch refers to lower levels of response from top management or organisational representatives. Jones and Lang (1980) point out that just increasing the response rate does not necessarily improve the precision of survey results as one must also consider "non-response bias". Fowler (1988) argues that even an 80% response rate may not be sufficient if non-response bias is present. If the non-responders' profile is similar to responders in every way, then the response rate will not affect generalisation, and even questionnaires with relatively low response rates could be considered valid. Fowler admits that similarities between non-respondents and respondents are often difficult to assess. In the case of this study, the difference could be carried out with regard to job placement and training. This is discussed in detail in the respondents' section below.

Table 8 summarizes strategies utilized to ensure the best possible response rate as indicated in the literature. All schools were contacted by phone; questionnaires were personally delivered; a date and time to collect them was agreed upon and schools were again all contacted by phone as a reminder before questionnaires were collected. The questionnaire was shortened following feedback from the pilot study, and the information letter was addressed as if one were speaking to each respondent individually. When questionnaires were being collected, spare copies with self-addressed envelopes were available. The information letter indicated clearly that this was part of a PhD study being carried out with Northumbria University and that the University of Malta Research Ethics Committee (UREC) had granted permission for the research. The present study's rate of response indicates an adequate to high rate of response. Percentages of response rates are never below 50%: 59.14% KGAs; 71.28% Year 1 teachers; 60.64% Year 2 teachers; and 51.12% LSAs responded. Actually, the non-response bias is not an issue in this respect and generalisations are possible since there are similarities between the profile of respondents and non-respondents, even though differences are significant between professionals except between Year 2 teachers and KGAs (p=0.7204).

Questionnaires' data collection.

During the data collection stage I meticulously followed the ethical procedures proposed in my IPA form. These procedures include the consideration of several issues such as confidentiality, informed consent and debriefing. The following was carried out:

1. Permission asked for and granted by the Education Division – Malta;
2. Forwarding to Northumbria University my police conduct;
3. Permission from the University of Malta's Ethics Research Committee;
4. Guidance from School of Health, Community and Education Studies Ethics Committee, Northumbria University: received and followed;
5. Feedback from my supervisors;
6. Inclusion of appropriate consent/information forms in the questionnaires for all participants in the study.

Table 8. Questionnaire set-up and response rate considerations

Consideration	Source	Present research procedure
Percentage of respondents	Baruch (1999);Cummings, Savitz & Konrad (2001)	Positive comparison of response rate observed.
a) Pre-notification and follow-ups b) Special mail or telephone/postage c) Foot-in-the-door techniques d) Follow up contact	Edwards et al. (2002) Fox et al. (1988) Heberlein & Baumgartner (1978) Yu & Cooper (1983)	All schools were contacted by phone. Questionnaires were personally delivered, a date and time to collect them was agreed upon, and all schools were again contacted by phone as a reminder before questionnaires were collected.
e) Use of recorded delivery	Edwards et al. (2002)	The staff compliment was requested and an explanation for this query was given (response rate).
f) Colour of the paper g) Coloured ink	Fox et al. (1988) Edwards et al. (2002)	Given that the population was professional, it was decided to use white paper and black ink.
h) The type of population i) Interest to respondents	Heberlein & Baumgartner (1978) Edwards et al. (2002) Boulianne & Basson (2008)	The population was professional and the questionnaire referred to areas directly related to the profession.
j) Length	Heberlein & Baumgartner (1978) Edwards et al. (2002)	This was given a lot of weight. The questionnaire was shortened following feedback from the pilot study.
k) Non- sensitive nature	Edwards et al. (2002)	This is extensively discussed and reflected upon below, particularly with reference to the third part of the questionnaire.
l) Questions concerning others	Heberlein & Baumgartner (1978)	Questions did not involve other individuals.
m) Non-monetary and monetary rewards	Yu & Cooper (1983) Edwards et al. (2002)	Monetary rewards are not part of the local culture and may suggest bribery.
n) Personalized questionnaires	Edwards et al. (2002)	The information letter was addressed as if one were speaking to each respondent individually.
o) Use of letters	Edwards et al. (2002)	An information letter was given to all teachers.
p) Non-respondents with a second copy of the questionnaire	Edwards et al. (2002)	Spare questionnaires were available on collection Questionnaires could either be filled in on the spot, or stamped self-addressed envelopes were given.
q) Originating/Sponsored from universities/Governments as opposed to commercial entities	Edwards et al. (2002) Fox, Crask & Kim (1988) Heberlein & Baumgartner (1978)	Information letter attested that the research was part of a PhD study at Northumbria University and that the UREC had granted permission.

The qualitative research tool.

Sprenkle and Piercy (2005) describe qualitative research as something that begins with a hunch (the research question) and, like an onion (participants' contribution), layers (researchers' analysis of data) are peeled away until the researcher gets a closer look and understanding of the phenomenon. It is a process of elimination and accepting to understand what the phenomenon could be.

Participants and researchers are both active participants, and this helps the knowledge to be constructed together by both parties, where the data that emerge are a reflection of the experiences among the members as a group. Open-ended guiding questions help generate views and perception at a cognitive level, and values and attitudes on an affective level. Although the group element adds richness to such a discussion, the presence of other participants may, on the other hand, limit participants to voice different opinions to the group's, or make participants feel less confident with regard to confidentiality and anonymity (Ulin, Robinson, & Tolley, 2005a). Fisher (1993) describes this as "social desirability bias": the tendency to reply as expected given one's perception of the FG one belongs to.

Kamberils and Dimitriadis (2005) refer to FG research as a key activity where "pedagogy, politics and interpretive" inquiry work together and "inter-animate" each other. They regard this research tool as efficient as it enables the generation of a lot of data in a relatively short time; due to the issue of group dynamics. The data also allow "powerful interpretive insights" which by definition cannot be produced through interviews due to a lack of group dynamics. Furthermore, they argue, FGs help elevate individual memories to "historically sediment collective memories and desires." They argue that this was perhaps why FGs have been conducive to research involving problem posing or solving, and perceive this research tool as "magnifying glasses" - a peep into the secret of "truths". This research tool also allows researchers to be self-reflexive even within the complications of "representation, legitimation and praxis." Kamberelis and Dimitriadis (2005) conclude that so long as researchers are aware of this complexity, "opening up to the unfinalizable complexity and

heterogeneity of 'others' within FG interactions is at least one way of travelling down these roads" (p. 906).

FGs are vibrant and more often than not an element of serendipity comes into play. It was important for me to keep to the guiding questions, but I felt that I had to be open to unanticipated questions as they might actually be part of the key themes under discussion. It was important for me to listen for serendipity, as well as to be led by unscripted questions to what was being said. This experience, in fact, led to themes which I had not thought I would focus on, for example Teaching Practice (TP) issues.

Silverman (2010) presents arguments put forward by "some qualitative researchers" that FGs may be perceived as an "artificial" research environment engineered to create data as requested by the research question. This perspective was kept in mind throughout the data collection process. Silverman (2010) explains that an alternative would be to use data which occur "naturally". This led me to reflect a lot on the validity of the research tools chosen. An alternative would have been to observe early educators in class as they are teaching early literacy, but this was not considered because it was perceived as an impossible task to undertake. Furthermore, the insight of teachers addressing their "before" and "after" SMSLI-awareness experience was seen as a better alternative, at least concept-, content-, time- and organisation-wise. Silverman (2010) argues that this resistance can be addressed through lateral thinking and finding ways to research in the natural environment in ways which are "accessible".

Silverman (2010) critiques the use of qualitative techniques such as FGs and interviews as "staged environment", since the research agenda "maneuvers" what is to be set by the guiding questions as opposed to "the beauty of naturally occurring data is that they may show us things we could never imagine" (p. 132). This was an aspect I reflected upon when creating the guiding questions. In fact, in three of the four FGs the theme "teaching practice" came up without it having been included in the guiding questions. As Silverman puts it, although some researchers view FGs as rather artificial, are any data

"untouched by human hands? Can any data be unsatisfactory?" I believe that, in carrying out the FGs in an environment chosen by the participants, in using open-ended guiding questions which led to discussions among the participants, in having not only studied but also lived the theme researched, in being able to redirect and in having a vast experience facilitating groups, I helped address as natural an environment as possible and was able to represent the voices of my co-researchers/participants.

Preparing for the focus groups.

Gaskell (2000) notes that following the development of (a) a theoretical or conceptual framsework to guide the research, and (b) key concepts and issues to address, " two key issues must be considered prior to any form of interviewing: what to ask (the specification of the topic guide) and whom to talk to (How to select the respondents)" (p.39-40).

What to ask - The Focus Groups' guiding questions.
An important aspect for conducting FGs is the FGs' questions themselves, both with regard to language and content, as this strongly influences how paticipants respond (Krueger, 1998a; Gaskell, 2000) Gaskell (2000) stresses that question designing needs to be given its due importance as otherwise both the respondents' and the researchers' times are wasted. He cautions that perceptively simple questions are usually supported by careful reflection and "designed to capture the aims and objectives of the research. It will be based on a combination of a critical reading of the appropriate literature, a reconnaiscence of the field… discussions with experienced colleagues,and some creative thinking" (p.40). Gaskell further insists that this should not be a series of specific questions but a guide to "create an easy and comfortable framework for a discussion, providing a logical and plausible progression" (p. 40). Gaskell also cautions that such a guide should not be followed "slavishly" and researchers must use their "scientific imagination to recognise when issues beyond prior planning and expectation arise…which may be important." (p. 40) I followed these guidelines as a way to plan my research questions. In fact, as

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noted by Gaskell, unexpected related themes which enriched the findings came out of the four FGs, as detailed in Chapter 6.

Neutrality was an important element in the designing of the FGs guiding questions' (Creswell, 2007; Krueger, 1998a). Neutrality in the way (a) the questions were worded, (b) I asked the questions and (c) I reacted and responded to the answers was observed, in order to ensure that questions posed could elicit both positive and negative responses. During the FG sessions. I was also careful to pick up on various themes or issues that emerged from participants' responses, as is reflected in some of he unexpected results and themes emerging from these focus groups (Gaskell, 2000).   I also used the first Focus Group as a pilot (a sample group) in order to to check for bias, understand possible range of responses, and fine-tune the questions (Krueger, 1998a;1998b).

The FGs guiding questions(Appendix H) were informed from the questionnaire results. Given that the data indicated little awareness of SMSLI and a lack of linguistic knowledge, the focus group interviews questions were designed to explore with the FG participants any effects, if any, exposure to SMSLI had on their teaching, their perception of literacy success with their pupils and their opinions of   and for initial teacher training and continued professional development.   Given that I was building my FG questions from data obtained from the questionnaire, I felt it important to use open-ended questions (Krueger, 1998a), as "Open-ended responses are not restricted by the categotry choices of the researcher, as are the responses to closed questions" (Kronberger & Wagner, 2000, p. 299).

Apart from ensuring that questions were open-ended,   I also took care to avoid dichotomous questions, both when preparaing the interview questions and during the FG sessions. I also encouraged participants to think back on their experienes, offered opportunities for reflections and tried to always move from the general to the specific (Krueger 1998a). In line with Krueger's suggestions (1998a), I also included ending questions as well as a final question asking whether we missed anything or whether they wanted to include anything else. I

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prepared the written guiding questions in English, given that my participants were all professionals and totally fluent in the language.

Whom to ask - Recruiting the participants.
Gaskell (2000) notes that the aim of qualitative research is to sample views and this implies that there is no "one method for selecting FG participants" (p.42) . Researchers must therefore be guided by their scientific background and imagination. Gaskell further notes that "[w]hile standard sociodemographic characteristics may be relevant and clearly are for consumer and political isues, it may be more efficient and productive to think in terms of the relevant social mileurs for other issues in question,…follow [ing] a phased approach…based on all the information prior to researching the topic (p. 42). This was perceived as the better option and the snowballing approach was used to recruit FG participants.

Langdridge (2004) asserts that this non-probability sampling technique, where initial contact with a few participants with the profile necessary for the research study is used to recruit more participants from among acquaintances, is "no more than convenience sampling under another name" (p. 41) but recognizes the appropriateness "sometimes necessary" strategic form of sampling that snowballing allows. Langdridge notes that this leads to a biased group profile which is "unlikely to be representative of the population" and presents this as a problem if it is not within the aim and scope of the research, but appropriate if it is. In the context of this present research, as explained extensively above, the profile of the FGs had to be professionals who had been exposed to SMSLI, and therefore snowballing, together with directly contacting professionals whose profile I was aware of, was perceived as the best recruiting procedure.

In my initial PhD Proposal, FGs were intended to be made up of a mixture of professionals who had been exposed to SMSLI. Following my literature review process and the data gleaned from the questionnaires, I realized that it would be more fruitful to use only professionals who had been exposed to SMSLI and elicit their "before and after" experience. This would allow me to try

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and understand whether SMSLI awareness had made an effective change in the professionals' awareness and teaching techniques of early literacy. I purposely asked for the opinion of the first FG participants, which in a way had also acted as a pilot FG, and the feedback received supported this decision. Snowballing (Langdridge, 2004) was therefore used for recruitment. These participants noted that they would actually not have felt comfortable had there been professionals who had not been exposed to such techniques. Given their experience with colleagues, they felt that they may have been a threat to participants not exposed to SMSLI. This is in line with Haberman's (1992) description of focus groups which includes a need for equality of status between participants; issues at stake as common concerns; open debate accessible to all, informed rational discussion, where, as Gaskell (2000) puts it: "The debate is an exchange of views, ideas and expereicnes, however emotionally and illogically expressed, but without privilege in particular individiauls or positions" (p.49).

It should also be noted that in the original proposal of this research interviews were also meant to be carried out. However, following the results and analysis of the FGs, it was concluded that interviews would be superfluous given the richness and range of material discussed during the FGs meetings and within the "saturation" and counter-productivity concepts discussed in Chapter 3 (Strauss & Corbin, 1998). In order to verify this, I also gave the transcripts to two of the prospective interviewees - a teacher trained in SMSLI and a dyslexia tutor - and they both agreed with this decision.

Logistical planning for the focus groups.
I contacted (a) three schools (two independent and one state) where SMSLI was being promoted and where the teachers were being trained in the area, and (b) professionals whom I knew had followed courses in the area. I explained to the latter the aims of my research via phone; they showed immediate interest and told me that they would form the groups themselves. I then distributed an information letter to all participants via e-mail in preparation for the FGs. I informed participants of the use of sound-recording technology, and that their responses would be transcribed and then destroyed following the

study. Via phone, and in written format, I also informed them of the voluntary nature of their participation, and that they could withdraw from the study at any point. I informed them that transcriptions and the analysis chapter would be made available to them for review. Participants were also given an information sheet (Appendices I and J) and a consent form to sign (Appendix K) before the interview took place. As had happened with the questionnaires - discussed in Ethical Considerations below - , most participants told me that they preferred not to sign the letter of consent in order to remain totally anonymous. I respected their choice. I also reminded participants of their rights prior to the recorded session. Although I prepared the written guiding questions in English (Appendix H), both languages were used interchangeably throughout the FG sessions. Confidentiality was respected throughout.

Managing the focus groups.

In managing the FGs, I followed guidelines found in the literature (e.g. Creswell, 2007; Gaskell, 2000; Greenbaum, 1998; Krueger, 1992; Krueger. & Casey, 2000). In line with recommended FG sizes, the four FGs averaged eight to ten professionals. Research indicates that smaller FGs (four to eight people) ensure that all members can participate fully. Kruger (1998b) suggests that one should plan to over-recruit by at least 25% to make up for no-shows and unavoidable absences and this was again employed. In fact on of the groups has 11 out of 12 participants asked to attend. The environment for the FGs was chosen by the participants themselves as detailed below. This ensured that the environment would be comfortable, non-threatening, and conveniently located. Times for the FG was as was convenient for the participants (Gaskell, 2000; Greenbaum, 1998).

The skills of being a good moderator was always reflected upon. Since I have extensive exprience in facilitating groups and in processing their experiences, I found it easy to facilitate, to moderate and to ask probing and clarification questions as necessary, apart from employing empathy (Egan, 2009; Nelson-Jones, 2008). Furthermore, the fact that I know most of the FG participants also helped quickly put people at ease and build a relationship based on trust, openness and candour. I was also wary that I had to keep the

group focused and on track and to ensure maximum participation and feedback.(Krueger, 1998b; Gaskell, 2000)

I began each FG by thanking participants for coming, introducing the study and reiterating the purpose of the FG, referring to the information letter and the consent form that had been sent to them. I again reminded them that I would be audiorecording the session and that the recording would be destroyed when the research was complete. I tested my equipment with the group to ensure that it picked up the voices of all participants. I discussed ground rules for the session such as saying their names before speaking, not interrupting each other, nonverbally indicating that they wished to speak so I could take note using a first-come-first-served basis, and gaining agreement from the participants about the progression of events. I also indicated the duration of the focus group (60-90 minutes), that it would be audioirecorded, how the data would be used and that they would be sent the transcript prior to my analysis and then the findings chapters to read and approve.

Before presenting the first question, I again reminded them that I wanted their honest opinion and not answers they think I want. During the session, I also employed probing to encourage elaboration on thoughts and feeling in order to also address underlying assumptions and beliefs (Creswell, 2007). I also made sure that silent member were drawn out, as well as attended to participants' body language and processed accordingly. Throughout the session I also at times summarizd in order to ensure that I was understanding correctly and to give opportunity for further clarification and elaboration. Such incidences also gave the participants opportunities to open up to further valuable discussions (Langdridge, 2004).

At the end of each FG session, I asked for additional feedback regarding issues they thought I had left out or anything else they wanted to address that they thought might be valuable. I finished each session by thanking the participants and telling them exactly when I turned off the audio recorder. Usually informal converstaions on the session continued for about 20minutes, during which time refreshments I had brought along were served. After they left

I wrote notes that included my general impressions about the participants' behaviour which I thought valuable for the research proess.

In this process, I opted not to use an assistant as I thought that this would affect issues of honesty and candour (Gaskell, 2000). This may also have been a limitation as I may have missed some nonverbals during the FG sessions and more notes could have been taken during the sessions.

Validity of the Research Tools

The concept of validity is quite elusive (Langdridge, 2004; Yin, 2009; Guba & Lincoln, 2005). The crux of the matter with regard to validity in this research is the following: are the results valid enough to allow for recommendations for better practices? Within the context that the ultimate truth is a "chimera", one can argue that there is not one ultimate method which is a "royal road to ultimate knowledge" (Guba & Lincoln, 2005, p. 205). However, commitment to be as faithful as possible to the voices of respondents and participants is what adds validity to research. Guba and Lincoln (2005) refer to the importance that one should give to "processes of interpretation" as opposed to the methods themselves. They refer to two levels of rigour that one should respect: positivistic rigour focusing on method application, and interpretative rigour focusing on how the research data are presented, interpreted and discussed. In the context of my research question, background, agenda and choice of research design, it was important for me to continuously be aware of both levels of rigour and to be loyal to authenticity both on a quantitative and on a qualitative level. Practitioners of positivistic and post-positivistic social inquiry are the most critical of validity, because any action on the part of researchers thought to potentially stabilize objectivity or introduce subjectivity results in bias. Ultimately, validity is an issue of ethics and integrity (Lather, 1993; Guba & Lincoln, 2005).

Creswell (1998) refers to a number of procedures that can be used for validation and reliability. These include peer review, experience in the field, triangulation of data, clarification of bias, auditing and reflexivity. Cho and Trent (2006) appreciate that validity and reliability are important factors particularly

when adopting a mixed-method approach. With regard to the quantitative research tools, these are enhanced by being faithful to the procedures required. With regard to qualitative research, one then refers to terms such as authenticity, trustworthiness or validity. Guba and Lincoln (2005), in fact , interchange the term authenticity with validity and refer to authenticity criteria proposed in 1989 (Table 8).

Berdie and Andersen (1974) argue that "[t]he validity of a questionnaire item is concerned with whether or not the item actually elicits the intended information. Questionnaire items are valid if they are successful in eliciting true responses relevant to the information desired" (p. 13). This was an issue which was central during the construction of the questionnaire and, in fact, received positive feedback from pilot study participants. Furthermore, reliability with regard to statistical data was respected by (a) ensuring that data were inputted correctly, (b) being faithful to the data, (c) using SPSS to represent the data as best as one could. With regard to qualitative research, the Guba and Lincoln authenticity criteria were used (Table 9).

Table 9. The 1989 Guba & Lincoln Authenticity Criteria (Guba & Lincoln, 2005)

Fairness	'A quality of balance; that is, all stakeholder views, perspective, claims concerns and voices should be apparent in the text. Omission of stakeholders of participant voices reflects, we view, a form of bias.' (p. 207)
Ontological Authenticity	Raising level of awareness by individual research participants
Educative Authenticity	Raising level of awareness by listeners for social or organisational purposes
Catalytic authenticity	Prompting action from participants
Tactical authenticity	Researchers training participants, if participants so desire

In his critique of qualitative research Bryman (2008) discusses four main validity weaknesses. He cautions that qualitative research (a) may be too subjective, depending on the researchers' views; (b) may be possibly tainted by close relationships with research participants in the data collecting process; (c) may lack reliability as it is difficult to replicate due to lack of structure and the researchers' pivot role in the data collection process; (d) reflects generalization

challenges due to sample sizes and may lack transparency of the research process. These weaknesses may in themselves be a factor for richness. Looking at the concept of transparency and subjectivity, for example, the same can be said for quantitative research. The assumption that quantitative research is more reliable is also based on concepts of subjectivity and transparency. It assumes that researchers have been ethical throughout: is the research tool balanced: are data used given by actual respondents? Have data been inputted accurately? Have statistics been tampered with? Have data been interpreted objectively? Ultimately, whether the research is quantitative or qualitative, it all boils down to the issues of ethics, morality and loyalty to the data. In admitting that qualitative is more subjective than quantitative research, one must not overlook the fact that sources (respondents) and outputs (researchers) of quantitative research are also subject-based as the process starts from individuals as well.

Contextualizing these issues into my research is a way of reflecting on the validity of the research tools and results of this research, and the benefits of the recommendations yielded from the results. Using the literature in this section as a guideline, I will try to address validity as directly related to this research. The major concern of the results of this study is whether these are valid enough to allow for recommendations for better practices. Within the context that the ultimate truth is a "chimera", I felt committed to be as faithful as possible to the voices of respondents and participants (Guba & Lincoln, 2005). With regard to the FGs, I used respondent validity (Silverman, 2010) and gave transcriptions and the results chapter to the participants to read and comment (Appendices P to U); double-checking of coding through time (two-months moratorium) and personnel (coding checked by Dr Agius Ferrante) had also been also carried out, as explained previously.

When the findings chapter was drafted, I also sent participants a copy to ensure that my analysis was again faithful to giving them a voice. Positive feedback was received (Sample in Appendix U). In this way, I felt I was respecting the two levels of rigour described above by Guba and Lincoln (2005). With regard to the data from the questionnaires, I was very careful to input data

as documented in the questionnaires and double-checked data inputted with a third person, Mr Aaron Falzon, in order to ensure that the statistics truly reflect the respondents' answers. As noted above, ethics and integrity were two principles guiding this research process (Lather, 1993; Guba & Lincoln, 2005).

Given Bryman's (2008) critique of qualitative research weaknesses and my immersion into the research theme in question, as explained above with regard to standpoint theory, I always challenged myself to detach myself from the research aspect in order to least taint the interpretation of the participants' voices, particularly during the analysis of the FGs. Furthermore, I was aware of the close relationships with my research participants in the data collecting process. Living in a small island community leads Maltese professionals to wear a number of hats. This was an experience I both used to the fullest and was cautious about when collecting data during the FGs.

Ethical Considerations

Ethical consideration has been given paramount importance in the last 20 years, particularly with reference to participants' rights, data protection and participation. Wiles, Heath, Crow and Charles (2005) note that principle-based approaches to ethics in research involve "adherence to moral principles" which include autonomy, non-maleficence, beneficence and justice. I have tried to adhere to issues of ethics, rigour, validity, reliability and trustworthiness throughout my research process. I have tried to follow faithfully the principles and code of conduct of the American Psychological Association (2002, 2010). These principles were adhered to at every stage of the data design and collection (Table 8). Respondents to questionnaire and FGs participants were always free to make their own informed decisions about participation in the research (autonomy). The research did not inflict harm in any way through the process (non-maleficence). It is my belief that this research should benefit others, particularly children (beneficence) and all participants were treated with equal respect during and within the research process (justice). Ultimately, the responsibility goes beyond the academic and must incorporate a caring attitude

in order for me to continuously be faithful to why I want to research - to help provide children the best possible school experience and quality of life.

Procedure-wise, the literature presents six ethical principles to be addressed and implemented when carrying out research - informed consent, lack of deception, right to withdraw, debriefing, confidentiality and accuracy (e.g. Eisner & Peshkin, 1990; Breakwell, Fife-Schaw, Hammond & Smith, 2006; Christians, 2005). These were all followed and implemented, also within the context of insider research, as discussed above (Northumbria, 2011). From a legal perspective, I also had to follow procedures as decreed by my local university and by Northumbria University (cf. *Questionnaires data collection* above*).* Researchers in the local context have to have all research involving direct contact with people cleared and approved from the Maltese University Research Ethics Committee. This is in line with what is happening in other countries. On the other hand, there is no legal or criminal provision which stops anyone from going ahead with research without the consent of this committee.

An issue which cropped up with the questionnaire respondents, but not at the pilot study phase, was the use of the signed consent form (Appendix J). In spite of explaining what a consent form is, and that its use is out of respect for research participants, its use, at times, actually led to resistance. In point of fact I had to resort to telling participants willing to fill in the questionnaire that, of course, they did not have to give me the consent form. Most participants did not. This led me to reflect a lot on the issue of anonymity in a small island community, and whether researchers should reconsider the procedure and the use of the consent form. Homan (1991, 1992) challenges the concept of informed concept querying whether participants are actually given a full and complete explanation of the research involved or whether the researchers, in their zest to answer the research questions, fail to help the participants understand the full implications of the research and the complete understanding of all possible consequences involved. This may occur both because of the participants' lack of background in the area as well as the eagerness of researchers to achieve a high response.

Wiles, Heath, Crow and Charles (2005) distinguish between informed consent in rhetoric and in practice, and argue on the importance of researchers' self-reflection with regard to the content and completeness of informed consent. Wiles et al. (2005) refer to a total of 104 literature references on consent forms: "researchers have noted that it is their responsibility to identify ways of enabling people of varying ages and abilities to consent to participate in research by providing information that is appropriate to individuals and checking that such information has been understood" (p. 13). Whilst a signature may be viewed as important to safeguard participants and researchers; on the other hand, asking for a signature might be problematic, particularly in relation to research on socially unacceptable or deviant behaviour, or where participants need protection (e.g. Ensign, 2003). Additionally, the need to obtain a signature might be problematic in that it makes the process a formal one. This might be seen as off-putting for some people due to issues of confidentiality, security, fear, management, illiteracy, language or communication problems (Coomber, 2002; Williamson & the Domestic Violence Research Group (DVRG), 2004). Signature use is also a particular issue for researchers working with people with learning difficulties. Rodgers (1999) notes that researchers have developed creative non-literate ways of obtaining consent, such as the use of tape-recorded consent, providing marks on a consent form or holding up red or green cards to indicate yes or no. Researchers (e.g. Coomber, 2002; DVRG, 2004) note that the use of signed consent forms may compromise issues of confidentiality and anonymity which are important issues when participants – such as criminals - are in need of protection.

The major issue about signed consent forms in this research was anonymity. When I started going to schools to distribute the questionnaires, Heads of schools were informing me that, whereas their members of staff were willing to fill in the questionnaire, they were not willing to sign the consent forms "in case they could be traced". To safeguard confidentiality I was giving schools two separate envelopes: one for consent forms and one for the questionnaires with the information sheet. Furthermore the consent forms were not stapled to the questionnaire and information sheet. In spite of this, signing the consent

forms was off-putting and, as from the first school return, I was getting no more than 10% of consent forms returned.

After the fifteenth school complaining about the use of signed consent forms, and due to the fact that they had "never been asked to do so" in the case of other questionnaires, I decided not to include the separate consent form. No further concerns on confidentiality, possible tracing or queries about lack of consent forms were then raised. Also, as my supervisor wisely pointed out, having to answer questions to which they did not know the answers may have been worrying and unnerving for these early educators - they don't know what they should know. On the other hand, when I personally was at the school and explained the consent form, refusal to fill in came prior to seeing the contents of the questionnaire. Ensign (2003) argues that, at times, written information may actually be inappropriate. One notes that the information sheet also asked respondents to keep this same sheet. Most of them (84.5%) were returned stapled with the questionnaire.   With regard to the FGs, apart from e-mailed information sheets prior to the FGs (Appendix J), oral information was also provided at the start of each FG. FG participants also preferred not to sign the consent form. They felt safer if no consent form (Appendix K) were signed. One must remember that we are a small island community, and so privacy and confidentiality are jealously guarded.

Debriefing is also considered as an ethical issue. Walonick (1993) argues that the 'pre-notification letter' should include five aspects: (a) a brief description of the aims of the study; (b) the identification of the sponsors; (c) an explanation for choice of respondents; (d) justification of respondents' completion of the questionnaire; and (e) an explanation of how results would be used.   The questionnaire information sheet (Appendix I) indicates that I tried to be as complete and as open as possible in the information sheet given to participants. However, I still criticise the fact that when verbalizing the aim of the questionnaire as "to try to address information early educators have with regard to teaching literacy in the early years" I may have purposely used the generic term "address information" to help increase response rate and to ensure that respondents would not be aware that they might have to address knowledge

they might not have. The question that begs to be asked: Is this intentional to try "to catch them out" or my aim to see how children can better be helped? My major concern was that I needed a high rate of response, and therefore I purposely phrased the aim in generic terms in order not to put respondents off.

The Research Participants

All participants were professional educators working with children in their early years of primary education. Questionnaire respondents included all possible educators working in the Maltese islands, whilst FG participants included professionals who satisfied the exposure to and use of the SMSLI selection criterion.

The FG participants.
The FGs participants totalled 29 and four focus groups were formed. Appendix L provides a detailed description of the participants.   Although in most literature papers FG participants are traditionally referred to as numbers, out of respect for the participants, I opted to give participants a name rather than a number. Teacher participants were given pseudonyms starting with 'T'; class facilitators (LSA/class assistants) with an 'F'; support reading tutors with an 'S'; and head of school with an 'H'.   APA (2010b) does not offer any guidelines in this respect.

FG1 was carried out at a primary school and the literacy coordinator (Tessa) organized the meeting. The Head of school, Hilda, popped in during the FG and left before the FG session ended. None present, including myself, were aware that Hilda would be joining us. No Kindergarten teacher was present in this FG, and all teachers and LSAs were involved with Years 1-3 classes. This school is continuously being trained and supported by a dyslexia expert in SMSLI. During FG1 sessions participants spoke English. FG2 had seven participants and was held in my office at their request. Three LSAs who had committed themselves to attending this FG did not turn up. FG2 participants spoke Maltese and English during sessions. FG3 was again held on school premises and was organised by the literacy coordinator. Two teachers and two LSAs, who had promised to participate did not turn up. The literacy coordinator

was called in for an urgent Senior Management Team (SMT) meeting at the last minute and could not participate, whilst the Head of School apologized for not attending due to an urgent meeting, even though it had been made clear that management staff was not involved in the research. FG4 was held in a Gozo Primary school where training in SMSLI had been carried out. This FG was held at 12.30, right after school, during the first week of July at the request of the participants. Two teachers and one KGA cancelled at the last minute as the three of them had sick children to take care of at home.

The aim of the FGs was to try and elicit teachers', KGAs' and LSAs' perceptions and awareness of multi-sensory techniques. Unfortunately, no KGAs were present during the FGs sessions, even though I had tried to recruit these professionals as FG participants. This may either just have been coincidental, because KGAs perceive the skills of reading - specifically breaking the code - as removed from their syllabus, or because they did not want to attend. I was aware that, in at least two schools where the FGs were held, there were KGAs who had been exposed to such techniques.

The views of two parents were also heard. This interview was a serendipity experience. I was on the Gozo Ferry reading through my FGs guiding questions' in preparation for FG4, when Petra joined me at the Gozo Ferry's cafeteria table I was sitting at. Petra is a parent from Gozo, an acquaintance, a friend of a mutual friend, has children attending the school where FG4 was held, and a teacher of hearing-impaired children. She asked me what I was doing on the ferry and I explained that I was on my way to a Gozitan primary school to conduct a FG in connection with my PhD studies. She then asked for an explanation of what and how I was conducting the FGs and then immediately told me that I should interview parents from her community school "*to tell you the 'real difference' we have found. Our kids now know how to 'navigate' words'. I have two kids five years apart who went to the same school and I know the difference in their early literacy development, when the same Year 1 teacher was trained in multisensory and taught my younger one.*" This quote was documented verbatim and then translated. Petra approved the translation as an accurate quote and gave me permission to quote her.

I immediately picked up on the idea and asked her if she knew other parents who had had a similar experience. She told me she knew of another parent who, she was sure, would be willing to meet me. I asked her to check whether this second parent would be willing to be individually interviewed so that I could have two interviews with two different parents. On the same day in the afternoon, on my way back from Gozo, Petra called to tell me that the second parent (Pawla) had accepted but wanted to be interviewed simultaneously with Petra. We also agreed to meet the following Wednesday at 11:00, whilst their children were at summer school. The venue chosen was Pawla's home, at her request - literally around the kitchen table with pleasant cold drinks and Gozitan savouries! This interview consisted of an adaptation of the same guiding questions, but ended up more as a conversation between the two mothers with minimal input from me. Maltese/Gozitan was used throughout. As an experience, it was quite revealing to gain an insight into how these two parents understood their children's process of learning and development and how they perceived SMSLI, parental training and informative meetings.

The question that needs to be addressed is: What does such an interview add to this study which focuses on teachers' perceptions of SMSLI? In my opinion, given that parents are serious stakeholders in education, their views added weight to my hypothesis and gave me a possibility to reinforce my recommendations and suggest further research. Although we were only listening to the voices of two parents, they had very strong views which warrant documenting. The two parents saw a difference between their older and younger siblings' literacy process, and questioned why teachers are not trained "properly" in the first instance. This is a very important input which, I feel, should be put across to policy makers and teacher educators, since here we have a situation where even the "lay non-professional" is identifying a need which persistently remains lacking in teacher education, as noted in the literature review. These unplanned parents' views may also provide a suggestion for further research in the area as, even though the aim of this research was to address early educators specifically, a limitation to the study is the lack of inclusion of all stakeholders.

Respondents to the questionnaire.

Questionnaires (Appendix E) were distributed among all primary schools and Kindergarten centres in Malta and Gozo (KG - Year 3). The list of all schools was procured from the Ministry of Education 2007 website (2007). Schools were contacted by phone and the research, permission request and procedure clearly explained. Some schools requested a soft copy of the questionnaire and this was forwarded on the same day. Three independent schools could not be reached, and inquiry into the matter concluded that these three schools had closed down. Out of a possible total of 97 schools contacted, 90 schools were finally included in the data. A state school and a Church school did not want to participate. Out of the 95 schools which agreed to take part, four Church schools and one independent school had misplaced all the questionnaires and these were not included in the sample. Another state school misplaced half of the filled-in questionnaires. The final sample was 701 out of a possible 1183 respondents (59.26%). This is quite a high rate of response that makes generalisation and inferences possible (Baruch, 1999; Cummings, Savitz & Konrad, 2001). This selection from the possible population of 1183 guarantees a maximum margin of error of 2.36%. (sample size calculator http://www.surveysystem.com/sscalc.htm)

The population sample possible (100% response rate) was worked out following communication with each school via landline. When calling each school, Heads were asked for the total number of staff in their schools in order to (a) be able to know how many questionnaires to give to each school and to (b) later determine what percentage of the total population actually answered the questionnaires. This was felt to be more reliable and most-updated and current data than simply seeking statistics from the Ministry of Education, due to continuous movement of personnel throughout the academic year. The possible sample was 1183 early educators: 487 KGAs; 383 teachers - 195 Year 1 and 188 Year 2 teachers; and 313 LSAs. These totals relatively tallied with the national official statistics (NSO 2010), where 28 more KGAs, 14 more Year 1 and 24 more in Year 2, are officially documented for the calendar year 2007. One also needs to take into account when the national statistics were compiled.

If these were compiled after October 2007, data would have been dealing with the academic year 2006-7, whereas I was addressing professionals serving during the academic year 2007-8.

This population of 1183 possible respondents yielded an average school staff of 13.14 with a median of 10. Using concepts regarding group size, group dynamics, feelings of belongingness (Greenberg & Baron, 2000; Dunbar, 1992), the effect of group size on co-operation (De Cremer & Leonardelli, 2003) as well as local statistics (NSO, 2010), schools were clustered into small, medium and large. Given that (a) we were addressing part of the school staff (Years 4-6 not included), (b) some schools are from KG to Year 6, others KG to Year 3 or KG only, cut-offs points of 0-12; 13-29 and 30 and more, were seen as reasonable to cluster schools by size. Schools with a staff of 12 or less were considered as small schools (n=56; 62.2% of the schools), medium schools between 13 and 29 (n=23; 25% of the schools) and large schools with more than 30 staff members (n=11 state schools; 12.2% of the schools).

Significance of the respondents' profile.
The analysis in Appendix M evidences that personnel from small and medium schools tended to provide a higher rate of response, particularly if they were Year 1 and Year 2 teachers and if they were graduates or possessing at least a diploma, in the case of class LSAs, or the two-year KGA course with regard to KGAs. A positive correlation between training, type of school, size of school and job placement is observed. There may be more of a sense of camaraderie and belongingness in small schools, making professionals working in smaller institutions more sensitive to the importance to supporting one another in research and work (De Cremer & Leonardelli, 2003). With regard to type of school in the local context, State school professionals are the ones with the best job security, followed by Church and independent schools. Job security also tended to be reflected in the rate of responses. Geographical zones did not yield any significant differences.

With regard to job placement, it might be that teachers found the questionnaire more relevant because of the specific syllabus and

responsibilities, as opposed to LSAs and KGAs (DQSE, 2010). One Head of school specifically did not give the questionnaires out to KGAs as "[they] would not know how to fill it in and it is not their area", whilst interestingly enough she then distributed them to LSAs who are not required to teach children how to teach reading. In fact, the Ministry of Education specifically indicates that children with dyslexia are not to be given a statement of needs - a local legal affirmation that a child needs support in class (verbal communication with Service Manager Mr George Borg). It could therefore be that, once LSAs noted that the questionnaire was on literacy, they may have been disinterested and not filled it in. On the other hand, Year 1 teachers are the once most involved with teaching reading, and they had the highest rate of response, followed by Year 2 teachers. Notwithstanding, the percentage rate of LSAs is still valid.

There seemed to be a trend that those qualified were more likely to answer. For example, Year 1 -2 teachers who answered and indicated their training were more likely to have read B. Ed (Hons) primary, MATC, PGCE or BA/BA (Hons); the Kindergarten population, with a two-year course or with other courses - indicating that they were likely to have started working without formal training and then attended CPDs - were the ones who answered most; and LSAs who answered were mostly those who had read a Certificate or Diploma course. This may be due to the fact that when one attends training courses one may become more sensitive to the importance of research, to empathizing with the researcher's need to get a good rate or response, or to be more committed to the profession.

Gender was not a determinant in this research. Given the professions involved, there were so few males (n=10) in this population that it was not viable or conceptually meaningful to carry out any gender comparison. On the other hand, given that training in Malta has changed over the years, age, professional and training comparisons were carried out. The highest number of respondents were 22-30 years old (29.77%), mostly Year 1 and Year 2 teachers, whilst only 26 of the respondents were aged between 18 and 21 years (<1%). There could have been very few personnel aged less than 21, and certainly not qualified teachers, since graduates are around 22 years of age when they finish their

training course. The breakdown of the total population sample by age was not available so no comparison between possible and actual rate of response could be made. Moreover, not all 701 respondents included their age.

Data Analysis

Data analysis followed the same ethical procedure and considerations expected and explained above. Different strategies were used to analyze the quantitative and the qualitative data.

Analysis of the quantitative data.
For the purpose of the analysis process, the raw data gathered from questionnaires were converted into quantitative data. The questionnaire included variables that are quantitative (covariates), such as number of reading aspects covered during formal training and number of answers correct, and variables that are categorical (factors), such as profession, teaching post, formal training, exposure to SMSLI, areas of knowledge and age-groups. Descriptive statistics (frequencies and percentages) were derived as required. Statistical inference was intended to make generalisations. This was carried out in two ways: either by the 95% confidence intervals or by conducting hypotheses testing. Several statistical (hypothesis) tests were used to make inferences about the early educators using the respondents' data set.

Since the two independent sample t-test caters for only two independent groups, whereas the One-way ANOVA test caters for two or more independent groups, it was decided to use the latter test to compare mean scores of a covariate (quantitative variable) across the levels of a factor (categorical variable).   The null hypothesis specifies that mean scores are comparable across the levels of the factor and accepted if the p-value exceeds the 0.05 level of significance. The alternative hypothesis specifies that the mean scores differ significantly across the levels of the factor and are accepted if the p-value is less than the 0.05 criterion. The Tukey post hoc test was used to compare mean scores between pairs of levels of a factor.

The Chi-square test was used to test for associations between two factors. The Null hypothesis specifies that there is no association between the two factors and is accepted if the p-value exceeds the 0.05 level of significance; whereas the alternative hypothesis specifies that there is a significant association between the two factors that is not attributed to chance and is accepted if the p-value is less than the 0.05 criterion. The Pearson correlation coefficient was used to measure the relationship between two covariates and ranges from -1 to 1. A positive correlation coefficient indicates a positive relationship; a negative correlation indicates a negative relationship, whereas a correlation close to 0 indicates a very weak relationship. The Null hypothesis specifies that there is no relationship between the two covariates and is accepted if the p-value exceeds the 0.05 level of significance. The alternative hypothesis specifies that there is a significant relationship between the two covariates and is accepted if the p-value is less than the 0.05 criterion (Freund, 2001).

In the case of all these three tests it was decided to opt for a 0.05 level of significance to guarantee that the probability of Type I and Type II errors are comparable (Camilleri, 2006; Freund, 2001). Besides, most research studies use a 0.05 criterion. Graphical representation of relationships was displayed using scatter plots, clustered bar graphs and error bar graphs. Given the aim of the research, the need for the regression model was deemed unnecessary. These models usually try to identify the most significant predictors. In the case of this research, there was no need for predictors since the data were seen as descriptive, from where recommendations with regard to training in the area could be derived. When it was not possible to use the SPSS (Version 19) package to address levels of significance, two Internet sites were used. The site http://www.dimensionresearch.com/resources/calculators /ztest.html (Appendix N) and the sample size calculator from http://www.surveysystem.com/sscalc. htm were used to compute two-sample T-tests between proportions, Z scores and the corresponding p-values for the Sampling Distribution of the difference of two proportions. Appendix O presents the computation process (Freund, 2001).

Analysis of the qualitative data.

Langdridge (2004) cautions that "[Although] coding is creative, [but] it should also always be consistent and rigorous. There is no room for sloppiness here any more than in the statistical analysis of quantitative data" (p. 267); whilst Bogdan and Biklen (2003) conclude that "particular research questions and concerns generate certain categories. Certain theoretical approaches and academic disciplines suggest particular coding systems" (p. 161). These are the two main principles I have used to choose the type of analysis for the Focus Groups and the restraints I imposed on myself to truly represent the voice of the participants.

Following transcription (Express Scribe, 2009), I used thematic analysis, in the form of Interpretative Phenomenological Analysis (IPA). Smith (1997) argues that such methodology allows researchers to peep inside texts in trying to "unravel the meanings" of participants' "accounts through a process of interpretative engagement with the texts" (p. 189). The aim is to allow participants to describe their experiences in as much detail as possible, and to allow the researcher to enter their world as much as possible. The use of FGs allowed me to explore the experiences of the participants and to gain an insight into their world in order to identify aspects and themes of their experiences. The idiosyncratic approach adopted by IPA studies the experiences of individuals in depth in order to try and glean meaning and possibly make suggested generalizations for the benefit of society (Langdridge, 2004).

The process I used for thematic analysis involved five main steps: (1) transcribed transcripts were first read in order to make general notes about my thoughts of meanings of the text. (2) Themes were identified as chunks representing patterns of meaning. Given my experiences and possible biases, I tried to remain as open as possible to making alterations to themes and associated meaning throughout this stage of the process. As discussed above, I had to be careful not to impose meaning. (3) Clustering themes and forming hierarchies led to a summary list with super-ordinate and subordinate themes together with related verbatim quotations. (4) Following this first reading process, the summary list of themes was modified accordingly. (5) This occurred

consecutively for each of the five transcripts until all data were generated and cohered into one main summary list with main, subordinate and related themes, together with verbatim quotes in order to capture the meaning and the voices of all participants. Various themes associated with the research question emerged. Rich data were collected from the transcriptions. This whole five-step procedure was repeated from scratch two months later as well as given to colleague Dr Charmaine Agius Ferrante to address validity and reliability of coding and interpretation of the raw data and to compare for possible bias (Table 4). In general, there were no differences in emergent themes. Finally, the draft chapter was e-mailed to FG participants as explained above (Appendix U). An audit trail of the transcripts may be found in Appendices P to T.

Smith and Eatough (2007) explain that researchers should be "guided" not "governed" by the guiding questions. Apart from the five-step process, I also adopted the process of "epoche" as defined by Husserl (1931; as cited in Creswell, 2007). This approach involves putting aside one's presumptions and biases, which, in my context, is extremely relevant given that I am immersed in this profession. In order to respect "epoche", transcripts were read repeatedly to immerse myself in the content such that I could adopt the "epoche" approach and understand better the perceived experience of the participants. This led me to consciously try to describe factually the transcript such that derived interpretations and meanings would be the voice of the participants. Common patterns were documented, reanalysed and categorised in appropriate themes in an attempt to voice the core meaning of the participants' experience (Table 10).

Table 10. Summary of focus groups' main emergent themes

1.0	Initial Teacher Training
2.0	Methods of teaching and learning during ITT training
3.0	Teaching Practice (TP)
4.0	Training beyond ITT
5.0	Teaching reading
6.0	Parental involvement
7.0	System of changing
8.0	Effectiveness of multi-sensory techniques to teaching early literacy
9.0	Job Satisfaction

This allowed me to create master themes, constituent themes and the relevant quotes which evidence the master themes.

This process led to a number of challenges. One of the first decisions I had to take was whether to analyse manually or whether to use computer-assisted analysis such as Atlas, Nudist or NVivo. Given that I had four FGs and one parent interview, I felt that manually analysing the material would give me a better grip of the content and the voice of the participants. Besides, I read the transcripts whilst also listening to my participants' recordings. This allowed me to listen to their non-verbals and to better visualize actual sessions. Secondly, trying to analyse and categorise the rich data, whilst respecting the voice of the participants in toto, into a Table seemed at first an impossible task. Practically, the use of different coloured highlighters was a great help as was Husselr's "Epoche" approach and the five-step process utilised on a conceptual level.

Sim (1998) notes that it is difficult and misguided to attempt to "infer an attitudinal consensus from Focus Group data" (p. 345), and one should be cautious to elicit themes and not be bound by the hierarchical importance of data collected. Whereas hierarchical importance was not an issue in my interpretation of the data, my concern was the total consensus of opinions among participants, with regard to themes such as how teachers should be trained, how literacy should be addressed, parental involvement and systems for change. Where to fit quotes which could be put in two or three themes was also challenging. At times I included quotes in more than one theme in order to respect the complete voice of the participants. Alternatively, I analysed what seemed to be the most important messages in the extract and then categorized accordingly.

Given that I am immersed in this profession as well, I was constantly conscious that I needed to take a step back and try to ensure, from a standpoint theory perspective, that I was representing the voice of the participants and not my own perspective or agenda. The task was how to blend in the actual words of participants in order to present a faithful interpretation in a cohesive, structured and reader-friendly way, such that a collective meaning could be

elicited and presented as fairly and as faithfully as possible thus remaining as authentic as possible to the participants' voice. Faithful translation and the fact that any translation (from Maltese into English in this case) is an interpretation were also taken into consideration. Balancing quotes and results was another challenging task in the qualitative analysis chapter.

Unexpectedly, the results yielded general agreement on most concepts by participants, such that, as noted above, a saturation point was reached and the decision was taken not to carry out individual interviews with professionals. Careful care was taken during the analysis stage to try to find disagreements and divergences in concepts, experiences and perceptions among participants, but they were in general of similar opinions on themes that emerged. This also needs to be reflected upon, as this may both be an advantage and a disadvantage. On the one hand, it may emphasize the importance of the techniques discussed in this research while, on the other hand, choice of participants may be a contributing factor. During the FGs, participants were very active, and I literally had to ask people permission to insert questions. Participants were very fervent about the subjects they were discussing and, in fact, themes that emerged also include emotions. Furthermore, unexpected related themes which enriched the findings came out of this part of the research. Readers must remember that all FG participants had been exposed to SMSLI and were comparing their before-and-after experiences.

A Journey of Discovery through Self-reflection

This chapter has been a journey of introspection and analysis of my identity as a researcher in the context of being a "knower". I have tried to present the philosophical framework, political alignment and value systems which guided me to select the research theme, the methodology and research tools, and address the conceptualization, logistics and mechanics of accurate and faithful inputting, presentation, interpretation and analysis of data. This chapter has also allowed me to take a step back from my immersion into the research theme and to try, as ethically and critically as possible, to be aware of the benefits and the pitfalls of my research design and my presence as a

"knower". Ultimately, I have tried to be faithful to the basic responsibility of the researcher - my obligation and moral responsibility to try and present a profile of results and recommendations for the betterment of the community and in respect of the truth; and to remain close to the ultimate aim of research: a quest for a better world and good quality of life. Specifically, I want to promote a change in ITT and will personally present my findings to both teacher trainers at the University of Malta and to the Ministry of Education in a report as well as organise a seminar for stakeholders through my university. The next two chapters present the quantitative and qualitative research findings.

CHAPTER 5

Listening to the Respondents

"educators demonstrated limited knowledge of phonological awareness or terminology related to language structure and phonics" (Bos et al., 2001, p. 98).

This Chapter intends to present salient statistical data retrieved from the Questionnaires. Questionnaire respondents were not selected, but included all possible Maltese early educators working in Maltese and Gozitan primary schools. As explained in the methodology chapter, 90 schools - 58 state, 20 church and 12 independent - out of a possible 97 schools agreed to take part (n=1183 respondents). 701 questionnaires were returned, yielding a response rate of 59.26% and a maximum margin of error of 2.36% (sample size calculator, http://www.surveysystem.com/sscalc.htm). It should be noted, however, that around 20% of the respondents did not answer the whole questionnaire. The Population profile (Appendix M) indicates that personnel from small and medium schools yielded a higher rate of response, particularly if they were teachers, graduates or had, at least, a diploma in the case of classroom Learning Support Assistants (LSAs/Facilitators). The questionnaire consisted of three main sections, each section being made up of a group of related themes (Table 5). Given the complexity and amount of data, most statistical tables and figures are presented in Appendix V for ease of read. Tables or figure numbers preceded by 'V' before their number are found in Appendix V.

Respondents' Preparation to Teaching Early Literacy during Formal Training (FT)

Respondents were asked to indicate what aspects of literacy they had been exposed to during their formal training (FT). There was a list of 14 answers and space to include other areas not listed in the questionnaire. No respondent added areas other than the 14 listed and the overall view indicates that most respondents ticked between one and four areas of training (Table V1 in Appendix V and Figure 2 overleaf). 162 (23.1%) respondents did not answer this question, 122 (17.4%) ticked one area, 281 respondents (40.1%) referred to two to five areas, 116 (16.5%) indicated between six and nine areas. 20 (2.9%) respondents noted more than ten areas they had been exposed to, including two respondents who ticked all fourteen areas.

When comparing the number of areas indicated with FT profiles (Table V2 and Figure V1) one finds that most B.Ed. (Hons) graduates (51.4%) and most Diploma-LSAs (54.4%) graduates ticked between four and seven areas; almost half (46.2%) of Mater Admirabilis Training College (MATC) graduates

between two and three; whilst 45.9% KG-course trained, 35% one-year Certificate-LSA trained and 53.8 % who indicated 'other' as coursework ticked one or no areas.   B.Ed. (Hons) graduates (21.6%) and Diploma-LSAs (19.1%) ticked most areas covered (8 to 14 areas). Statistical differences are significant and one can infer that respondents who indicated 'other', KG-course, MATC and BA-PGCE as their FT profile were more likely to have covered none or only one area; those who had read KG-course or attended MATC two to three areas; B.Ed. (Hons) graduates and Diploma-LSAs four to seven or four to 14 areas, indicating that these seem to be the two courses which most cover aspects of early literacy.

Figure 2. Aspects of literacy topics areas covered during formal training
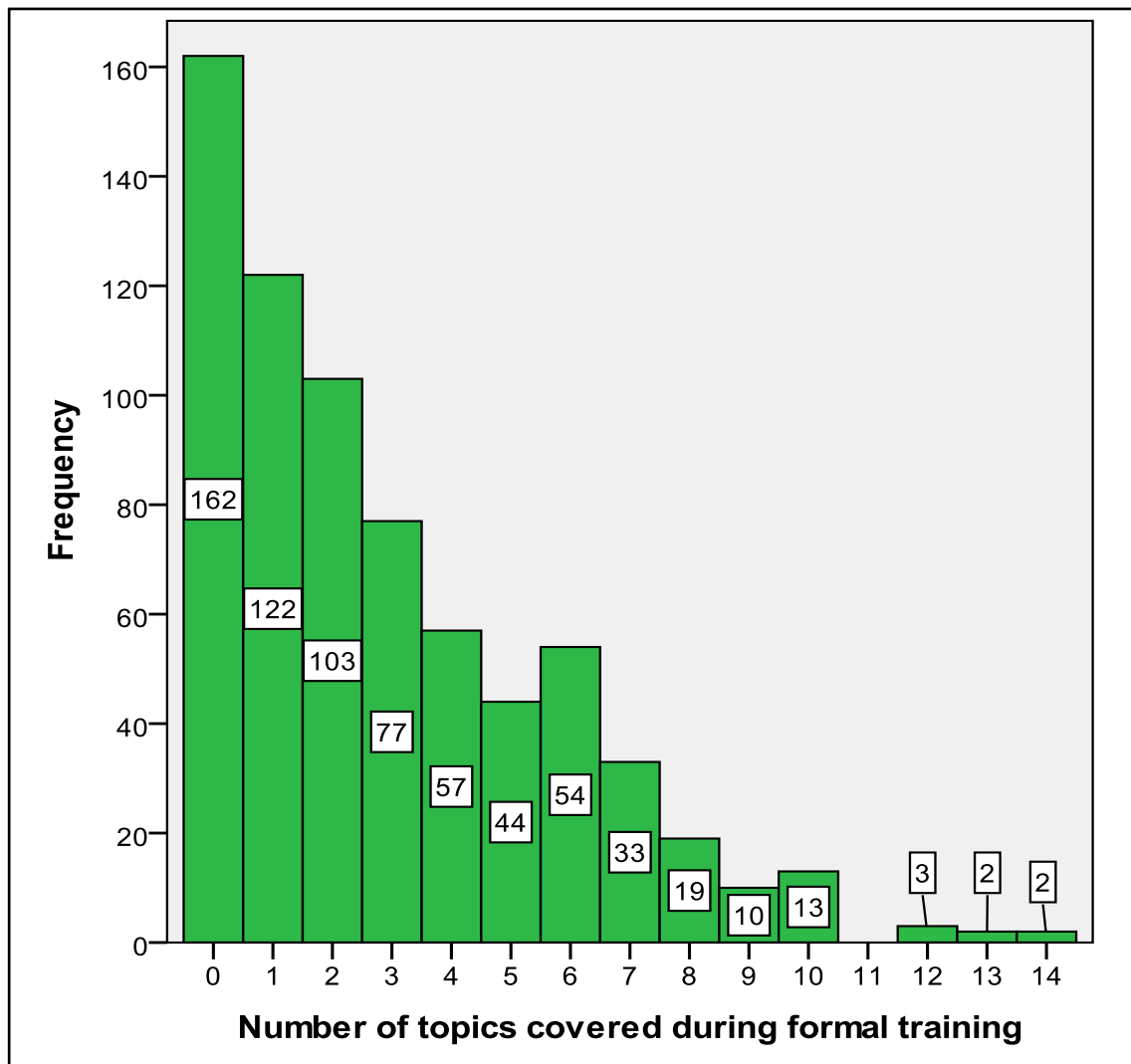
One tends to query why there are divergences in responses across respondents with similar FT. This may be due to memory, engagement with course, different lecturers teaching across the years, changes in course content, specializations and elective modules followed. It may also reflect the possibility that not a lot of importance was given to this area of training and it was therefore forgotten.

When analysing the specific areas identified by respondents during FT, most respondents referred to learning support, multisensory approaches (MSA), reading difficulties, strategies for reading, the National Minimum Curriculum (NMC), Whole Word Approach (WWA) and paired reading (Figure 3). Fewer respondents referred to specific theories of reading such as top-down approaches, bottom-up approaches and the Interconnectionist Model of Reading, and to specific techniques of teaching reading, such as phonics.

Figure 3. Preparation to teaching aspects of early literacy during formal training
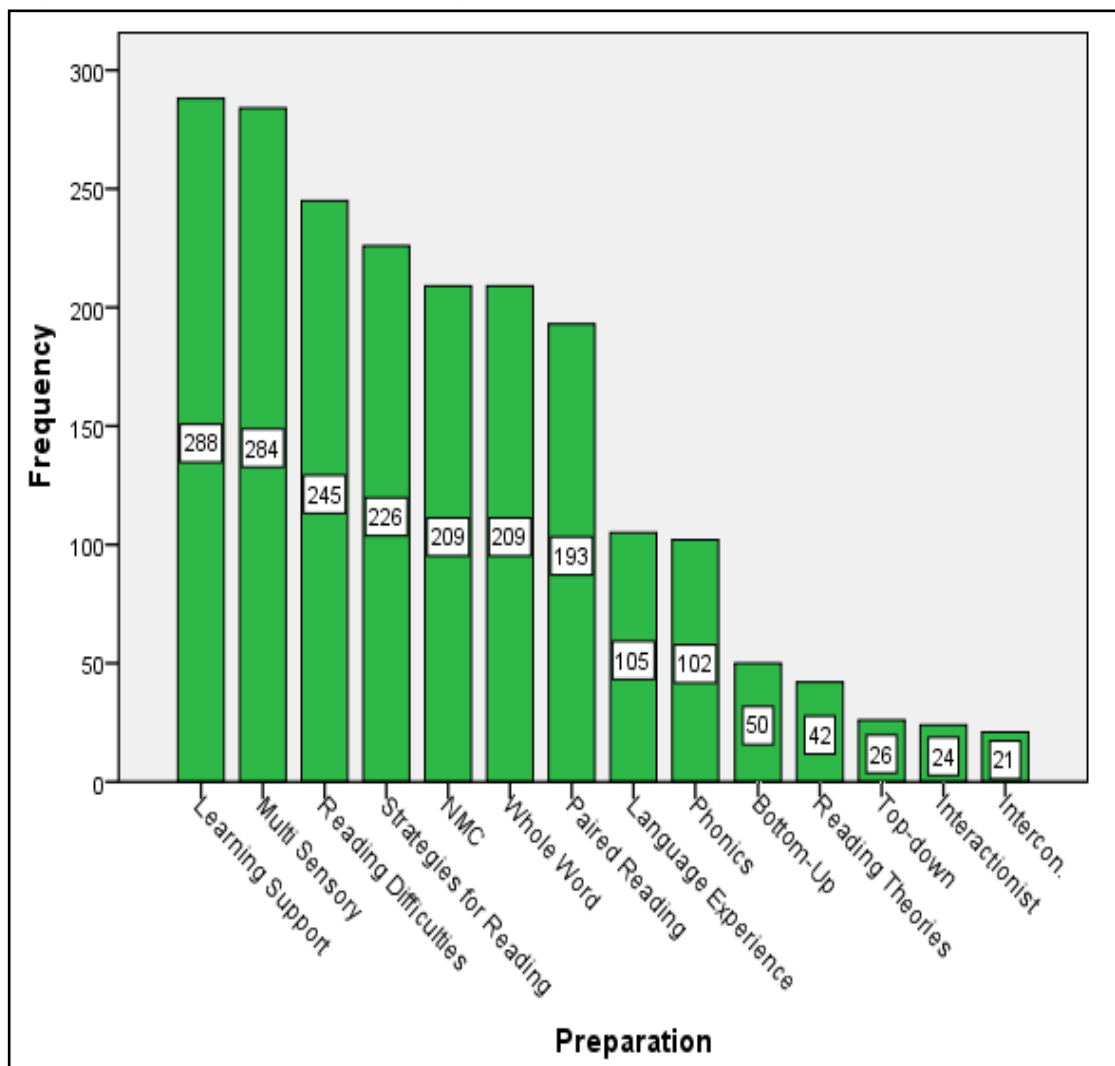
Table V3 indicates that Diploma-LSAs (78.8%), Certificate-LSAs (63.0%), KG-graduates (52.4%) and B.Ed. (Hons) graduates (51.4%) mostly noted exposure to MSA. Respondents who followed 'other' courses (44.0%) (which usually include small courses run by the university or by the Ministry of Education) and MATC-graduates (19.0%) indicated least exposure to MSA. Here one also needs to take into consideration what respondents were understanding by MSA. Results discussed below indicate that, for most respondents, the term '*multisensory approaches to reading'* meant the use of more than two senses as opposed to structured multisensory literacy instruction (SMSLI).

B.Ed. (Hons) graduates noted that they were mostly exposed to Reading Difficulties (67.6%), NMC (64.9%), paired reading and learning support (62.2%), strategies for reading (56.8%), WWA (54.1%), MSA (51.4%), reading theories (40.5%); and least to the Language Experience Approach (LEA) (16.2%), Interactionist Approaches (16.2%), Bottom-Up (10.8%) and the Interconnectionist Model of Reading (8.1%). These results infer a number of observations and queries. The analysis of the local Initial Teacher Training (ITT) indicates that primary school teacher trainees, in spite of asserting that they had been exposed to reading theories (Top-down approach), as also indicated in their course descriptions, were unaware of LEA.

This could mean that (a) they were only exposed to the theory and were not introduced to LEA or (b) that this was mentioned too briefly to be taken on board. Similarly, the validity of the answers may be supported by the fact that they indicated least exposure to Interactionist Approaches and Adams' Interconnectionist Model which again tallies with the coursework and focus groups' analyses discussed in the next chapter. The Interconnectionist Model was mostly referred to by Diploma-LSAs (12.1%) and reflects its inclusion in their training programme. These respondents mostly mentioned learning support (86.4%), MSA (78.8%), reading difficulties (74/2%) strategies for reading (54.5%) WWA (54.5%), paired reading (50.0%) and the NMC (40.9%), and noted least exposure to reading theories (7.6%). Except for the B.Ed. (Hons) graduates group, exposure to reading theories was poor in all the groups (0 -

21.2% range). This analysis may lead one to infer that teacher respondents perceive ITT as tending to focus more on theories and policies whilst the Diploma in Facilitating Inclusive Education places more emphasis on practice.

KGAs then noted most exposure to MSA (52.4%), learning support (47.6%) reading strategies (33.3%), the NMC (23.8%) and Phonics (22.2%), and least exposure to reading theories (1.6%- 9.5%). Generally the BA-BA (Hons)/PGCE (BA-PGCE) graduates noted least exposure to any of the areas, and MATC group noted least exposure to reading theories (less than 1%).

Perception of Effectiveness of FT with Regard to Early Literacy Skills

Respondents were specifically asked if they felt that their FT had prepared them to teach early reading effectively. 111 (15.8%) respondents opted not to answer this question. Of the remaining ones, (53.2%) agreed with this statement, 26.1% were unsure and 20.7% disagreed. Differences between these three possible answers are statistically significant (Table 11). When one compares perception of effectiveness of training with age groups (Table V4), one notes that the older the respondents the less sure they were about their training. The youngest group seemed to be most confident that they were effectively prepared, and statistical differences are noted (p-value =0.049). Except for the youngest group, a similar profile to the general profile explained above is noted across age groups, and percentage differences between age groups become marginal and not significant.

Table 11. Differences in perception of effectiveness of formal training (FT)

Perception of effectiveness of FT				Difference	P-value
Agree	53.2%	Disagree	20.7%	32.5%	<0.0005
Agree	53.2%	Unsure	26.1%	27.1%	<0.0005
Disagree	20.7%	Unsure	26.1%	5.4%	0.0287

Table V5 and Figure V2 indicate that although LSAs (57.2%) mostly agree and teachers (51.3%) least agree that they were effectively prepared to teach early reading skills, this difference, although considerable, is not statistically significant (p=0.078) across professions.   Perception of

effectiveness of FT therefore indicates no statistical differences across professions.

Table 11 in Appendix M reveals that professionals were trained differently. For example, only 37 (26.1%) of the 142 teacher-respondents were B.Ed. (Hons) graduates, 47 (33.1%) indicated attending a series of short courses (other). These would have been awarded their warrant through the then 15-year experience clause, whilst 15.5% were MATC graduates. This age range of this latter group is now at around 57 years. MATC training ceased in 1977 and was replaced by the B.Ed. (Hons) route. Given that, in the local context, preparation to become a primary school teacher is now through a B.Ed. (Hons) Primary course, and given that it does not seem likely in the near future that the alternative PGCE route would be considered - as had happened for a period of three academic years (1990-91, 1997-1998, 1998-1999) - I felt it important to analyze perceptions across FT profiles, with particular stress on ITT.

Table V6 indicates that 62.2% B.Ed. (Hons) graduates agreed that their FT prepared them to teach early reading skills effectively, 21.6% disagreed and 16.2% were unsure. MATC-graduates yielded a similar profile: 63.6% agreed, 22.7% were not sure and 13.6% disagreed that their FT prepared them adequately.   Table V6 also indicates significant differences across FT profiles. Diploma-LSAs were more likely to agree that their training prepared them to teach early literacy. These respondents are exposed to two study units during this training - INE1707 Introducing Literacy and Mathematics and their Challenges, and INE1719 Including Students with Learning Disabilities which specifically covers SMSLI. Conversely, the BA-PGCE group or those who entered their profession without having had any training and then participated in Continued Professional Development (CPD) - 'other' - were least likely to agree that their FT prepared them effectively. One may therefore infer that respondents understood the need for organized FT courses, since Diploma-LSAs, B.Ed. (Hons) or MATC-graduates were more likely to be satisfied with their FT effectiveness. 226 respondents had either missing information in the training classification or did not answer this question of the questionnaire.

When one compares the number of areas covered during FT and perception of effective preparation (Table V7 and Figure V3), one notes that, in general, there is positive relationship. As the amount of FT areas indicated increases, so does the percentage of 'agree' with regard to the statement: *I feel that my FT as a Teacher/Kindergarten Assistant/LSA has prepared me to teach early reading skills effectively.* Whereas, across the board, for each number of areas ticked the percentage of 'agree' was always higher than the percentage of 'unsure' or 'disagree'; the percentage difference among these three options increased as more areas were indicated. For example, whereas 76.0% and 64.3% of respondents indicating eight to 14 areas and six areas respectively noted satisfaction, only 40.0% who indicated no areas, 37.9% who indicated one area and 44.8% who indicated two areas noted satisfaction with their FT. This then goes up to 59.3% to 76.0% for respondents who respectively ticked four areas or more (Table V4 and Figure 9). The inference seems to be that the more diverse and detailed the perceived FT, the more both theory and practice included in FT, the more likely respondents indicated satisfaction with their FT.

Figures V4 and V5 indicate that when one compares number of areas covered during FT with FT satisfaction across FT profile and age, a similar picture emerges. Figure V4 indicates that most B.Ed. (Hons) and Diploma-LSAs indicating eight to 14 areas were the most likely to perceive their FT as effective, whilst Figure V5 indicates that respondents between the ages of 22 and 30 years, followed by the 41 to 50 age group, exposed to between eight and 14 areas were the most likely to be satisfied with their FT programme. Conversely, in general, least satisfied with the effectiveness of FT were MATC graduates, Certificate-LSAs and the BA-PGCE group. Also, whereas the youngest group indicated most satisfaction with FT, they also indicate that they covered 0 to 4 areas of literacy. The concern inferred: Are they aware of what they do not know? Are they over-confident? Is their limited experience affecting their satisfaction with their knowledge base? Is their answer actually affected by a lack of knowledge: ignorance is bliss, as it were?

Perception of Preparation to Teach Specific Aspects of Early Literacy

Respondents indicated if they perceived themselves effectively prepared to teach ten specific aspects of early literacy teaching: phonological awareness, phonemic awareness, phonics, decoding skills, onset and rime, syllabication skills, Whole Word Approach (WWA), rule learning, paired reading and Language Experience Approach (LEA). A 5-point Likert scale, then reduced to a three-point scale for easier statistical analysis, was used. Statistical difference across professions is indicated in these ten aspects of early literacy (Tables V8 to V18). Table V19 displays mean rating scores (from 1 to 3) and standard deviation for each perception categorized by teaching post; whilst the line graph Mean scores in Figure 4 clearly indicates that in all areas of literacy teachers always felt most prepared and, with the exception of LEA, KGAs felt least prepared.

Figure 4. Perception of adequate preparation in specific areas of literacy
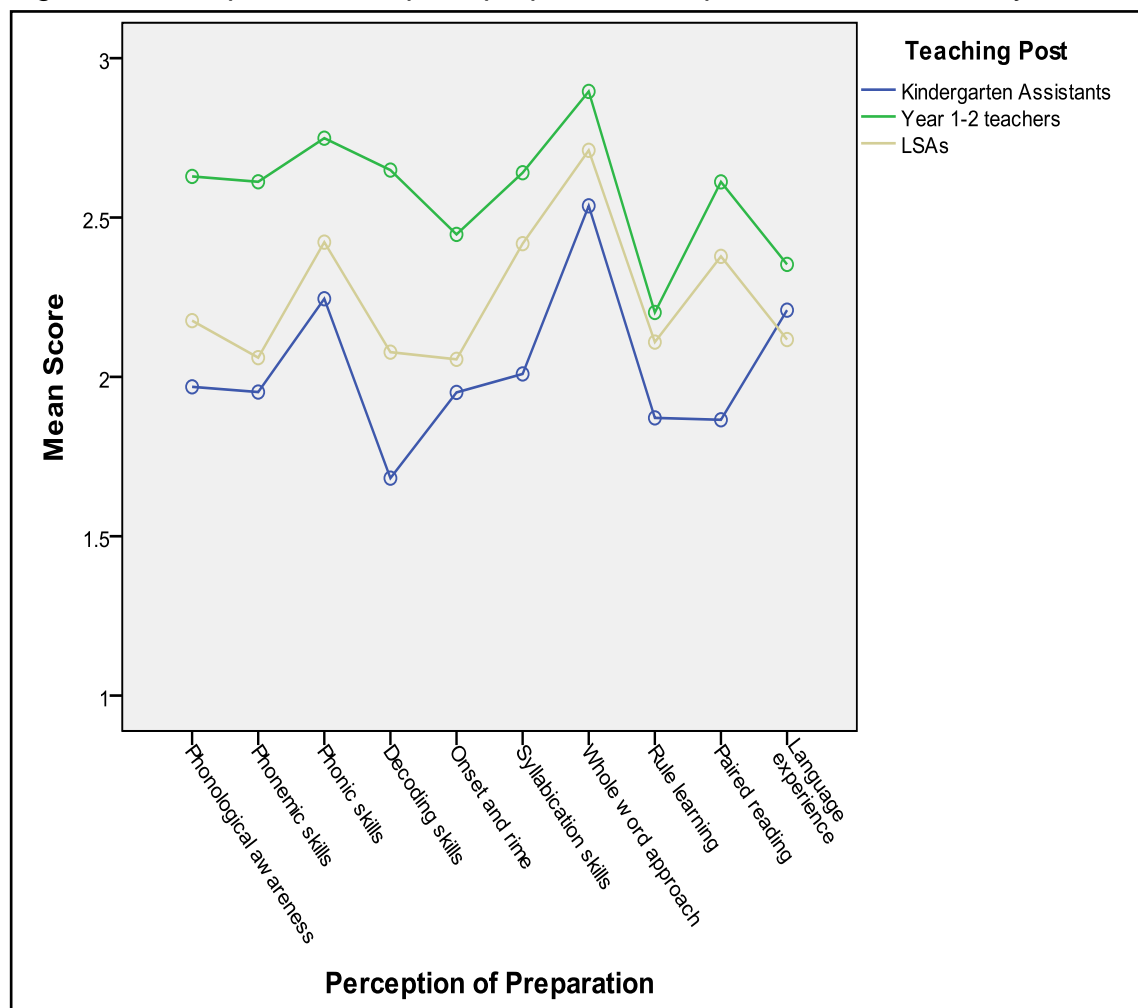
Table V20 shows the differences between these mean scores and their corresponding p-values, whilst figure V6 displays the corresponding 95% confidence intervals.   In general, respondents across the three professions felt most prepared to address WWA and phonics; and were least prepared to address rule learning and LEA.

Highest mean scores were recorded for WWA (2.75), phonics skills (2.52), syllabication (2.43). Decoding skills is the area which indicates most divergence of perception across professions, particularly between teachers and KGAs, followed by differences between LSAs and teachers. This may also reflect lack of knowledge of terminology as phonics form part of decoding skills. Teachers were most confident to address WWA (Mean 2.90) and phonics training (Mean 2.75); and least confident in rule learning (Mean 2.20), LEA (Mean 2.35) and onset and rime (Mean 2.45). Rule learning is mostly associated with SMSLI (Hall & Moats, 1999; Moats, 2000), whilst a lack of knowledge of professional terms – also addressed during SMSLI training - seems evident. Understanding of terminology is queried, as discussed below. For example, onset and rime is a practice teachers engage in, and LEA is encouraged in the primary school language syllabi as well as in national policies and strategies for core competencies in primary education (DQSE, 2009). Yet, teachers perceived themselves least prepared in these areas.   LSAs indicated a similar hierarchical profile to teachers. On the other hand, KGAs felt most confident addressing WWA (2.54), phonics (Mean 2.25), LEA (Mean 2.21), syllabication (Mean 2.01) and least confident with decoding skills (Mean 1.68) and paired reading / rule learning (Mean 1.87). Significant differences between KGAs and teachers is found in all the areas except for LEA; between teachers and LSAs in all areas, except for rule learning; and between KGAs and LSA in decoding skills, syllabication skills, rule learning, WWA and paired reading. These results seem to reflect local practices and CPDs. Between 2004 and 2008, the Ministry of Education focused on the programme 'Jolly Phonics' (Lloyd, 2000). Service Manager Marthese Cini M.Ed. from the Directorate for Education Services (Inclusive Education Section) was asked to give training sessions in all schools.

Comparing Perception of FT with Preparedness to Address Early Literacy Aspects

The perception of effective preparation per specific area of literacy skills teaching is not congruent with the general perception of effective FT (Table V5), where 51.3% teachers, 52.6% KGAs and 57.2% LSAs perceived their FT as being effective and differences were insignificant. One must here also consider what is requested by the NMC (1999). The Kindergarten syllabus indicates pre-reading skills such as recognition of letters, WWA, book management and storytelling, but not letter-sound correspondence or decoding (Attard, 2002). KGAs may have been perceiving reading skills as WWA and perhaps LEA (NMC requirements), in which case the respective percentage who replied in the affirmative for each of these two areas, 70.6% and 46.5% respectively, is reflective of the practices on the island. However, whereas the Kindergarten syllabus should address phonological awareness, only 31.3% agreed that they felt adequately prepared in this area as compared to their 52.6% overall satisfaction. Again, this may be due to a lack of familiarity with technical and professional terminology or to a lack of training or inability to address such a skill in class which may then have ramifications for later learning.

The role of the LSA is to support teachers, and therefore LSAs may have felt adequately generally prepared but then indicated lack of preparation for specific areas when asked for this detail. Moreover, their answers may have been affected by the children with a 'statement of needs' (Legal document to indicate need for support in class with the presence of an LSA) that they support in class, in a context where locally students with a profile of specific reading difficulties do not get a 'statement of needs'. Teachers, on the other hand, are immersed in teaching reading, and consequently they may have been more aware of their needs with regard to areas of literacy and more exposed to these aspects of literacy, and therefore perceived themselves as more prepared in each of the ten areas than the other two professionals groups (Figure 10).

Whereas generally more than 50% of the respondents felt that their FT prepared them effectively, when asked to refer to specific areas the majority did not feel so well-prepared in areas usually associated with SMSLI. This raises a

number of possible inferences and questions. First of all, my hypothesis and the running theme of this research - *they don't know they don't know* - comes to mind. Within their paradigm and parameters of knowledge and skills of reading, more than 50% of the respondents perceived themselves as prepared, but when faced with specific areas, some of which they were possibly not familiar with, they indicated lack of preparation. Secondly, this may support the questionnaire's validity and reliability; and, thirdly, one questions whether respondents are actually practising these areas of teaching but are not familiar with the academic and scientific terminology. This may indicate lack of in-depth technical, theoretical and academic knowledge, and preparation of the area during FT. Furthermore, one queries: to what are respondents gauging their answer regarding effectiveness of general preparation? Comparing against how they were taught how to read as pupils? Comparing against what they presently know about literacy? Against what they thought was expected of them to answer? Against what they think they should know? With or without awareness of SMSLI? Or just guesswork?

Significant differences between professions in the specific areas deemed as important in SMSLI are noted, namely in the areas of phonological awareness, phonemic awareness, phonics skills, decoding skills, onset and rime, syllabication and rule learning. Exceptions include the perceptions of KGAs and LSAs with regard to phonological awareness (p-value 0.062); phonemic skills (p-value 0.466); phonic skills (p-value 0.077); onset and rime (0.514); and the perception of teachers and LSAs with regard to rule learning (0.535). With regard to paired reading, one finds statistical differences across the three professions, whilst no statistical difference for LEA between KGAs and LSAs is evident (Table V19 and Figure V6).

Tables V21, V22, V23 and V24 compare perceptions of FT effectiveness and non-effectiveness with perception of adequacies and inadequacies to teach specific areas of literacy. Table V21 indicates that whilst 53.2% of the respondents felt that their FT prepared them effectively to address early literacy, this percentage always increases when this cohort indicated their perception of preparedness to teach specific skills involved in early literacy. These differences

in perceptions are significant in three areas: phonological awareness (64.4%; p=0.0036), phonemic awareness (62.7%; p=0.0177) and phonics skills (61.1%; p=0.0492); and are almost significant with regard to LEA (61.1%; p=0.0598). Respondents who noted perceived effectiveness with FT were more likely to feel also prepared to address these four aspects of literacy. Table V22 presents differences between respondents' perception of ineffective FT (20.7%) and their perception of lack of preparedness to address specific areas of literacy.

Perception of lack of preparedness to teach specific areas increases considerably when compared to the general perception of ineffective FT. For example, 40.2% noted that they felt ill-equipped to address onset and rime (p=0.0001) and 38.4% felt unprepared to teach phonological awareness. Differences between general perception of ineffective FT and perceptions of lack of preparedness in specific areas of literacy are significant for all the areas, except for WWA, rule learning and paired reading.

When comparing respondents who perceived their FT as ineffective (20.7%) but still felt adequately prepared to address specific areas of literacy skills (Table V23), the latter always indicate a percentage lower than 20.7%. These differences are not significant except in the case of Phonological Awareness and LEA. One further notes that WWA, Onset and Rime and Syllabication indicate the highest percentage of respondents who felt prepared to address these techniques in spite of indicating ineffective FT. It is pertinent to note that historically the WWA was used to teach English literacy and Syllabication to address Maltese literacy, so respondents may be using their own childhood experiences to address literacy in the classroom. On the other hand, in spite of perceptions of ineffective training, 15.0% perceived themselves prepared to address phonological awareness. One is here reminded of the government's CPD training in all schools for the Jolly Phonics Programme (Lloyd, 1998) as the main English early literacy programme to be used. CPD training may have had a positive effect on some respondents. It is also clear that respondents are not familiar with SMSLI methods and terminology. Consistently, areas usually presented during SMSLI training indicate less agreement. From this one can make a number of inferences: (a) respondents who perceived

themselves inadequately prepared for teaching reading during FT may also have been aware that were not able to address specific areas of literacy; (b) respondents may be answering with a lack of information, or through the hypothesis of the research question: that they do not know what they should know; (c) were respondents tempted to look up terminology following completion of this questionnaire?

Table V24 compares respondents who perceived their FT as being effective but still perceived themselves as not being prepared to teach specific areas of literacy. This time around, general positive perception towards their FT was consistently higher than perception of lack of preparedness to teach specific areas of literacy. All differences are significant except for rule learning, which just exceed the 0.05 criterion (p=0.0502). Respondents who perceived themselves as having gained effective FT perceived themselves as being better prepared to address phonological and phonemic awareness, phonics and WWA (23.0% - 27.6%), and were least prepared to address rule learning (42.0%), paired reading (35.7%) decoding skills (30.8%) and onset and rime (30.5%). These differences in perceptions may reflect patchy information during FT and CPD courses. This was also referred to by focus group participants.

Tables V25 to V34 give detailed information for each area of literacy. These tables further reveal that a considerable number of participants were actually unsure of their preparation to tackle particular areas of literacy. From this one may again infer a lack of scientific knowledge about teaching literacy and possible "knowledge" based on intuition. A comparison of perception of FT with each area of preparation experienced during FT (Table V35) indicates that there is no association between an area of preparation exposed and perceived effective FT. Irrespective of the area of preparation selected, 45.6% to 60.6% agree that Formal Training was effective (p value = 0.989). Except for Interconnectionist Model of Reading (40.0%), Interactionist Models of Reading (35.3%), and LEA (33.3%), between 18.2-28.0% are unsure of the effectives of their FT. Also, except for Interconnectionist Model of Reading (11.8%) and Interactionist Models of Reading (10.0%), between 15.8-27.1% disagree that their FT was effective when compared per area of preparation. Although

differences are not significant, one may infer that those exposed to the model of reading which refers directly to SMSLI may be more sensitized to a need for more knowledge and training.

Comparing Perception of Present Early Literacy ITT with Personal FT

Apart from being asked whether their own FT had prepared them effectively, given that we are referring to different professional training programmes - ITT, KGA- and LSA- training - and given that teachers are mostly responsible to address early literacy, respondents were also asked if they thought that the present local ITT provided adequate preparation for trainee teachers to teach early literacy. Respondents were either significantly unsure about the adequacy of present ITT training or thought that they had been significantly better prepared than present ITT. Table 12 indicates that 36.4% more respondents were unsure to a significant degree about the quality of present ITT when compared to their own FT (z = 7.623; p-value <0.0005), and 10.7% less significantly agreed that present ITT prepares teachers to teach early reading skills when compared to the perception of their own training (z = 2.471; p-value 0.0134). The 7.0% difference in perceptions of disagreements was then not significant (z = 1.275; p value = 0.2024).

Table 12. Comparing perceptions: effectiveness of personal to present ITT

Perception of effectiveness of own FT (111 did not answer this question)			Perceived effectiveness of present ITT (176 did not answer this question)			Difference
	Frequency	%age		Frequency	%tage	Percentage
Disagree	122	20.7%	Disagree	72	13.7%	7.0%
Unsure	154	26.1%	Unsure	230	62.5%	36.4%
Agree	314	53.2%	Agree	223	42.5%	10.7%
TOTAL	590	100%	TOTAL	525	100%	Difference

This trend is also perceived when analyzed across FT profiles (Table V36). The proportion of respondents agreeing on the effectiveness of their own training was always higher, except for Certificate-LSAs. Perceptions varied considerably between these groups,   reflecting that various professions are

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exposed to different content during their FT, leading them to perceive ITT effectiveness differently.

Given that locally there is presently only one route to becoming a primary school teacher, it was considered important to specifically examine the difference of opinion between the categories of teacher training: present (B.Ed. (Hons) Primary) and past (MATC) preparation. 62.2% B.Ed. (Hons) graduates (Table V6) agreed that their own FT prepared them to teach literacy, but only 42.9% perceived present ITT as providing adequate preparation. This 19.3% difference in opinion is considerable but not significant (z = 1.670; p= 0.095) and may indicate that B.Ed. (Hons) graduates either gained knowledge and experience on the job after graduation or possible through perceived negative changes in the ITT programme. Similarly, whereas 63.6% MATC trained teachers agreed that their own FT prepared them to teach literacy, only 42.9% perceived present ITT as adequate. This 20.7% difference in opinion is also not significant (z = 1.390 p=0.165). Difference of opinion was therefore considerable for B.Ed. (Hons) graduates and not significant for the MATC group. B.Ed. (Hons) graduates mostly disagreed that present ITT provides adequate preparation to teaching literacy (31.4%) whilst 21.6% disagreed that their own FT prepared them effectively to teach early literacy. This 9.8% difference in opinion is not significant (z=0.946, p=0.344), and concurs with the non-significant difference of opinion in the general cohort of respondents (p value = 0.2024).

15.8% more BA-PGCE respondents felt more confident about the adequacy of their own FT (44.4%) when compared to their perception of present ITT (28.6%), but degree of variation was not significant (z=1.232, p=0.218). The difference of opinion in respondents who had read the two-year KG-course and Diploma-LSAs is then significant. KGA-trained respondents perceived their own FT as significantly better than their perception of present ITT (z=2.449; p=0.014); likewise the Diploma-LSAs (z=2.328; p=0.020).

Less Certificate-LSAs perceived their own FT (47.5%) as being more adequate than the present ITT (53.2%). This difference of opinions is not

significant (z=0.584; p=0.584). Conversely, more (69.2%) Diploma-LSAs perceived their own FT more effective than ITT (49.2%). When one compares the difference in opinion between the two groups of LSAs, the proportion of Diploma-LSAs exceeds by 21.7% the proportion of the certificate-LSAs who agreed that their own FT was adequate. Conversely, with regard to their opinion of present ITT, the proportion of Diploma-LSAs who agreed that ITT is adequate (49.2%) is less by 4% than the proportion of Certificate-LSAs (53.2%). This difference between perception of Certificate-LSA graduates and Diploma-LSA graduates is quite revealing. Historically, the four-semester 52-week Diploma in Facilitating Inclusive Education was always run by the Programme for Inclusive Education within the Department of Psychology at the Faculty of Education, University of Malta (first cohort 1995), whilst the 20-week Certificate in Education for LSAs is run by the Student Services Department within the Directorate for Educational Services and was for a couple of times also run as a year certificate by the UoM Faculty of Education. The detailed analysis in the literature review of the programmes of these three courses reflects more input on SMSLI in the Diploma Course. Furthermore, Diploma-LSAs consistently scored better on areas of preparation as well as linguistic knowledge, as will be explained below. Conversely, the BA-PGCE respondents were the group who had most conflicting as well as significant results with regard to disagreement to the two statements: whereas 25.9% of these graduates disagreed that their own FT prepared them effectively for teaching early literacy, only 3.6% disagreed that ITT provided adequate early literacy teaching preparation (z=2.44, p=0.014). One may infer that these respondents appreciate the value of ITT for effective early literacy teaching.

Respondents were more likely to be significantly unsure if present ITT training was more effective than their own training. KG-trained and Diploma-LSAs were likely to perceive their own training as significantly better than present ITT. Conversely, Certificate-LSA respondents were likely to agree that present ITT was better than their own. As discussed above, the issue of understanding of terminology comes in particularly with reference to KG-trained, as their course does not indicate, as opposed to the Diploma-LSA coursework, direct reference to SMSLI.

Classroom Practices

Respondents were asked what techniques they used to address early literacy skills in the classroom. A list of 16 possible early literacy techniques was provided. In general, most respondents indicate the use of no, or up to four, techniques (47.2%), followed by five to nine (32.0%), ten to 12 (13.6%) and 13 to 16 (7.3%). Results indicate that Year 1 teachers noted most diverse classroom practices followed by Year 2 teachers. Most teachers (42.4%) noted the use of between five to nine different classroom practices, whilst most KGAs (76.0%) and LSAs (50.9%) between zero and four classroom practices. Statistical difference across populations is noted (Table V37 and Figure V7).

When one compares number of areas used during classroom practices with FT-profile (Table V38 and Figure V8), a similar profile emerges, with some interesting difference. In line with data presented above, KGAs and respondents who indicated 'other' as their FT profile were more likely to use no to four areas in classroom practice, whilst B.Ed. (Hons) graduates (54.1%) and MATC-graduates (42.3%) were more likely to use between five and nine areas, when compared to the other profiles. BA-PGCEs indicated that they were the group who mostly used between 13 to 16 aspects (21.9%) followed by B.Ed. (Hons) graduates (18.9%) and MATC respondents (15.4%). More Diploma-LSAs (23.5%) than B.Ed. (Hons) graduates (21.6%) used between ten and 12 different aspects of classroom practices, but more B.Ed. (Hons) graduates (18.9 %) than Diploma-LSAs (10.3%) used 13 to16 areas of classroom practices. KGAs (2.4%), Certificate-LSAs (3.3%) and respondents indicating 'other' as a background of FT (2.1%) least used 13 to 16 areas. Again one notes a difference between Diploma-LSAs and Certificate-LSAs. The former were more likely to indicate use of more areas. Similar differences are noted between B.Ed. (Hons) graduates and MATC graduates. Differences across profiles are significant to a considerable degree. Given the respondents' perception of their preparation and the results of linguistic knowledge presented below, the concern over possible incorrect information given to children remains.

A comparison between number of classroom practices and age (Table V39 and Figure V9) indicates that the youngest and the oldest age groups used

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the least diverse areas of classroom practices; whilst those between 22 and 40 years noted most diverse classroom practices. This may reflect relatively better training and CPD over time as respondents grow in their profession. All age groups seem to mostly use between zero to nine different areas of classroom practices.

Table V40 and Figure 5 indicate the frequency and percentage of classroom practices presented in descending order of use. Respondents indicated that they used letter-sound correspondence (63.6%), phonics (55.2%) and Letter names (50.2%) the most, and least onset and rime (24.1%) synthetic phonics (13.1%) and rule learning (10.0%). Using the "Difference between two proportions" test, it was noted that a difference of 5% or more between two proportions resulted in a significant difference at the 0.05 level of significance.

Figure 5. Early literacy techniques used by respondents during teaching
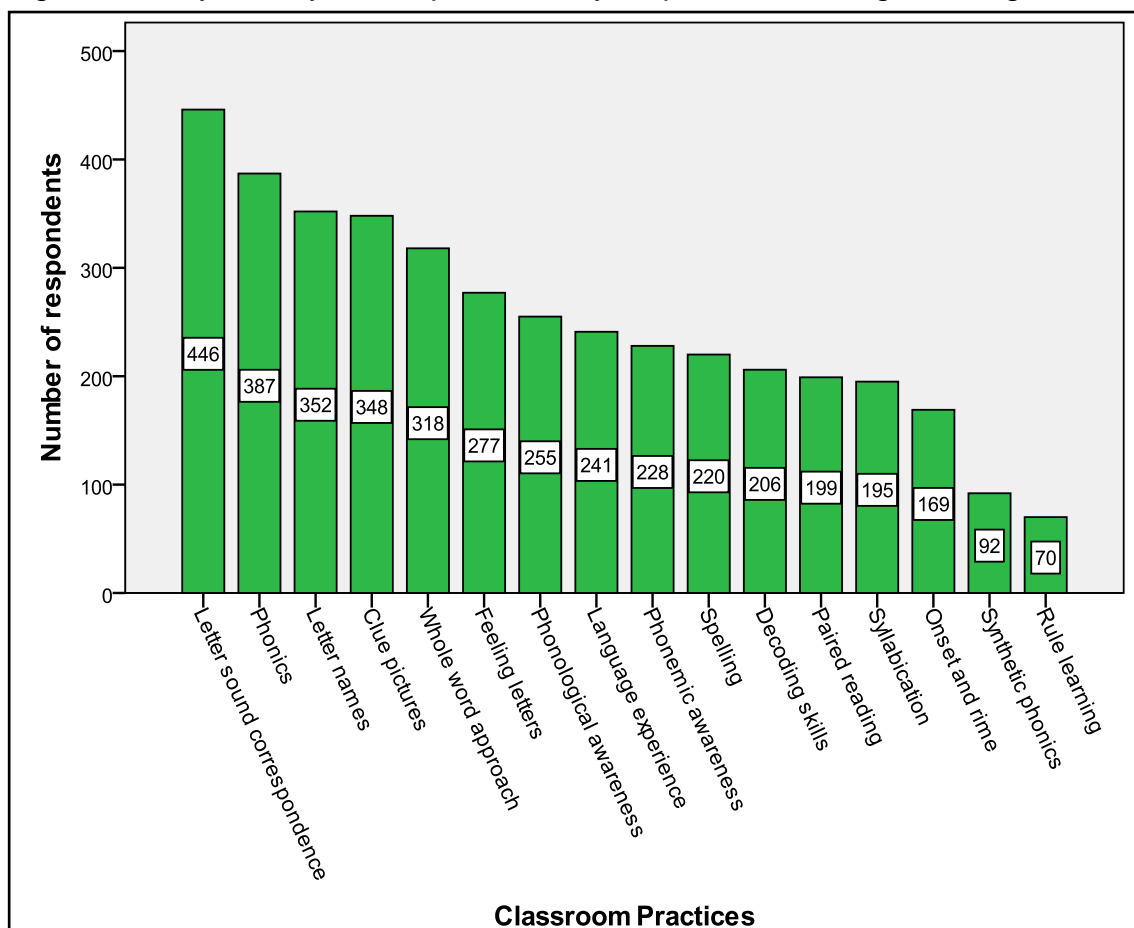
This partially reflects current practices on the islands. CPD for early education on literacy has been carried out by Service Manager Ms Marthese

Cini in connection with the Jolly Phonics Early Reading Programme (Lloyd, 1998). Even though one may disagree with the concept of presenting only ONE programme of reading which, in my opinion has a number of flaws (e.g. presenting letter sounds before letter names, insistence that letter sounds are recited before the word is dragged, and so on), one can infer that the style of training, which was ongoing and included support meetings (Binks, 2008; Podhajski, Mather, Nathan, & Sammons, 2009), seems to have had positive results at least on what professionals were exposed to and later decided to adopt in the classroom. One can only infer this as there is no previous research on knowledge prior to this training. Furthermore, this CPD may not have presented terminology and only focused on techniques to decoding, as already noted. Terms linked in to SMSLI scored low (e.g. onset and rime, rule learning).

55.2% indicated the use of phonics but only 29.4% indicated the use of decoding skills, again possibly indicating a lack of familiarity with scientific terminology. The lack of use of syllabication may again be an influence of the interpretation of the Jolly Phonics programme (Lloyd, 1998) which insists that on saying the sounds and then puts blending sounds together into a word. On the other hand, the Jolly phonics programmes (Lloyd, 1998) refer to synthetic phonics, and respondents still rated this as one of the lowest (13.1%) techniques they used. This raises a number of questions which will be discussed in the discussions chapter. It also brings to light arguments put forward by SMSLI researchers and practitioners - that teachers may be given superficial knowledge but not the needed linguistic structure (e.g. Moats, 2009). For example, rules of syllabication are important for the actual pronunciation of vowels (e.g. the short and long vowel sounds in closed and open syllables: e.g. 'not' as opposed to 'no' and 'noted'). One notes that the practice of rule learning also scored lowest (10.0%).

When one then compares across professions (Table V41 and Figure V10), teachers indicated that they used most of these areas of classroom practice, except for "feeling letters", where more LSAs indicated use. Alternatively, KGAs consistently scored lowest, except for LEA; whilst LSAs always scored between teachers and KGAs, except for "feeling letters", where

they scored most, and LEA where they scored least. There are areas of classroom practice where the percentage of use was similar across professionals (letter sound correspondence, feeling letters, clue pictures, letter names), and other areas where there was a lot of divergence (spelling, decoding skills, synthetic phonics, onset and rime) which again reflect the syllabi in the case of KGAs, the professional role in the case of LSAs, as well as respondents' patchy knowledge of scientific terminology.

Table V42 indicates a similar profile across FT-profiles. In general B.Ed. (Hons) graduates consistently noted that they used practices the most except for rule learning. BA-PGCE respondents also seemed to follow the trend of this group, except for some areas which B.Ed. (Hons) graduates tended to use more than the BA-PGCE group. These include letter sound correspondence, decoding skills and paired reading. Diploma-LSAs indicated that they use each area more than Certificate-LSAs, whilst KGAs indicated least use for most areas, except for "feeling letters", "clue pictures" and "LEA". The use of clue pictures was consistent across professions and across FT, except for Year 2 teachers who indicated that they use it less frequently. This reflects the required literary syllabus as, by the end of Year 1, children would have covered this topic and the clue picture would in general no longer be needed. Furthermore, B.Ed. (Hons) graduates seem to be most aware that decoding skills involves phonics, letter-sound correspondence, and indicate most use.

Most MATC-trained teachers claimed the use of phonics, letter sound correspondence, WWA, decoding skills, syllabication, spelling, clue pictures, letter names and language experience; less use is made of phonological awareness, syllabication, and least use of synthetic phonics, rule learning, phonemic awareness, onset and rime and feeling letters. Although no research in the area has been carried out to date, MATC teachers consistently verbally reminiscence on the practical aspects of their training (up to the late 1970s) which they perceive as missing from the present ITT. This seems to be in line with their classroom practices. On the other hand, they left out aspects of early literacy teaching linked with SMSLI. One must again note issues of lack of knowledge of scientific terminology.

In line with the profile of the number of areas of classroom practices used, Table V43 and Figure V11 indicate that the youngest and the oldest groups claimed that they used each aspect of listed classroom practices the least. This reflects both the profession and the training. As noted in the methodology chapter, most 18-21 years are KGAs (50%) or LSAs (46.2%). Only one claimed to be a teacher, and her profile indicated no training. None of this age group claimed to use paired reading, phonemic awareness, synthetic phonics, decoding skills as classroom practices, and most used feeling letter, clue pictures and letter names, in line with their profession. On the other hand, the oldest group (>50 years) are again mostly KGAs (41.8%), LSAs (22.1%) and teachers (22.5%) trained by the MATC or had followed the first three cohorts of B.Ed. (Hons), when the primary and secondary track were not yet separate courses. This oldest bracket indicated the use of phonics, letter sound correspondence, feeling letters, WWA, clue pictures, letter names and LEA most. They are also the age group which least noted the use of rule learning. Respondents aged between 22 and 50 years reflect statistics explained above with regard to FT and profession.

This section of the questionnaire (classroom practices) yielded information with regard to profiles of training and perception of training and preparedness. In general, teachers felt most and KGAs least prepared to address literacy in the classroom as well as using diverse teaching methods. Professionals are then not so sure about their preparedness when referring to different aspects of early literacy. The results yield uncertainties and lacunae of information across the three professions. Furthermore, professionals, particularly teachers, may be using techniques without the necessary linguistic knowledge or correct scientific terminology, and possibly are not aware of the actual raison d'être of such techniques. Professionals may therefore have been "'answering" to what they thought the terms meant (e.g. LEA). The next section will compare classroom practices with perception of preparation.

Comparing Classroom Practices and Perception of Preparation

Tables V44 to V54 present detailed comparative tables regarding perception of adequate preparation and actual classroom practice for specific

early literacy skills. Significant differences between perception of adequate preparation and classroom practice are noted in each of the early literacy skills addressed. Tables V55-V58 below present the data compiled for ease of read. Table V55 indicates that respondents who perceived themselves as adequately prepared to teach particular early literacy skills were significantly more likely than not to use them in their classrooms. Conversely, respondents who did not perceive themselves as adequately prepared were significantly more likely not to address these skills in the classrooms, with regard to all aspects of literacy except for two areas (Table V56). Differences for WWA and LEA were not significant at the 0.05 criterion.

Tables V55 and V56 continue to indicate that WWA remains the skill which respondents most felt adequately prepared for, actually used in their classroom, least inadequately prepared to use and least not used in their classrooms. With regard to WWA one can infer that respondents may have perceived an irrelevance of training as they could have remembered the techniques from their own school days and the inference with regard to LEA could be due to mis- or non-understanding of terminology. 68.6% who felt adequately prepared to address rule learning then also used this technique in class, whilst only 2.9% felt inadequately prepared and still noted that they used rule learning in the classroom. Of concern is that perception of adequate preparation and classroom practices exceeds correctness of linguistic knowledge - as detailed below. This infers lack of, incorrect or patchy knowledge about linguistic knowledge necessary to address early literacy effectively and correctly, and unawareness of this lack of knowledge. Significant differences again occur across the board when classroom practices are compared between respondents who perceived adequate preparation and respondents who were unsure about adequacy of preparation (Table V57).

Generally, respondents who were unsure about their preparation tended not to address the skill in the classroom (Table V58). Differences are only significant with regard to onset and rime, rule learning, paired reading and LEA, and considerable with regard to decoding skills. One can again infer that aspects which teachers could have "figured out" by intuition or from experience

(e.g. WWA and syllabication) or gleaning meaning of terminology from experiences (e.g. phonological awareness) indicated no significant difference.

Structured Multisensory Literacy Instruction (SMSLI)

This section will explore respondents' awareness and knowledge of SMSLI. In order to try and understand their exposure to SMSLI, respondents were not only asked if they were exposed to this aspect during FT, but were also asked if and how they were introduced to SMSLI (Table V59). In a context where 51.4% indicated exposure to MSA during FT (Table V3), 42.2% then noted that they first became aware of MSA to early literacy during FT and slightly more referred to the workplace (44.8%). Around a quarter of the respondents indicated in-service courses, CPD and the use of the internet, whilst 23.9% noted that they still needed to be familiarised with the subject. Respondents were significantly more likely to indicate exposure during FT than exposure (a) during CPD (p=0.0006) or in-service training (p=0.0108), (b) from colleagues (p=0.0002) or from the internet (p=0.0019), or noted that they had not yet been familiarized with MSA. (p=0.0004).

Looking at respondents who chose FT as their source of awareness (Table V60) one notes that most B.Ed. (Hons) and Diploma-LSAs noted awareness through FT and at the workplace; BA-PGCE noted a similar profile of awareness and also included in-service training. The use of the internet was one of the least noted by these three groups. MATC, Certificate-LSA and KG-trained graduates referred to the workplace as the place where most of them gained awareness, whilst Diploma-LSAs also referred to the workplace as a place of awareness. This information tallies with profiles discussed above in regard to preparation to aspects of early literacy. Few indicated sources other than what was listed.

Defining Structured Multisensory Techniques to Teaching Literacy

Respondents were asked to provide six words when they think of SMSLI as well as to define SMSLI. The results (Figure 6, Table V61 & Figures V12) indicate that professionals seemed to understand this term as the generic meaning of the term 'multisensory learning' - any learning activity, process or situation that includes the use of two or more sensory modalities simultaneously at the input and output stage of the learning process: visual, auditory, tactile, kinesthetic, taste and smell in the instructional setting (e.g. Turnbull, Wehmeyer & Turnbull, 2010). Specifically, "multisensory" in teaching literacy refers to techniques for beginning or struggling readers involving visual, auditory, tactile, and motor components embedded in a carefully sequenced programme based on the structure of language and linguistic knowledge (Moats & Farrell, 2005).

Figure 6. Analysis of defining words used
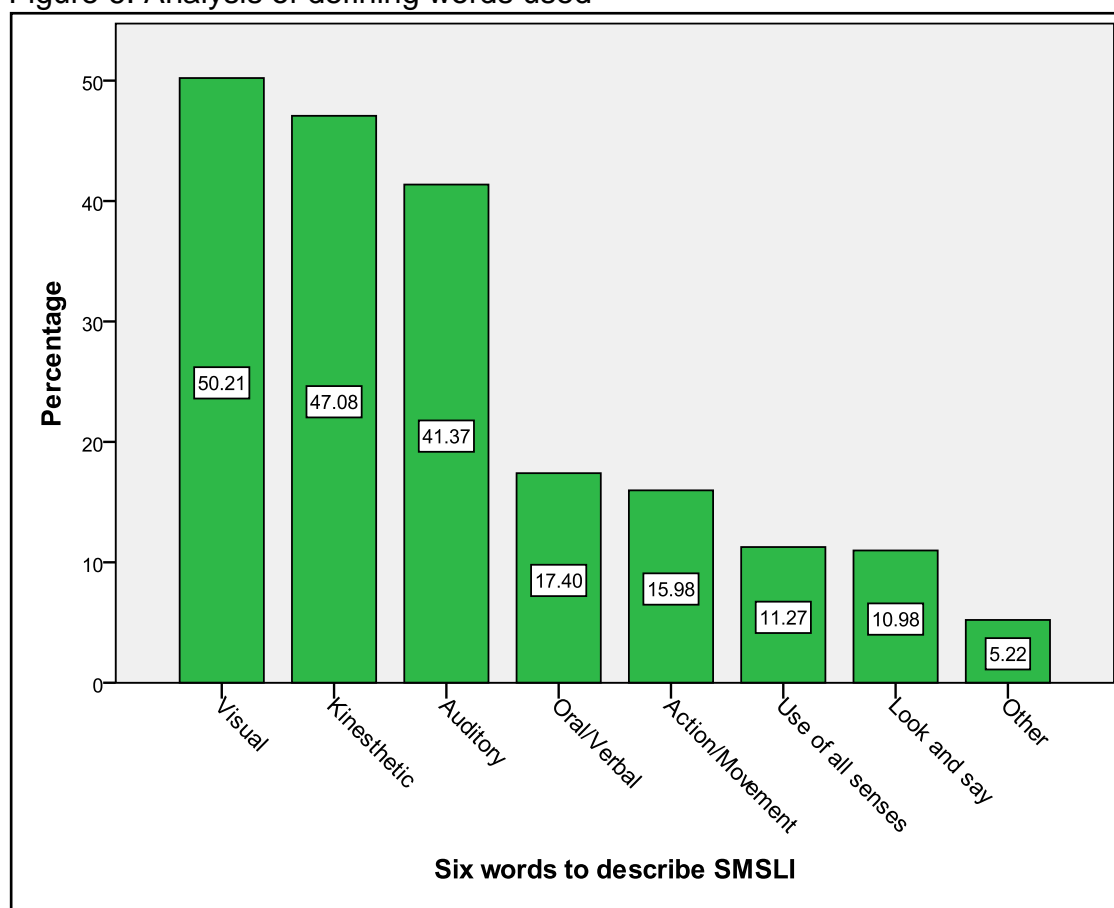
It is clear that, whereas professionals are conversant with the generic term multisensory, less than 9% of the respondents used words other than the use of all senses when referring to and in defining the term requested. This

infers a lack of sound theoretical and academic knowledge about this technique. One further notes that no respondent included the words *sequential*, *structure*, or *language knowledge*, all basic concepts with regard to such an approach. Most respondents presented the words visual (50.2%), kinesthetic (47.1%), auditory (41.4%), oral (17.4 %), action and movement (16.0%), use of all senses (11.3%) and look and say (11.0%). There is no significant difference between 'Visual' (ranked first) and 'kinesthetic' (ranked second) (p=0.4141) and between 'kinesthetic' and 'auditory' (ranked third) (0.1539). The percentage difference between 'Visual' (first ranked) and 'auditory' (third ranked) is statistically significant (p=0.0257) and between 'visual' and all other meanings ranked fourth and lower.

Each definition was analyzed according to correctness using the Moats and Farrell (2005) definition as a baseline: "Techniques for novice or poor readers that involve visual, auditory, tactile-kinaesthetic, and/or articulatory-motor components in the carefully sequenced teaching of language structure" (p. 24). Table V62 indicates that 168 (23.97%) decided not to answer this question; 245 (34.95%) gave a generic answer - the use of more than two senses (Table V63); 211 (30.10%) gave an incorrect definition (Table V64); 69 (9.84%) a partially correct definition (Table V65), whilst only eight (1.14%) gave the closest to a correct definition. Out of these eight answers (Table V66), I would only consider four of them as a truly correct definition (r203, r241, r551, r583). Three of these respondents are Diploma-LSAs and one a B.Ed. (Hons) Year 1 teacher (r583). Furthermore, these four respondents either ticked more than 10 areas of preparation during ITT (203), or chose Interconnectionist Model of Reading (241, 551, 583) as part of their FT. Differences between all types of answers are significant (p<0.0005), except for a considerable but not significant difference (p=0.0527) between generic and wrong answers. Maltese educators are therefore more likely to give a generic or an incorrect definition.

Table V67 and Figure V13 evidence that B.Ed. (Hons) graduates tended to either not give an answer (35.6%) or to give a generic answer referring to the use of all senses (23.4%). On the other hand, only one B.Ed. (Hons) graduate gave an incorrect answer, but also only one gave a mostly correct answer.

Conversely, MATC-graduates were more likely to give an incorrect answer (46.2%) rather than a generic answer (30.8%) or no answer (15.4%); whilst KGAs and those who indicated "other" as their FT profiles were the next two groups after the B.Ed. (Hons) graduates who were most likely to leave this question blank. Diploma-LSAs (14.7%) were more likely to give a partially correct answer; BA-PGCEs (50.0%) more likely to give an incorrect definition; and the Certificate-LSAs a generic answer (50.0%).

Perception of MSA Preparation as Compared to Perception of FT

When respondents were specifically asked about their perception of adequate preparation with regard to Multisensory Approaches (MSA) in teaching literacy, one notes that only a third of the respondents agreed that they were adequately prepared (32.84%). As it were, respondents seemed to be split three-ways with regard to this question (Table 13 and Table V68) as 34.87% were unsure and 32.29% perceived themselves as not prepared to use MSA in teaching early literacy. Table 11 above indicated significant differences with regard to different perceptions of effectiveness of FT. Conversely, no significant percentage differences are observed in perception of preparedness for MSA techniques (Table 14).

Table 13. Perception of adequate preparation to use MSA in teaching literacy

Perception of MSA in teaching literacy Preparation	Frequency	Percent
Disagree that they are prepared	175	32.29
Unsure if they are prepared	189	34.87
Agree that they are prepared	178	32.84
TOTAL (NB 159 did not answer this questions)	542	100%

Table 14. Statistical differences of perception of preparedness to address MSA

Perception of effectiveness of training for multisensory approaches				Difference
Agree	32.84%	Disagree	32.29%	p=0.9831
Agree	32.84%	Unsure	34.87%	p=0.5088
Disagree	32.29%	Unsure	34.87%	p=0.4802

When one analyses the respondents' perceptions towards MSA across teaching posts (Figure V14 and Table V69), one notes that Year 1 teachers disagreed mostly (45.7%) and KGA disagreed least (20.9%) that they were adequately prepared to address MSA. LSAs (38.0%) seemed to mostly agree

that they were prepared, and Year 1 (26.0%) least prepared to address MSA techniques. KGAs felt most unsure and Year 2 teachers least unsure about their preparation to address MSA, whilst the Year 1 teacher felt most prepared.

An analysis of the respondents' perceptions towards MSA across profiles of FT (Table V70) does not indicate significant percentage differences (p=0.490) across training profiles. One can here infer that B.Ed. (Hons) graduates seemed to be more aware of what they need to train in. One must again here keep in mind that most respondents defined MSA as the use of all senses, and this may then affect other scores in the questionnaire. Significant percentage differences are then observed when perceptions of FT are compared with perceptions of preparedness for MSA. Table V71 and Figure 7 indicate that respondents felt significantly less convinced (p<0.0005), significantly more uncertain (p=0.0014), and significantly less prepared (<0.0005) to address MSA than they were about their perception of effectiveness of FT.

Figure 7. Perception of MSA preparation compared with perception of FT
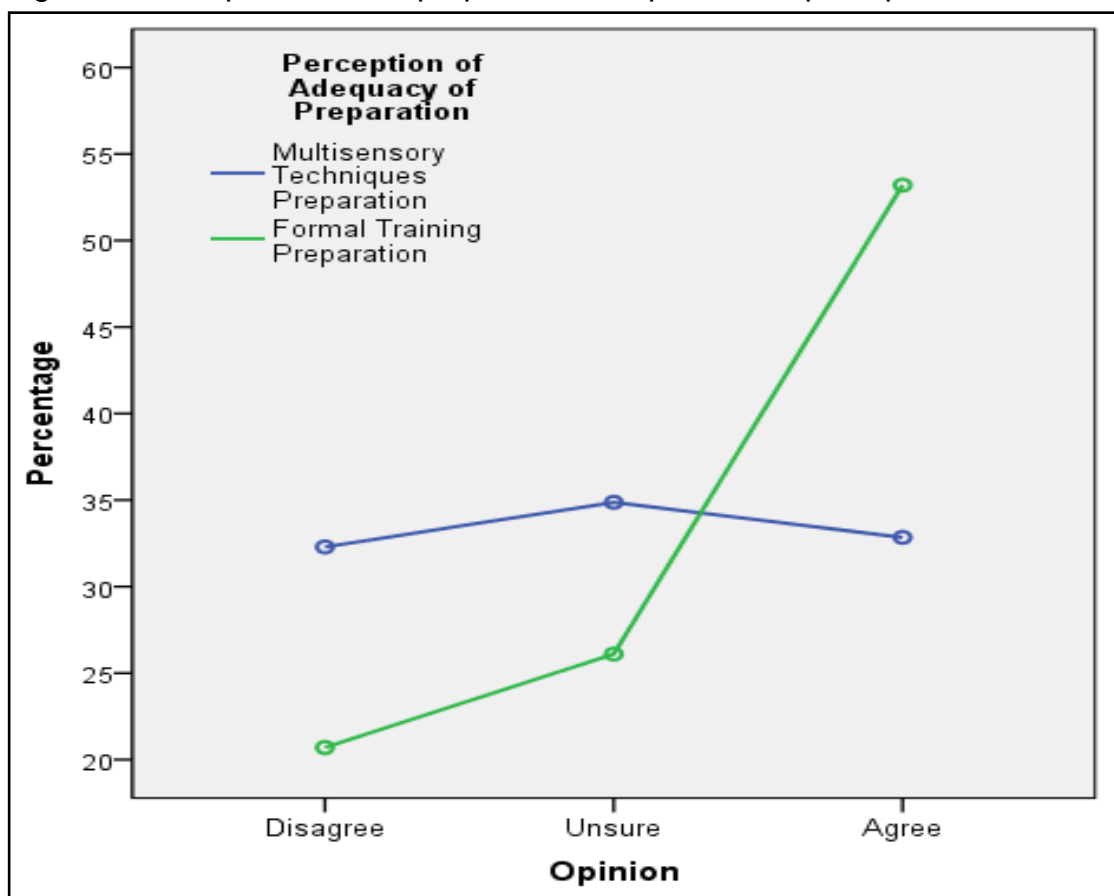
From this lack of uncertainty and perceived lack of preparation, one may infer that respondents were somewhat aware that their knowledge of SMSLI needed to be addressed. For example, whereas 4.9% disagreed that their FT prepared them and also felt unprepared to address MSA, 21.4% agreed that their FT was appropriate but still felt unprepared to address MSA, and 16.5% were unsure about their preparedness to address MSA in spite of agreeing that their FT was effective with regard to early literacy (Figure V15). Differences are significant and reflect perception with regard to teaching aspects of early literacy mostly linked with SMSLI (e.g. rule learning, onset and rime) discussed above.

Table V71, and Figure V16 compare the three professions' perceptions of the effectiveness of their FT and their perceived preparedness to address MSA techniques in early literacy. Whereas for the general population the comparison of perception of FT effectiveness does not yield a significant percentage difference (p=0.078), the difference when comparing professionals' perception of preparedness towards MSA is significant (p<0.0005). Each profession, as in the general population, was more confident (p=values between p<0.0005 and 0.0014) about its preparedness for general FT as opposed to its perception of MSA preparedness. KGAs were significantly (p<0.0005) more uncertain about their skills to address MSA than they were about their FT, whilst teachers and LSA were also less certain, but the difference was insignificant. Significantly, more teachers (p<0.0005) and considerably more LSAs (p=0.077) disagreed that they were prepared to address MSA than they disagreed about the effectiveness of their FT, whilst less KGS (20.9%) perceived themselves as not prepared to address MSA techniques as opposed to their perception of ineffective FT (23.5%). This difference is not significant (p=0.5429). (Table V72)

In short, KGAs were significantly more uncertain about their skills to address MSA than they were about their FT. The three professions were more likely to agree that they had been effectively prepared to address early literacy during FT than they were to agree that they were adequately prepared to address MSA. Teachers and LSAs were more likely to disagree that they were prepared to address MSA than they disagreed about the effectiveness of their FT (Table V72). The concern is that whereas, on a positive note, a substantial

number of respondents were aware they were not adequately prepared to address MSA, on a negative note, they still perceived their FT as adequate, indicating that they may not be aware of SMSLI.

Again, consistently across FT profiles, respondents perceived their FT more positively than their preparedness for MSA (Table V73). They were not as convinced about their skills to address MSA when teaching early literacy. Conversely, all, except for respondents indicating "other" as their FT profile, disagreed more that they were prepared to address MSA in the classroom, than their negative perception of their FT profile. With regard to age (Table V74), a similar pattern emerges: the level of disagreement and the level of uncertainty increases, whilst the level of agreement decreases when older different age groups' perception of MSA preparedness to address early literacy and perceptions of effectiveness of FT are compared.

The question that begs to be answered is: do respondents understand the meaning of this question in connection with SMSLI? Results indicate that most respondents own the generic meaning of "multisensory" in their repertoire, in spite of the term always being embedded in the phrase "multisensory techniques to teaching early literacy" in the questionnaire. These percentages also do not always tally with perceptions of adequate preparation in specific areas of literacy skills, possibly indicating patchy knowledge and skills and a generic rather shaky definition particularly with regard to the SMSLI context.

Moreover, one must keep in mind that even in a context where respondents were more likely to be referring to the generic meaning of MSA, they still felt less prepared to address this in the classroom than their perception of effectiveness of FT. This, on the one hand, raises further concerns with regard to the implementation of inclusive education in the classroom within the UDL paradigm framing this research study and, on the other, celebrates the fact that respondents seem to be aware of a need for more training. Notwithstanding, with regard to the relevance and importance of SMSLI, respondents overwhelmingly agree that SMSLI is an important tool in teaching early literacy (93.94%). Only two respondents disagreed with this statement, whilst another 32 respondents were unsure. Again, these results need to be

perceived and analyzed within the context of respondents' definitions of MSA in teaching early literacy.

Linguistic Knowledge - Analysing the Content

The third and last section of the questionnaire addressed linguistic knowledge which forms the basis of SMSLI. This section had three parts. The first section asked respondents to indicate whether they knew or did not know the meaning of terminology linked with SMSLI. The next two parts of this section then had a series of 48 items where each correct answer was weighted one point. Ten of the 48 items included in the second section required respondents to give examples of the ten terminologies they had indicated perception or knowledge of, or lack thereof. In the third part of this section respondents had to indicate the number of phonemes and graphemes of four Maltese and four English words, the short/long vowels of ten English words, as well as syllabise six English and six Maltese words. Table 15 indicates that most respondents were able to answer almost half of the items correctly, and only 21.3% could answer more than half of the items correctly.

Table 15. Total score correct of 48 items addressing linguistic knowledge

Linguistic knowledge	Frequency	Percentage
0 correct	134	19.1%
1-23 correct	418	59.6%
24-48 correct	149	21.3%

Figure 8 further indicates that most respondents answered 9 to 16 items correctly; 60.4% of respondents less than 16 items; whilst only 7.4% managed to get 33 to 48 items correct. Table V75 indicates the differences between these groups of scores. Table V76 notes significant differences between all groups, except for three pairs of comparisons: the 0 and 17-24 groups; the 1-8 and 17-24 groups, and the 1-8 and 25-32 groups. One can infer that most Maltese early educators are more likely to achieve a 33% correctness rate. The questions that resonates: is this an adequate knowledge base for professional teaching?

Figure 8. Respondents' correct total score from 48 linguistic knowledge items
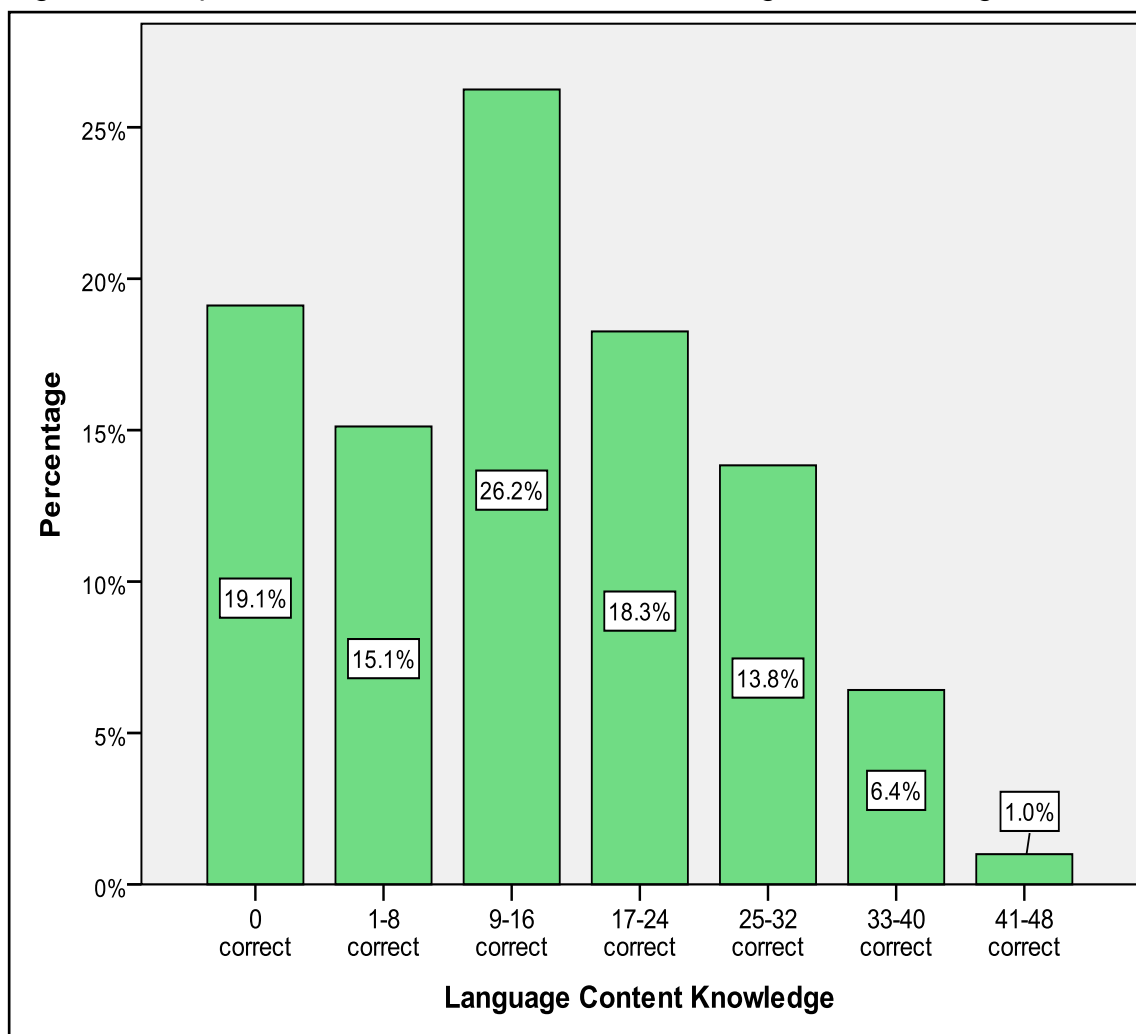
Figure 9 (Table V77) analyzes the mean total score across profiles of FT. One notices that the Diploma-LSAs (mean score 20.26), B.Ed. (Hons) primary graduates (mean score 19.11) and BA/BA(Hons) PGCE-graduates (mean score 19.03) have the highest mean total scores. On the other hand, KGAs achieved the lowest score (mean score 10.62), followed by respondents who indicate "other" as their training (11.66). Furthermore, none of the cohorts answered at least half of the items (24.00) correctly. The 95% confidence intervals displayed in Figure 25 indicate significant differences between some clusters: B.Ed. (Hons) graduates, BA/PGCE graduates and Diploma-LSAs indicated significantly (p<0.0005) more knowledge than KGAs, Certificate-Facilitators and respondents trained with short courses (Other). No significant difference was observed between the MATC and any of the other profiles, whilst the scores differences between Certificate and Diploma-LSAs are significant (p<0.0005).

Figure 9. FT profiles' compared total mean score of linguistic knowledge
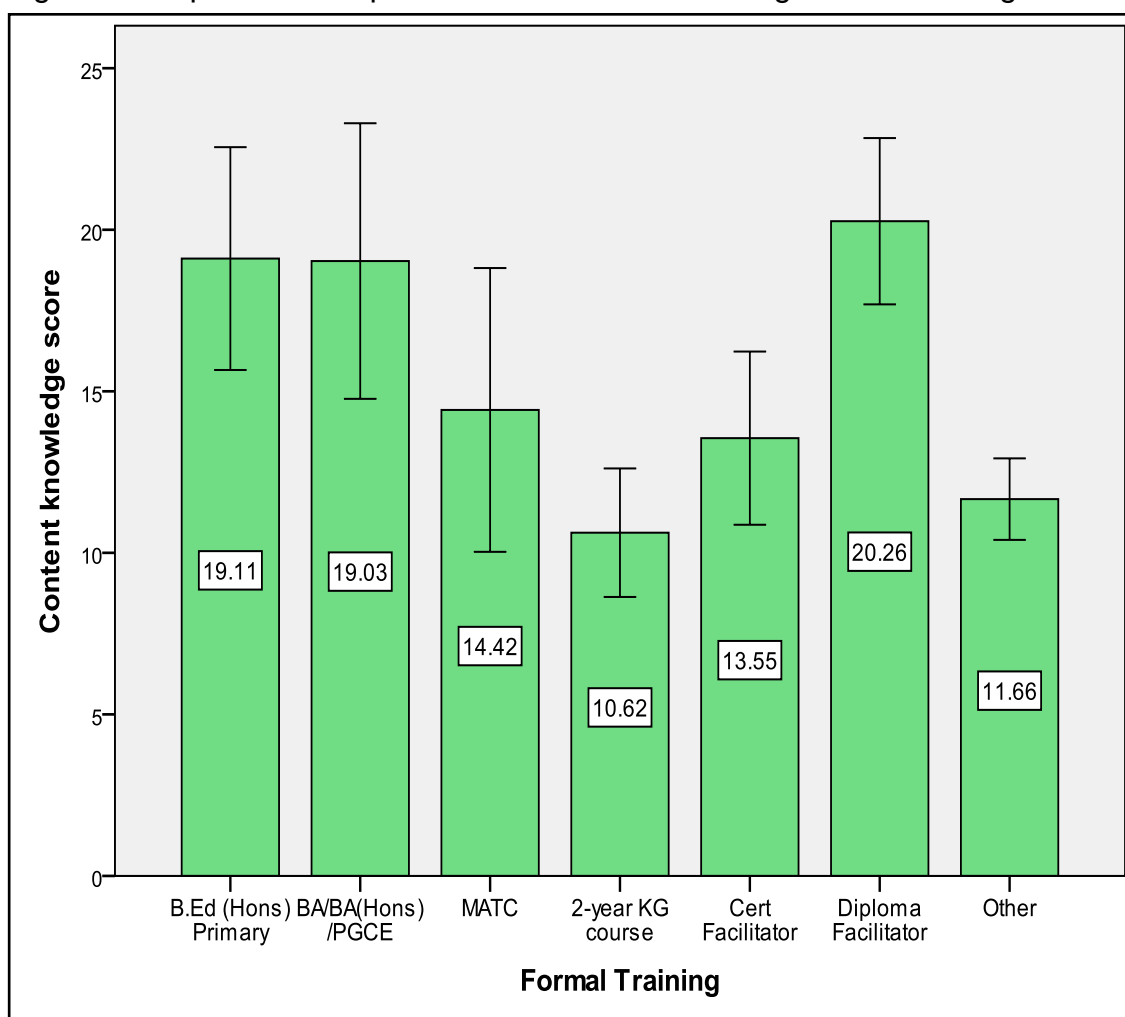
Table V78 and the 95% confidence intervals displayed in Figure 10 indicate significant differences ($p<0.0005$) between the mean scores of respondents who indicated 0-1 and 2-3 areas; 0-1 and 4-7 areas; 0-1 and 8-14 areas; 2-3 and 4-7 areas ; 2-3 areas and 8-14 areas to which they were exposed during FT. No significant difference was found between mean scores of respondents who indicated 4-7 areas and 8-14 areas of literacy covered during FT. Figure 10 also indicates that, whilst, on the one hand, the more material, both theoretical and practical, respondents were exposed to during FT, the more linguistic knowledge they possessed; on the other hand, no group score achieved at least 50% accuracy (24.0 possible mean total score): the mean score of respondents who indicate 0-1 areas covered during FT was 9.7; a mean score of 14.48 and 19.06 was recorded for respondents who claimed covering between 2-3 and 4-7 areas respectively; whilst respondents who

indicated eight or more areas achieved a 21.21 mean score. Percentage-wise, fewer respondents were able to achieve at least 50% accuracy when exposed to less material.

Figure 10. Linguistic knowledge mean scores and areas covered during FT.
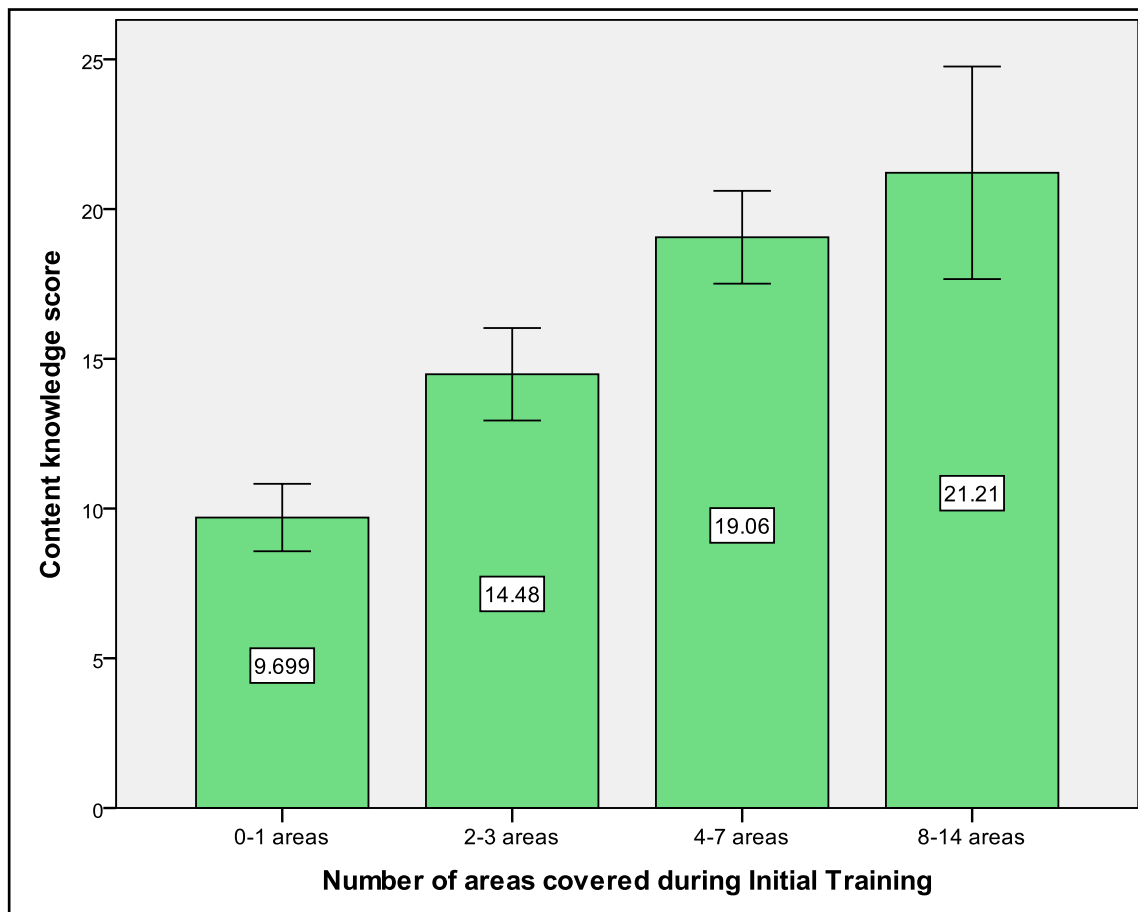
Table V79 further indicates a significant difference between the middle score and the actual mean scores achieved by respondents. Except for Maltese syllabication, where the score was significantly higher than the middle score, all aspects of knowledge assessed indicate that respondents scored significantly lower than the middle score. When one then singles out the Maltese word which needed sophisticated linguistic knowledge of syllabication, *eżerċizzju*, one notes that the score (0.19) was again significantly lower (p=<0.0005) than the middle score (0.5). Respondents who indicated FT exposure to MSA and the Interconnectionist Model of Reading yielded significantly higher mean total scores than respondents not exposed to these two aspects of literacy (Tables V80 & V81). Differences between mean total scores of respondents exposed to either of these two aspects was not significant (p=0.123), whilst comparison of exposure to either one, with exposure to both,

again yielded a marginally higher total mean score (21.08). One can therefore infer that exposure to either of these two aspects significantly increased knowledge of linguistic knowledge. One must note, however, that these higher scores are again below the 50% mean score possible (24/48) inferring that although knowledge in this cohort has increased and querying whether 50% professional knowledge is sufficient!

Examples of Linguistic Terminology

Table V82 and Figure 11 overleaf indicate that when respondents were asked to give examples of terminology used in SMSLI (e.g. consonant blends, digraphs, magic-E rule), most either achieved a score of 0 (n=196; 27.96%) or decided to leave the whole section out (n=136; 19.4%). Only five respondents (0.7%) gave ten correct examples and only 99 respondents (14.12%) gave six or more correct examples.

Figure 11. Frequency of correct scores from ten items of knowledge required
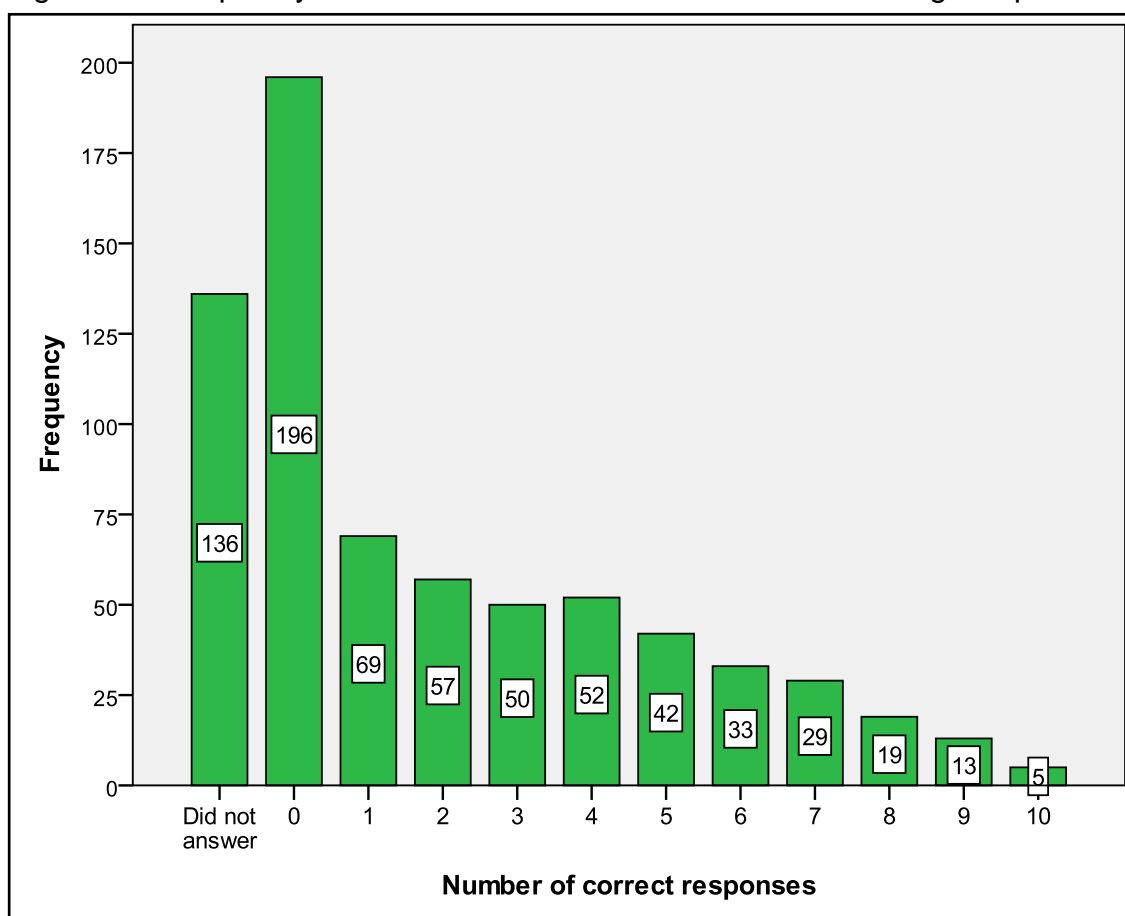
Differences between groups of scores (Table V83) are mostly significant. The next section also compares these total scores with perception of

knowledge. When one analyses across professions (Table V84 and Figure V17), it is clear that KGAs (76.4%) were most likely to achieve a score of 0 or leave the section out, whilst teachers (44.9%) and LSAs (39.7%) were most likely to get more 1 to 4 answers correct. KGAs (1.7%) were least and teachers (9.7%) most likely to get between 8 to 10 examples correct. Differences among professionals are significant at the 0.05 criterion. Significant differences across FT profiles are also present (Table V85 and Figure V18). Appendix W provides a sample of errors made by respondents

B.Ed. (Hons) graduates (51.4%) and Diploma-LSAs (45.6%) were more likely to get between one and four examples correct; they were also the least likely to achieve a 0 score and most likely to get 8 to 10 examples correct. KG-course respondents were more likely to give no correct answer (65.9%), whilst 46.2% MATC-trained teachers either did not respond or gave no correct answers. BA-PGCE were most likely to get 5 to 7 examples correct. One can therefore infer that B.Ed. (Hons) graduates and Diploma-LSAs are more likely to be able to give correct examples of SMSLI-related terminology than other groups. One is reminded that these two groups also indicated perception of most preparedness to address MSA. Table V86 compares the percentages of respondents who indicated exposure to MSA and percentages of respondents' total score of correct examples given.

The ranked percentages above indicate that although KGAs are ranked third with regard to exposure to MSA, they were then the ones who most gave no correct or left out answers, and who least achieved correct answers. A similar profile for Certificate-LSA can also be inferred. This may mean that their understanding of MSA is "use of all senses" or that they believe that they know considerably more than they actually do. Respondents with a profile of "other" consistently ranked second lowest, except in the case of 8 to 10 answers (third lowest), whilst Diploma-LSAs were the group which most indicated exposure to MSA and also ranked higher in the number of correct answers. B.Ed. (Hons) graduates generally performed the best with regard to number of correct answers, even though they ranked fourth with regard to exposure. One can therefore infer that B.Ed. (Hons) graduates did better than they expected, given

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their perceived exposure to MSA in FT, and that perhaps they are more cautious about their knowledge base. A similar inference may be gleaned for the BA-PGCE group.

When one analyses the ten examples requested, one notes that respondents were mostly correct in giving examples of Consonant Blends (35.1%), the Magic-E rule (31.2%), long and short vowels (26.1%) and Digraphs (25.4%), and least able to give correct examples of Phonemes (13.8%), Phonemic Awareness (13.1%) and Graphemes (9.4%) (Figure 12 & Table V87).

Figure 12. Profile of correct examples of ten knowledge items requested
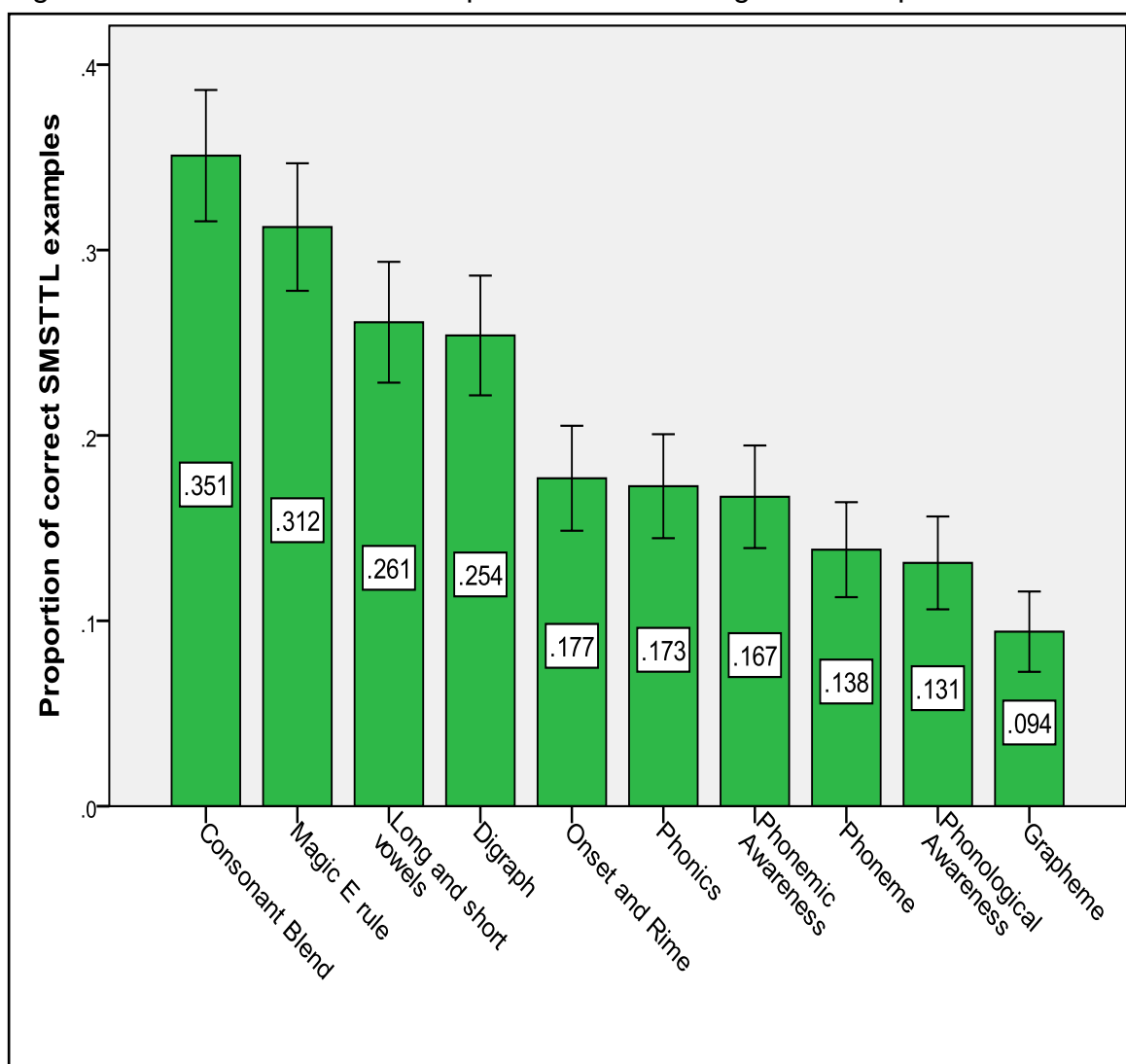
$\chi^2 = 656.08,\ v = 18,\ p < 0.0005$

The rank-ordered overview of the ten examples in Table V88 indicates that the areas where respondents indicated least knowledge (e.g. Grapheme,

Phoneme, Onset and rime) included sophisticated knowledge usually linked with SMSLI; whilst the use of less sophisticated terms, such as consonant blends, indicated better knowledge.

Figure V19 further indicates that, in all areas, most respondents were likely not to give any examples. The number of non-answered examples increases in areas specific to SMSLI. For example. 70.5% did not give an example of a grapheme, 70.3% did not give an example of onset and rime, 69.5% did not provide an example of a digraph. On the other hand, respondents were the least likely not to give an example of phonics (45.1%) and Long and Short vowels (50.8%), and were also the least likely to give a correct example of Graphemes. Differences are significant.

Figure V20 shows that the proportion of correct replies for answering the ten examples correctly are significantly lower across the board for KGAs when compared to teachers and LSAs. Furthermore, teachers were significantly more cognizant than LSAs with regard to consonant blends and the Magic-E rule. Year 1 teachers scored significantly higher than LSAs with regard to knowledge on digraphs. Although teachers tended to score higher than LSAs, the differences in scores for Long and short vowels, onset and rime, phonemic awareness, phonics, phonemes, phonological awareness and graphemes are not significant.

When comparing mean scores with profiles of FT (Figure V21), interesting significant differences emerge. Respondents whose profiles included one-off course and respondents who followed the 2-year KG course scored the lowest, whilst B.Ed. (Hons) Primary, BA-PGCE and Diploma-LSAs scored the highest. With regard to consonant blends, the magic e-rule, onset and rime, no significant differences are found between the KG-trained and 'other' profiles, but then there is significant difference when comparing these two groups with the rest of the profiles. The only area of knowledge where no significance across all the profiles is observed is knowledge on graphemes, as all profiles yield low knowledge. B.Ed. (Hons) Primary indicated significantly more knowledge of Consonant Blends and the magic-E rule. The 95% confidence intervals

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displayed by the error bars provide a range of values for the actual proportions if the whole population of Maltese early educators working in Maltese and Gozitan primary schools had to participate in the study.

Linguistic Knowledge of Phonemes, Graphemes, Short and Long Vowels and Syllabication as Compared to Exposure to MSA

As noted above, respondents exposed to MSA achieved a better score overall than other respondents. Similar results are yielded when this analysis is made on specific items of linguistic knowledge (Figure 13 overleaf).

Figure 13. Comparing mean scores - MSA exposure and non-exposure
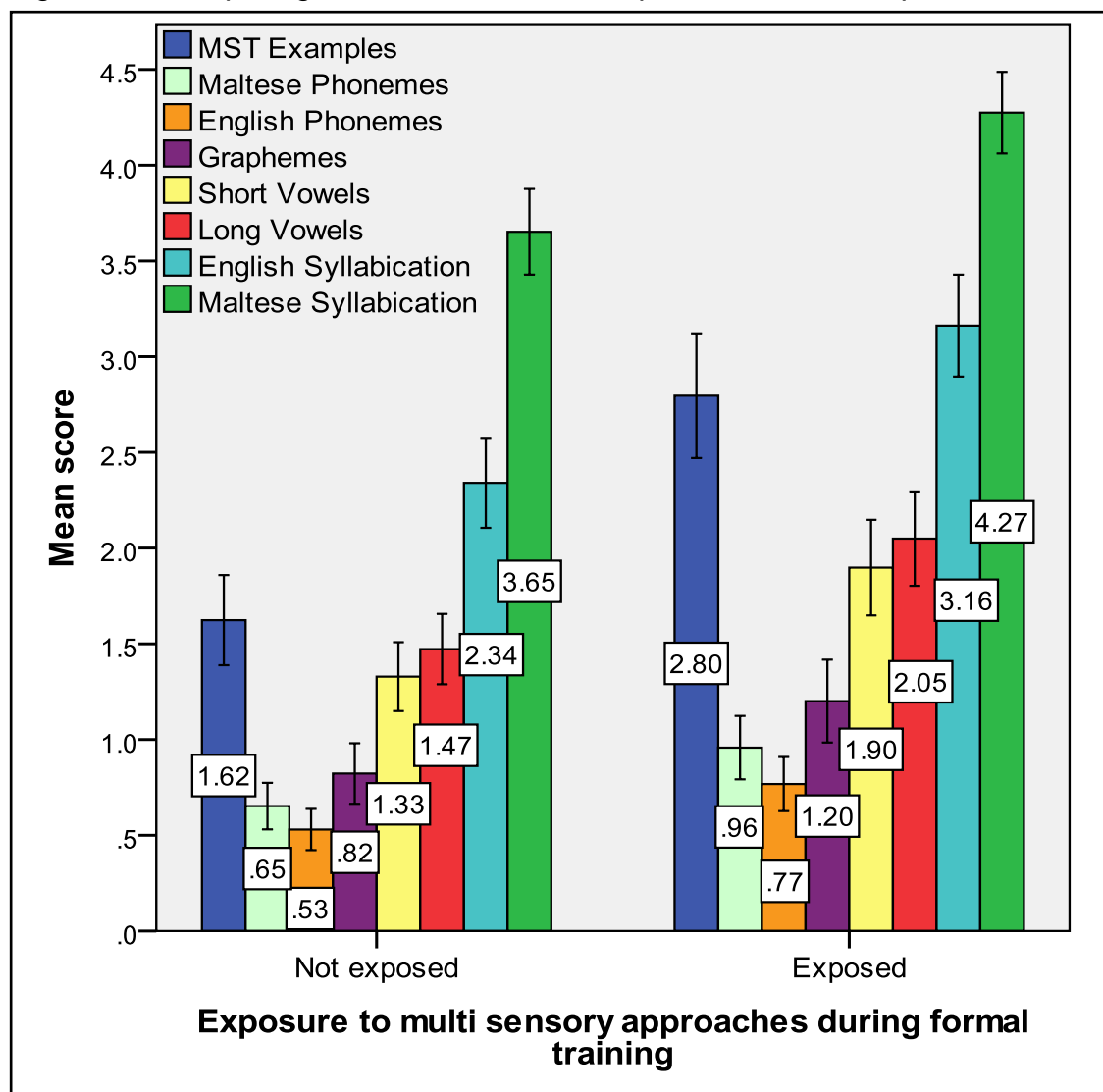
Table V89 compares linguistic knowledge and exposure to MSA. Consistently, respondents who selected MSA as part of their training achieved significantly higher mean scores. This indicates that exposure to such

knowledge is effective. However, there is still an amount of concern.   All mean scores of these respondents, except for syllabication, are still below the middle possible scores. Maltese syllabication is the only area of knowledge where the mean score is above the middle score, irrespective of exposure to MSA (3.65 and 4.27). This may reflect the importance culturally and educationally given to this area in Maltese early literacy. One further notes that respondents did worse when asked to give examples of language structure usually covered in SMSLI training (e.g. phonemes and graphemes).

Knowledge of Phonemes and Graphemes

Respondents were asked to list the number of phonemes and graphemes of four words in Maltese and in English. In general, scores were low - lower for graphemes. Figure 14 and Table V90 indicate poor knowledge of phonemes across profiles of FT.

Figure 14. Mean score of knowledge of phonemes compared across FT profiles
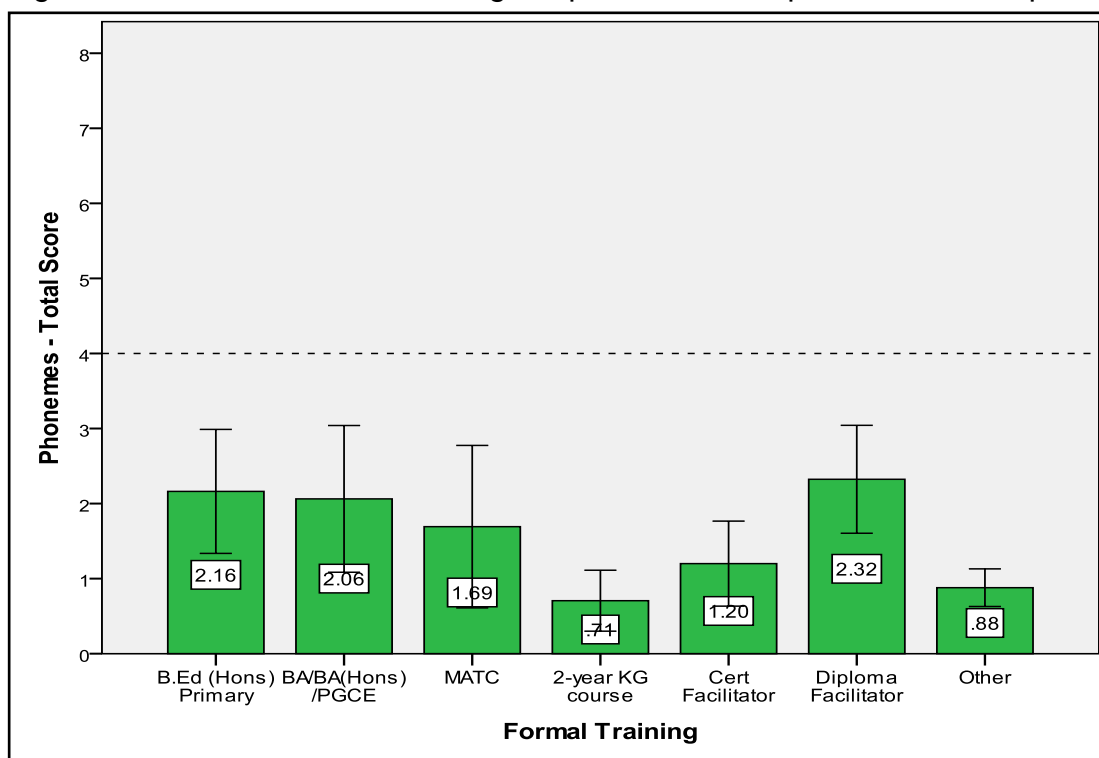
$F = 6.399, \ v_1 = 6, \ v_2 = 541, p < 0.0005$

Diploma-LSA, B.Ed. (Hons) graduates, BA-PGCE graduates did better, and differences are significant when compared to the KG-trained and the "other" groups. The prevailing pattern contrasting the 2-year KGA course graduates

and respondents who followed one-off courses with the rest is very conspicuous. Respondents did significantly better in Maltese (0.78 ms) than in English Phonemes (0.63 ms) (Figure V22).

When respondents were requested to indicate the number of phonemes in each specific word, a consistent pattern emerges with regard to exposure and non-exposure to MSA (Tables V91 and V92 respectively). The percentage of correct and incorrect answers both increase whilst the number of items left unanswered decreases for respondents exposed to MSA. The inference is that, although exposure to MSA may lead to more correct answers, some respondents may not have enough information but may feel more confident and attempt to answer not knowing that they are incorrect, indicating a need for more training.

Respondents were also asked to list the number of graphemes. Figure 15 and Table V93 indicate a similar profile to knowledge of phonemes and, as expected, even poorer scores than for knowledge of phonemes. Diploma-LSAs, B.Ed. (Hons) graduates, BA-PGCE graduates again did significantly better than the rest of the respondents. The lower scores attained by the 2-year KGA course graduates and respondents who followed one-off courses compared to others prevail. When one analyses each word to exposure and non-exposure to MSA, a similar consistent pattern as explained for phonemes again emerges (Tables V94 and V95 respectively). Significantly, better performance in Maltese Graphemes is recorded (Figures V23 and V24). When one compares the score of phonemes and graphemes across profiles of FT, one notes that all groups indicated more knowledge with regard to phonemes (Table V96). This may also be due to lack of knowledge of the term 'grapheme'.

Figure 15. Mean score of knowledge of graphemes compared across FT profiles
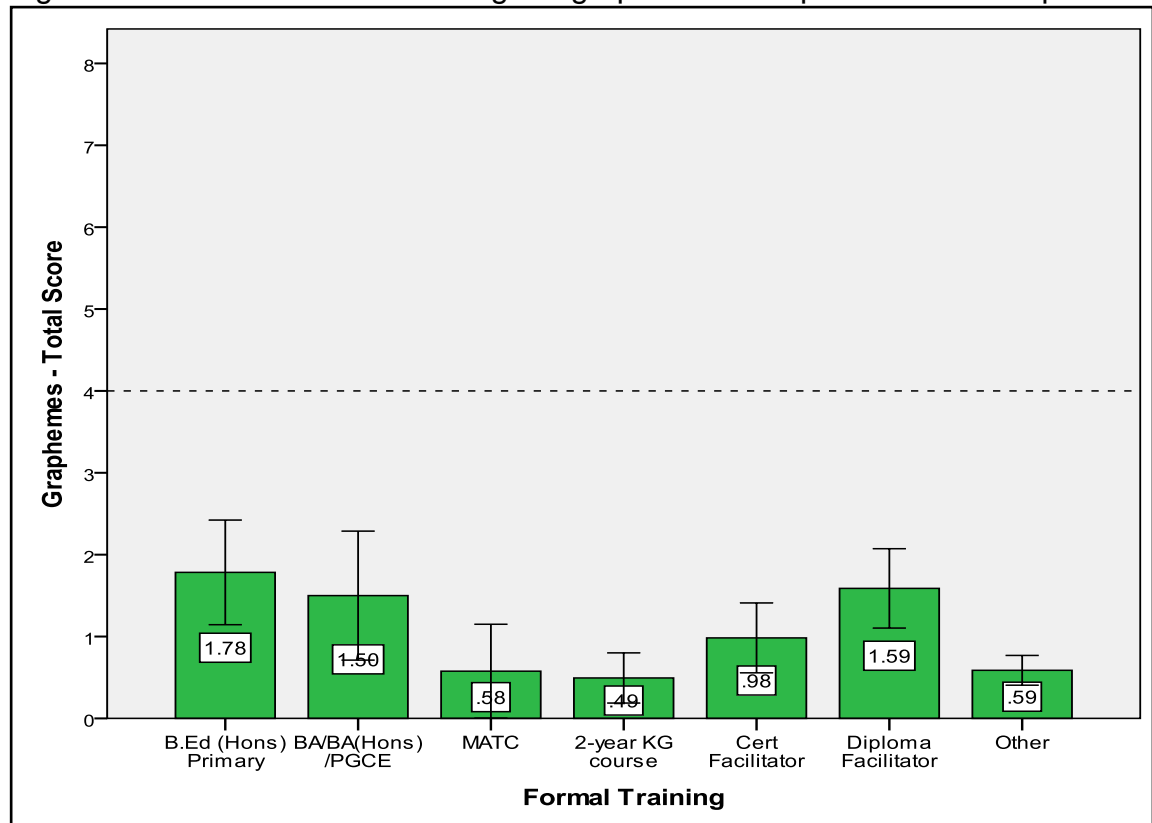
$F = 7.177,\ v_1 = 6,\ v_2 = 541,\ p < 0.0005$

Knowledge of short and long vowels.

Exposure to MSA also yielded better response rates, more incorrect answers and less items answered with regard to short and long vowels. The inference from this pattern has already been referred to and is similar to the patterns of responses for phonemes and graphemes (Tables V97 and V98). Figures V25 and V26 present total mean scores for short and long vowels, as compared to FT profiles. A comparison across FT profiles indicates that Diploma-LSA (2.40) and the BA-PGCE groups (2.34) achieved the highest mean scores for short vowels; and the same highest score for long vowels (2.50). This was also the only middle score achieved, as all other scores were below the middling value 2.50. It is also one of two averages at or above the mean achieved throughout this third section. B.Ed. (Hons) graduates ranked third for both short (1.95) and long (2.14) vowels. All cohorts were marginally more correct in indicating long vowels than Certificate-Facilitators and KGA groups. As noted in other sections, KGA-trained respondents continue to indicate least knowledge, but certificate-LSA did even worse. Diploma-LSAs, BA-PGCE and

B.Ed. (Hons) graduates did significantly better than Certificate-LSAs for both long and short vowels; whilst Diploma-LSAs and BA-PGCEs also did significantly better than the KG-trained group and those indicating "other".

Syllabication

Participants were asked to syllabise 12 words: six words in Maltese (*Kiser, nagħmel, għidlu, karozza, eżerċizzju, frugħat)* and six words in English (*Meat, apricot, snake, sit, bind, table*). Respondents scored significantly higher (p<0.005) syllabising Maltese words (3.90) than English words (2.67) (Table 16). There is a significant positive correlation between the two sets of scores of (R= 0.532, p<0.0005), indicating that respondents scoring high in one language tend also to score high in the other.

Table 16. Maltese/English Syllabication: ms out of a possible score of six

Syllabication (middle score 3.0)	Mean	Standard Deviation	P-value
Total Score Maltese Syllabication	3.90	2.156	<0.0005
Total Score English Syllabication	2.67	2.410	

Using the One-way ANOVA test, the mean Maltese and English correct scores were compared between teaching posts (Tables V99 and V100). LSAs achieved the highest mean score for English Syllabication and second highest mean score for Maltese Syllabication. Teachers achieved the highest mean scores for Maltese syllabication. KGAs always achieved the lowest mean scores to a significant degree. When mean scores between sets of teaching posts for Maltese and English word syllabication are compared, significant differences between KGAs and teachers, and between KGAs and LSAs, are observed. The difference in the mean scores attained by LSAs and teachers is not significant with regard to English and Maltese syllabication (Tables 17 and 18).

Table 17. English syllabication compared with teaching posts (Tukey Post Hoc test)

Teaching Post	Difference	Standard Error	P-value
KGAs -Teachers	0.759	0.205	0.0010
KGAs - LSAs	1.005	0.234	<0.0005
LSAs - Teachers	0.246	0.240	0.5610

Table18. Maltese syllabication compared with teaching posts (Tukey Post Hoc test)

Teaching Post	Difference	Standard Error	P-value
KGAs - Teachers	1.462	0.176	<0.0005
KGAs - LSAs	1.423	0.201	<0.0005
LSAs - Teachers	0.039	0.206	0.9810

Error analysis of syllabication.

The percentages displayed in Table V101 and the mean scores exhibited in Figure 16 indicate that, in general, respondents answered this section most correctly. Figure V27 reveals that respondents were more likely to decide not to attempt to syllabise English words.

Figure 16. Respondents' correct responses of syllabication of words
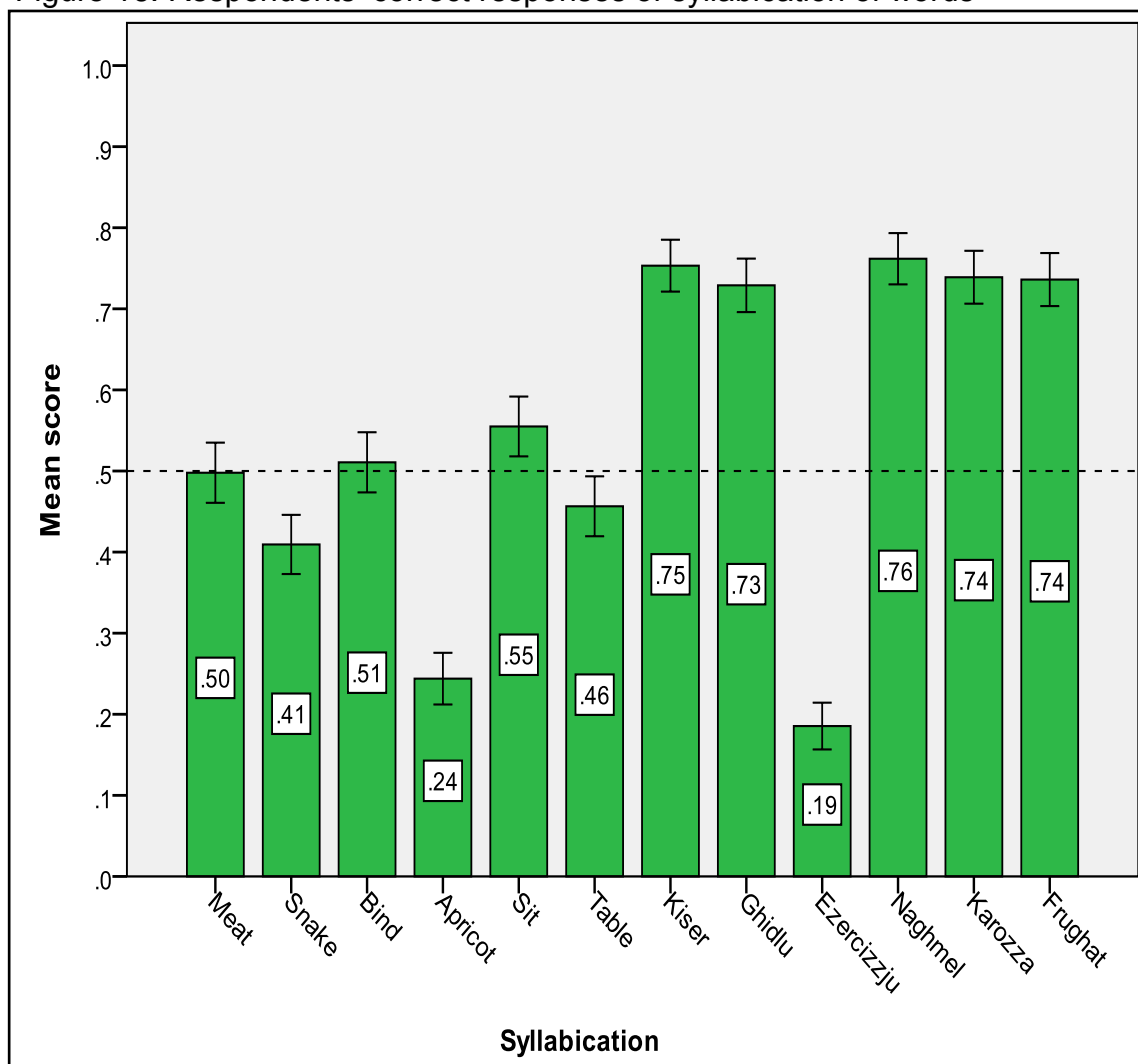
When one attempts to analyze and compare words, one notes a positive relationship between a need for linguistic knowledge and incorrect responses. All but one (*apricot)* English words indicated a correct response rate of syllabication ranging from 40% to 55 %. The word *apricot*, requiring knowledge as to why the initial syllable /ā/ stays on its own, indicated a significantly lower correct response rate of 24.4%. Similarly, 75% of the respondents scored five out of six Maltese words correctly, and only had difficulties with the word *eżerċizzju*, a word which again needs linguistic knowledge to correctly put the double consonants /zz/ within the syllable *"ċizz"* and the initial single sound syllable /*e*/ on its own. The words *apricot* and *eżerċizzju* required most linguistic knowledge and will be individually analyzed below.

Moreover, respondents also scored low with regard to the words *snake* (40.9%) and *table* (45.6%). Errors include dividing *snake* in two syllables "sna-ke", which may be a generalization of the knowledge that syllables always have a vowel sound against the knowledge of the magic-E rule, where the "e" in *snake* is merely indicating that the /ā/ is a long vowel, whilst *table* was syllabised as "tab-le", indicating a lack of knowledge of long closed and open syllables as related to short and long vowel sounds respectively.

Figure 17 indicates that all respondents with different TP profiles did significantly better in Maltese than in English syllabication, except in the case of *eżerċizzju.* All groups were weakest at syllabising *apricot* and *eżerċizzju*, whilst all profiles, except for MATC and Certificate LSA, were more likely to correctly syllabise *apricot* rather than *eżerċizzju*.   Difficulties with long vowels (*snake* and *table*) are also evident.   When one looks at correctness of responses across professions (Figure V28) one notices a number of significant differences. A word analysis across professions indicates that teachers generally did better than LSAs with regard to Maltese Syllabication; whilst LSAs did better in five English words. Differences are, however, not significant.

Figure 17. Correct responses of syllabication of words across FT profiles
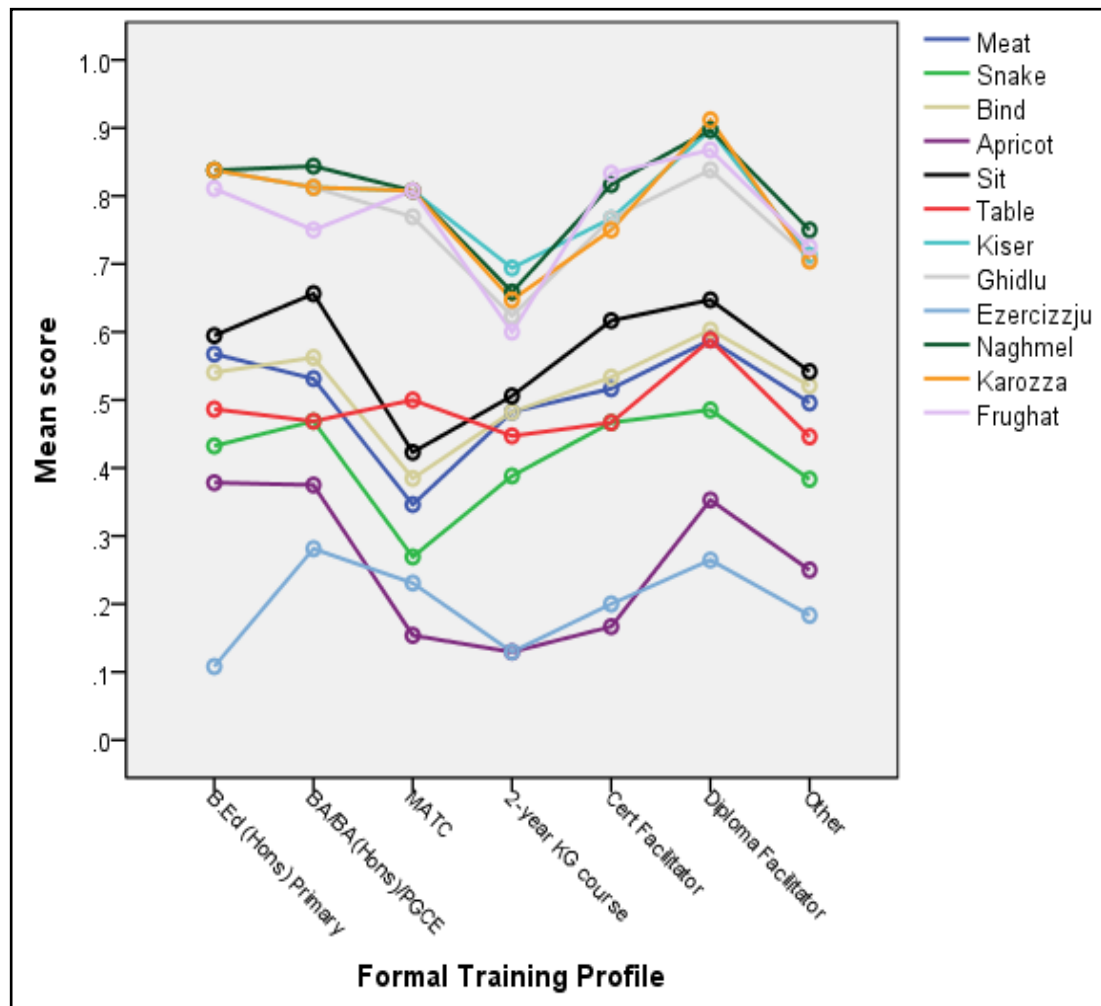
Furthermore, teachers did better than the other two professions syllabising *apricot* and *eżerċizzju*. KGAs were more likely to do badly with regard to these two challenging words and considerably more likely to err with regard to "snake" and "table".   Appendix X presents a detailed error analysis of the words *apricot* and *eżerċizzju* and records a lack of sophisticated linguistic knowledge about syllabication in both languages.

Perception of Preparation and Knowledge, and Correctness of Actual Knowledge

A profession is defined as an occupation which requires specialized study and a significant amount of supervised and assessed training. One would therefore assume that professionals are cognizant of the body of knowledge required to do their job and aware of what they know or not know. One of the objectives of the questionnaire was to compare whether perceptions of

respondents matched actual linguistic knowledge, arising from the concept *Does one know that one does not know* which is the baseline of the main research question. Whether they agree that they are prepared to teach a particular area of early reading, whether they think that they understand the meaning of particular terms, and whether they actually provide the correct example, yields interesting data which also raises concern. This comparison could be carried out with the following themes: phonological awareness, phonemic awareness, phonemes, phonics, onset and rime, and rule learning (Magic-E rule, syllabication, long and short vowels).

Tables V102-V110 indicate that for each theme, respondents who disagreed or were unsure whether they were adequately prepared, generally did not give an example and were more unlikely than likely to use this skill in the classroom. This seems to indicate reluctance to use techniques professionals were not confident in, and perhaps that respondents had heard of the techniques but then did not follow through or feel confident enough to use them. It is a matter of concern that respondents who perceived themselves as adequately prepared and knowledgeable provided incorrect answers. Table 19 indicates that for all areas, except for onset and rime, magic-E rule, long and short vowels and syllabising *apricot*, there were more respondents who were significantly more likely to provide an incorrect answer rather than a correct answer, in spite of their self-perception of sound preparation, good content knowledge and classroom practice

Table 19. Comparing actual knowledge to perception of adequate preparation

Respondents' positive perception of SMSLI Knowledge	Correct Example	Incorrect example	Significance
Phonological Awareness	43	85	<0.0005
Phonemic Awareness – Phoneme	42	87	<0.0005
Phonemic Awareness – Activity	51	55	<0.1338
Phonics Skills – Activity	74	142	<0.0005
Synthetic Phonics	19	42	<0.0005
Onset and Rime	**42**	**31**	<0.0005
Rule learning – Magic-E Rule	**29**	**2**	<0.0005
Rule learning - Long and short vowels	**28**	**15**	<0.0005
Rule learning syllabication 'apricot'	**24**	**16**	0.0002
Rule learning syllabication 'eżerċizzju'	12	31	<0.0005

The significant differences infer that respondents who thought that they knew the material were more likely to provide incorrect examples of phonological awareness, phonemic awareness, phonic skills activities, synthetic phonics and to syllabise *eżerċizzju* incorrectly. Conversely, respondents who perceived themselves as adequately prepared technically and content-wise were significantly more likely to give a correct example of onset and rime, indicate long and short vowels correctly, and syllabise *apricot* correctly. Table 20 presents the percentage differences between perceived and actual knowledge of the professionals involved.

Table 20. Comparing professionals' perceived and actual knowledge

Phonological awareness	Teachers	**47.0%**	Onset and Rime	Teachers	**20.2%**
	KGAs	15.7%		KGAs	8.00%
	LSAs	37.9%		LSAs	18.0%
Phonemic Awareness Example	Teachers	**37.9%**	Grapheme	Teachers	**23.0%**
	KGAs	11.2%		KGAs	4.5%
	LSAs	30.4%		LSAs	17.4%
Maltese Phonemes examples	Teachers	**52.6%**	Digraph	Teachers	**5.9%**
	KGAs	9.8%		*KGAs*	-0.3%
	LSAs	34.2%		LSAs	1.3%
Number of Maltese phonemes	Teachers	**32.8%**	Eżerċizzju	Teachers	23.1%
	KGAs	3.1%		KGAs	**32.8%**
	LSAs	19.9%		LSAs	24.7%
Number of English phonemes	Teachers	**32.8%**	Apricot	Teachers	16.0%
	KGAs	3.1%		KGAs	**28.6%**
	LSAs	21.7%		LSAs	17.9%
Phonics Skills	Teachers	61.3%	Magic- E	Teachers	7.1%
	KGAs	43.9%		KGAs	**28.6%**
	LSAs	**62.7%**		LSAs	8.7%
Consonant Blends	Teachers	19.3%	Vowels	Teachers	**36.8%**
	KGAs	10.0%		KGAs	21.3%
	LSAs	**33.3%**		LSAs	28.0%

In all instances, except for KGAs with regard to digraphs, professionals indicated that they perceived themselves to be more knowledgeable than they actually were, as interpreted through the scores of perceived knowledge and correct responses. For most areas, teachers were more likely than KGAs and LSAs to perceive themselves more knowledge than actually recorded in correct answers, except for knowledge of syllabication, consonants blends and phonics skills.

Given that most primary school teachers are trained through the B.Ed. (Hons) Primary programme at the University of Malta, I felt it important to address differences in perception and actual knowledge of this group of respondents. Table 21 indicates that B.Ed. (Hons) graduates were generally confident in knowledge that they did not actually possess. All differences, except for diagraphs and the magic-E rule, were significant. With regard to these two aspects of early literacy, respondents least indicated perceived knowledge. B.Ed.-Graduates indicated large discrepancies between perceived and actual knowledge of aspects of early literacy involving knowledge of phonics. These results are of concern particularly in a context where CPD to introduce the Jolly Phonics programme (Lloyd, 1998) had been implemented. Patchy knowledge, as well as possible lack of confidence or enough knowledge to use in class is inferred.

The discrepancies between perception of knowledge, classroom practice and actual knowledge constitute another cause for concern. The concern is: how much are educators giving wrong content to our children? For example, how many children are being exposed to overgeneralization of the double letters' syllabication rules ('ka-ro*z*-*za*' - car - versus 'e-żer-ċi*zz*-ju')?. One is reminded that the PISA reports indicate Masters level knowledge as a good indicator of effective teachers (OECD, 2003). A main query is: How can this recommendation be translated for the early years' school educator?

Table 21. B.Ed. (Hons) primary graduates' perceived and actual knowledge

MSA example	Perceived Knowledge	Correct example	Difference	p-value
Consonant Blend	89.2%	59.5%	29.7%	0.0046
Phoneme	83.8%	21.6%	62.2%	<0.0005
Phonics	83.8%	32.4%	51.4%	<0.0005
Long and short Vowels	73.0%	32.4%	40.6%	0.0008
Onset and Rime	62.2%	24.3%	37.9%	0.0016
Phonological Awareness	59.5%	27.0%	32.5%	0.0062
Phonemic Awareness	59.5%	27.0%	32.5%	0.0062
Magic-E rule	59.5%	62.2%	2.7%	0.8126
Digraph	45.9%	37.8%	8.1%	0.4823
Grapheme	43.2%	10.8%	32.4%	0.0025

Tables V111 to V114 provide an overview of the population which gave correct answers. These four tables indicate (a) that respondents were significantly more likely to perceive a knowledge base than they were actually able to give a correct answer, except with regard to perceived and actual knowledge of digraphs (p=0.3298); (b) a non-significant difference is also present across professions. When one looks at the differences in perceived and actual knowledge, one notes that teachers were most likely to believe that they knew the material and actually knew it, whilst KGAs were least consistent, except for the magic-E rule, syllabication of *eżerċizzju* and *apricot*. One may query if some, but not enough, exposure to material may lead to over confidence in what is learnt and oblivion to incomplete knowledge.

Listening to the respondents

I thought it relevant, before concluding, to take a moment to reflect on some of the comments displayed in Table 22 overleaf that I found written at the end of the questionnaire as this again reflects the research question. It may be inferred that respondents who wrote the comments are motivated and interested. These comments indicate a need for an orchestrated and cohesive plan where theories, practice and content knowledge required to address early literacy are presented to early educators theoretically and practically: 'Everybody throws things at you but nobody give you a whole process (r341)'.

Comments r515 and r516 are of grave concern as they seem to indicate totally different systems to address the two languages when both are alphabetic, whilst r602 indicates that she gained knowledge from her BA English undergraduate course as opposed to what she gained from her teacher preparation training. Ultimately, these comments seem to reflect the statistics and the general feeling of patchy knowledge and unfounded perceptions of preparation and knowledge that this data reflects.

Table 22. Respondents' comments found on questionnaires

	Respondents' Comment on Questionnaire
r6	A refresher's course is important in order to continue learning new strategies to be used in class in order to help pupils develop these literacy skills. (Kindergarten Assistant)
r28	I was not trained for primary. (Teacher)
r41	Phonology/phonemic/Phonics – not sure of the difference. (Teacher)
r48	Sometimes we know the practice but not the proper name for it. Just aware of phonemes and graphemes. (Teacher)
r57	Sorry, I only cover phonemes in English. Do not know the meaning of graphemes. (Year 1 teacher)
r77	I know about them but would be interested in further training. (Teacher)
r136	I think I have a lot of activities which include these skills, but I do not know that they are called by the above terms. (Teacher)
r293	Syllabus related in-service course would be beneficial. However, we use the phonic approach (auditory and decoding activities) not syllable related activities. (Year 1 teacher)
r341	Everybody throws things at you but nobody gives you a whole process (translated from Maltese). (Kindergarten Assistant)
r418	Always copying foreign systems and nobody sees exactly what is needed (translated) (Kindergarten Assistant)
r515	I do not teach phonemes in Maltese. (Teacher)
r516	I do not teach syllables in English. (Teacher)
r601	Kindly note that I was tempted more than once to go to the internet but never did. (Teacher)
r602	I was introduced to phonics as part of the English Linguistics course, not as part of my teaching early literacy. [I] had English as a main subject, besides early and middle years. (Year 1 teacher)
r673	I do not know. I feel not prepared and do not feel confident at all. (Year 2 teacher)

Concluding Remarks

This statistics chapter indicated that whereas professionals tended to agree that they were adequately prepared to teach early literacy in general, and felt significantly less prepared to address MSA in the classroom, their linguistic knowledge necessary to address early literacy most effectively, as evidence based by research findings (REA, 1998), provides us with a different picture. These data indicate, in my opinion, six major findings: (1) B.Ed. (Hons) primary and Diploma-LSAs were more likely to have covered more aspects of early literacy during FT; (2) more likely to, if they indicated exposure to MSA, know

material they thought they knew in a context where most respondents, irrespective of FT, indicated a discrepancy between actual knowledge and perceived knowledge and preparation; (3) most respondents knew less than a third of the knowledge requested in the research tool, and knowledge was positively affected by exposure to MSA or Adams' Interconnectionist Model of Reading; (4) most respondents understood *multisensory* in the generic context of multisensory learning as opposed to the word within the SMSLI context; (5) KGAs indicated most discrepancy between perceived and actual knowledge, and it is inferred that this may be due to lack of exposure to SMSLI leading to a generic understanding of the term *multisensory*; (6) most respondents indicated that they first became aware of MSA either during FT or at the workplace. These findings give rise to recommendations with regard to logistics of training in the area, a subject which will be discussed in the recommendations chapter.

With regard to perception of effectiveness of FT, statistical differences across professions and age (except in the case of the youngest group) were not significant. Conversely, exposure to more areas during FT tended to significantly affect perception of effective FT and actual knowledge base. Consistently across FT profiles, when comparing own FT with present ITT, respondents were generally either unsure or thought that they had been better prepared, except for Certificate-LSAs who felt that ITT prepared better than their own training.

In a context where 93.94% agreed that SMSLI was an important tool in teaching early literacy and inferred that this was more often than not understood as the use of all senses, the three professions felt most prepared to address WWA and phonics and least prepared to address rule learning and LEA. In general, teachers always felt significantly most and KGAs significantly least prepared to address specific aspects of literacy. Whereas generally more than half the participants felt that their FT prepared them effectively to teach literacy, only a third felt prepared to address MSA. Differences are significant particularly for aspects of early literacy mostly linked with SMSLI.

In general, diverse teaching methods were used most by teachers and least by KGAs. Professionals were not so sure about their preparedness when

referring to different aspects of early literacy. Respondents who were unsure about their preparation tended not to address the skills in the classroom, particularly with reference to onset and rime, rule learning, paired reading, LEA and decoding skills. Respondents indicated that they used most WWA, letter-sound correspondence and phonics; and least onset and rime, rule learning and synthetic phonics. Teachers with a B. Ed. (Hons) degree noted the most use of different aspects.

Most respondents either gave a generic or a wrong definition of SMSLI or decided not to answer. These Maltese early educators were more likely to achieve a 33% rate of knowledge correctness, and to do better but still achieve less than half correct, if exposed to MSA.   B.Ed. (Hons) primary graduates and the Diploma-LSAs were likely to significantly achieve the highest mean total scores. Respondents were mostly correct in giving examples of Consonant Blends, the Magic-E rule, Digraphs and long and short vowels; and were least able to give examples of syllabication requiring knowledge of rules, Phonemic Awareness, Phonemes, and Graphemes. All mean scores, except for Maltese syllabication, are below the middle scores. As was inferred with regard to use of WWA, correct answers may be more due to intuition and personal experience rather than training and scientific knowledge. Teachers did significantly worse in words that required exposure to linguistic knowledge.

Respondents who were unsure or disagreed that they were adequately prepared, generally did not give the example requested and were less likely to use this skill in the classroom. Of concern is that, in general, more respondents who perceived themselves as adequately prepared and knowledgeable ended up providing incorrect answers. Professionals, particularly teachers, may be using techniques without the necessary linguistic knowledge or correct scientific terminology, and possibly are not aware of the actual raison d'être of such techniques.

These data indicate a discrepancy between perception and actual knowledge, inferring a concern that incorrect or missing content and/or strategies may be being presented in the Maltese classroom. The hypothesis of

the research - *Do they know that they don't know*? - remains consistent in these results and is then echoed in the focus group findings in the next Chapter. Just as Sean Connery once noted that he was never aware that he was poor or that people lived differently from his home environment until he joined the army, so teachers, and possibly teacher educators, may be not be aware of SMSLI and the resulting repercussions of possible unknown lack of knowledge, even though SMSLI is locally practiced by the SpLD unit and by dyslexia tutors in schools.

CHAPTER 6

Listening to the Professionals

When the work takes over, then the artist is enabled to get out of the way, not to interfere. When the work takes over, then the artist listens.   (L'Engle, 1982, p. 24)

This chapter presents the FGs' participants' voices. To best try and explore the main research question: *Are early educators aware of structured multisensory approaches to teaching early literacy (SMSLI)?* I opted for a mixed method approach. Questionnaires were distributed amongst early educators in all primary schools in Malta and Gozo and 701 out of a possible 1183 questionnaires were returned. Four Focus Groups (FGs) were then carried out using guiding questions built on the literature review and the results of the questionnaires.   This enabled me to compare the results of this mixed method research with the literature and to come to the appropriate conclusions and make recommendations for the local scenario.

The aim of the FGs was to try and elicit early educators' awareness of SMSLI. Teachers' and learning support assistants' (LSAs') participated in these four FGs. Unfortunately, no Kindergarten Assistants (KGAs) were present during the FGs, even though I had tried to recruit these professionals. This may either just have been coincidental or because KGAs perceive the skills of reading - specifically breaking the code - as removed from their syllabus. In the recruitment stage, as already explained in the methodology chapter, I was specifically looking for participants aware of SMSLI in order to elicit a before-and-after experience. This would allow me to try and understand whether this awareness had made an effective change in the professionals' knowledge-base and teaching techniques of early literacy. Snowballing was used for recruitment. FG members had different formal training profiles (Appendix L).

When reflecting on how to present these results, I felt it extremely important to witness faithfully the participants' views. The task was how to blend actual words of participants within a faithful interpretation in a cohesive, structured and reader-friendly manner, such that collective meanings could be elicited and presented as fairly, as faithfully and as authentically as possible to the participants' views. Balancing quotes and results was one of the most challenging parts of this chapter. Given that I am immersed in this profession, I was constantly conscious that I needed to take a step back and try to ensure, from a standpoint theory perspective, that I was representing the views of the

participants and not my perspective or agenda. This chapter was also sent to the focus groups participants for their feedback and approval (Appendix U).

The results yielded unexpected general agreement on most concepts by participants, to the extent that a saturation point was reached and the decision was taken not to carry out individual interviews. Careful care was taken during the analysis stage to try to find disagreements and divergences in concepts, experiences and perceptions among participants, but, in general, similar opinions on themes emerged. This also needs to be reflected upon, as this may both be an advantage and a disadvantage. On the one hand, it may emphasize the importance of the techniques discussed in this research. On the other hand, choice of participants might have been a contributing factor. During the FGs, participants were very active, and I literally had to ask permission to insert questions. Participants were very fervent in their discussions, so much so that themes that emerged also included emotions. Moreover, unexpected related themes which enriched the findings came out of this part of the research. Readers must remember that all participants had been exposed to SMSLI and were comparing their before-and-after teaching experiences. Out of respect for participants, I opted to give them a name rather than a number, as is more traditional in the literature. **T**eacher participants have pseudonyms starting with 'T'; Class **F**acilitators (LSA/class assistants) with 'F'; **S**upport teachers with 'S' and **H**ead of School with 'H'.

Focus Group Themes

Table 23 gives an overview of the themes and subthemes. The IPA framework was used in order to elicit meanings from the accounts through interpretative engagement as explained in Chapter 4. Structuring the themes allowed me to understand relations between concepts and to create themes and sub-themes, resulting in the summary table below which forms the skeleton of this chapter (Langdridge, 2004). The progression and sequence of the themes start from teacher training (ITT) in general and then progresses to SMSLI. Participants, although otherwise coaxed, insisted that they wanted to voice their opinion over the whole ITT experience as they felt that this was as important as

talking about techniques to teaching early reading. They argued that the basic philosophy of ITT also affects early literacy teaching training. Participants felt that ITT is locally more focused on theory than on practice.

Table 23. Summary table of emergent themes

1. Initial Teacher Training
        Theory and practice in initial teacher training
        Knowledge and techniques taught during ITT and expected on the job
        Structure and Cohesion of ITT programmes

2. Methods of teaching and learning during ITT training
         Discussion
         Hands-on learning
         Demonstration lessons
         Classroom observations versus observing good practices
         Feedback, assessment and the learning process in ITT
         ITT and resources

3. Teaching Practice (TP)
        Experience of TP
        Preparation for TP
        TP and assessment
        Mentoring, apprenticeship and TP
        Expertise of university TP tutors

4. Training beyond ITT
        Continued professional development (CPD)
        Peer tutoring

5. Teaching reading
        Exposure to multisensory techniques in early literacy in training courses
        Use of multisensory in teaching versus SMSLI
        Need for linguistic knowledge
        Reaction to lack of knowledge

6. Parental involvement
        Parent information and acceptance of changes
        Parental involvement in teaching reading

7. System of changing
        Resistance to change
        Commitment to change
        Need for team work
        Decision Making Process

8. Effectiveness of SMSLI
        Multisensory techniques to teaching early literacy is not just phonics
        Need for one policy
        The learning process
        Inclusive methodology/success for all
        Multisensory and classroom management
        SMSLI and teacher preparations
        Time management and SMSLI

9. Job Satisfaction

This evoked feelings of concern both from a cognitive and an emotive perspective. With regard to the specific question of this research, participants perceived SMSLI as crucial to successful literacy teaching, directly aimed at ensuring reading success for all children and as lacking in their ITT.

Initial Teacher Training (ITT)

Participants felt that their training at university, both on a general level and, in particular, with regard to preparation for the teaching of early literacy in general and in connection with SMSLI in particular, did not prepare them enough for their world of work, both from a content and a pedagogical perspective for themselves, as learners, and for their pupils.

Theory and practice in initial teacher training (ITT).
Focus group participants who had read the B.Ed. (Hons) course greatly appreciated what was taught during their university course but felt that there was too much emphasis on theories and discussion and not enough on linguistic knowledge and hands-on experience. Participants understood the importance of theories and research, as this helps form trainee teachers' philosophy leading to a sound pedagogy; they however felt that these should not be the focus of ITT and should be balanced by practical pedagogy. The importance of knowledge and theories was no justification for only "occasional one-offs" (Trudy, FG4) with regard to exposure to techniques and to the reality of classroom teaching. Tika (FG 3) explained that she was very good at explaining theories but then, during her TP and her first year of teaching, she realized that she had neither the skills nor the knowledge to translate this theory into classroom techniques: *"You start saying another theory like you know. It's never explained to you how it can be used and how it can be developed... So really it doesn't start making any sense till you actually start using it."* (Tika FG 3)

Participants felt that this affected the quality of their teaching. Teachers who had been exposed to the programme but did not have university training indicated frustration at such situations. Moreover, participants felt this dichotomy so much that they wondered if it were actually possible to do such training at ITT level, or whether it was only possible to do it on the job: "*I had no idea about*

techniques that I would be using hands-on in the classroom." (Trudy, FG4). Tamara and Tabatha reflected:

> *university - I felt like emm … we did not have enough practice, it's more like when you get when you start working that you get all the practice when you start working actually with the children 'cause you have hands-on experience. At university it's all theory you get to the TP, you're tense, you're stressed out and it's completely different from what you get when you're actually working with the children.* (Tamara, FG 1)

> *You start noticing other ways and means, as, if you base your teaching on what you have learnt at university, you would be OK up to a point. For me, it was experience and the courses we read after graduating from university that taught me a lot, as well as trial and error, reading and trying out. However, certain thinking would not ever have crossed my mind, simple strategies which would help globally. Emm let me start from the beginning… when the children start learning the letters, that the child writes the letter in the air, in the sand, using sand paper, I saw how much it helped my own daughter, I can say. These are things, which, in a way, would have never crossed my mind.* (Tabatha, FG 4)

Participants noted that this link to theory and practice should also be reflected in ITT assessment. Tori (FG 2) explained that assignments should all be linked with actual pupils in the classroom in such a way that trainee teachers would always be linking theory to practice. Participants felt that the importance of theory would only come out when one is also exposed to the teaching of skills: *"it's the technique. Do the teachers know how to teach decoding? Do the teachers know how to say the letter sounds?" (*Tika, FG 3). Participants agreed that the best way to prepare teachers was to blend theory with practice and to ensure that teacher trainees were given the details of skills and told how to carry them out. Participants made particular reference to teaching early literacy skills where they perceived their ITT as making them somewhat knowledgeable with regard to the theory but not prepared to address literacy and SMSLI.

Knowledge and techniques:University training and job expectations.
Participants were concerned that the actual content taught during ITT did not prepare them for the expectations of their place of work and they felt that they were then not prepared enough to do their job properly. They referred to a discrepancy between what is taught at university and what schools actually

expect from them after their training. This discrepancy made them feel insecure: *"Everything changes… when I entered the Year 2 classroom and was told to teach 'phonics'. I got a fright because I had graduated from university and did not know how to teach phonics."* (Tori, FG 2)   From the words and phrases Tori was choosing one notes that she left university thinking that she was well-equipped, but when given her schedule of work she ended up not knowing how to teach breaking the code to literacy. Participants referred to a lack of link between the reality of school and ITT with regard to content and technique. Participants were very eager to suggest ways how ITT in Malta could be improved to ensure better prepared primary school teachers with regard to not only the 'what' but actually the 'how' and 'why' items are included in syllabi:

> *That's it. What I want to get to is that I could not come to a classroom after I graduated. I could not Emm apply what I've learnt at university to the classroom with the children. That's what I felt. I've always told you this Tessa [school's literacy coordinator]."* (Tamara, FG 1)

Structure and cohesion of ITT programmes.
University graduate teacher participants referred to a need to restructure the B. Ed (Hons) programme. They noted that they had always been told how tight the programme was, but after completing the programme they realised that there was a lot of repetition: *"At university, we had repetition. For example, the first two years were alright, but the third and fourth year was a repetition of things we had already heard. Then, really important things were left out."* (Trudy FG 4)

University graduate teacher participants concluded that theory can easily be linked with practice during ITT, but then queried whether ITT trainers actually knew how to do this. They further referred to a need to expose trainee teachers, as well as teachers, to SMSLI – more than basic theory on literacy and an introductory course related to dyslexia. Given their exposure to and training in SMSLI, they now felt that they had the experience, with conviction, to feel sure that it was the most effective way to teach literacy. Furthermore, they could not understand how the Department of Primary Education have not yet taken this on board.

Methods of Teaching and Learning during ITT

University graduate teacher participants noted that the main method of teaching during their ITT had been lecture-format. This was in sharp contrast to participants trained in the Montessori Method of teaching (Appendix L), who appreciated the hands-on approach they had experienced. University graduate teacher participants felt that the use of lecturing in ITT, combined with the focus on theory, did not give them enough teaching techniques to cope in the classroom and to feel confident that they were "doing a good job". The use of lecturing as a means of teaching was criticised. Lecturing alone, and giving teacher trainees a "book to read", was perceived as not enough to train teachers:

> *This book it will help you, not really how to go about it. In fact it was one of our complaints all the time, give us more experience, give us more what to do with it, not just how to get the information.* (Tika, FG 3)

Participants suggested several different teaching techniques that could be used during ITT, in order for trainee teachers to be better prepared to teach in general and to address early literacy learning in particular. Participants emphasised the importance of discussion, workshops, modelling, hands-on learning and experience, demonstration lessons, and apprenticeship as an important method of teaching for both ITT and Continued Professional Development (CPD) for professional teachers.

Discussion.
Participants perceived discussion as a way of integrating material learnt, an opportunity to air views, and a means to be given the space to link theory with observed and experienced practice. They emphasised that discussion must focus on pedagogy and techniques, not only on theory and research findings. Participants made a clear distinction not only with regard to *how* to hold discussions but also to *what* should be discussed. University graduate teacher participants noted that during their course there had been occasional possibilities for discussion, but again this was more focused on theory. For example, Tamsin (FG 2) explained how, during a study unit on teaching literacy, the lecturer had held a big discussion on whether "phonics"

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or "whole word approach" should be used, and the conclusion of the discussion had been that both should be used. Retrospectively, she was disappointed with this particular discussion on two levels: this discussion was "old hat" as, in her opinion, whether "phonics" or "whole word" was the more important had been superseded in the literature. Moreover "*content of the discussion should not have remained at a theoretical level and specific techniques on how to teach phonics and whole word approach should have been referred to and discussed: not just what phonics and whole word were.*"

Hands-on learning.

Participants referred to the importance of hands-on experience beyond Teaching Practice (TP). University graduate teacher participants felt that their ITT was removed from the reality of the classroom, and that using hands-on learning was very effective. They referred to one particular ITT study unit on learning patterns: "*That's the thing, that's what you need in training, you need the hands-on*" (Tika, FG 3). Participants felt that trainee teachers need to bridge their book learning and the classroom experience with hands-on learning. They explained that this could be done in several ways, including observations, modelling, micro teaching and mentoring. Tori and Tommie were very clear and categorical about this:

> *I think that even the teaching within the classroom environment, the hands-on experience will show you not only an ideal way of teaching - what should be happening - but then what do you do when you are in front of 26 children that you need to teach. We really need to see into this because we have to be trained for it.* (Tori, FG 2)

> *And it is also important that, instead of the many words at university, they [teacher trainees] are taken within the classroom and they observe teachers working with these phonics, not only one day but over a period of time, in order to see how the teacher is going about it. Because when you observe expert teachers following this programme, you really understand what is behind the programme, because if you just hear words… everything remains in the air.* (Tommie, FG 4)

Tina (FG 1) explained that at her school they were given SMSLI training in hands-on*: "we were given like courses, literally like we were children in the class… and it made a lot of sense because it really made*

sense to us". Participants noted that this technique helped them understand learning from the learners' perspective, as well as understand how to actually perform the steps and techniques of teaching first hand. This concept of hands-on also included more contact with children during lecturing. Participants felt that during their ITT they felt removed from the school experience and from enough exposure to children in classrooms. They also felt that some lectures should have been held on school premises in order to get the feel of the school environment. Tamsin (FG 2) noted that "*There should be more lectures if possible in a school environment without being assessed as well. We felt there was a lack of hands-on experience with children in the course.*" Participants felt that hands-on learning and theory lecturing would be of great benefit as *"theory and practice can walk hand in hand rather than first the theory and then all the practice." (Tina, FG 1)*

Demonstration lessons, apprenticeship and mentoring.
Participants felt that it was not enough to be told about and to have techniques explained, but one needed to observe model practitioners as well as be observed and given feedback:

> *Basically when I was, last year I was teaching Grade 1 and obviously it's all oral. At one time I thought I was doing it good and Carmen came and she said: 'No, not like that.' It makes more sense if they visualise the card first and they hear the sound properly and it's a matter of just getting into a routine. You start saying yes … it makes sense; it works more than if I were to say /a/ is for apple for example. So it's just a matter of learning the right technique, in my opinion… In my case, what you learnt at university was all abstract and no! No! No! Real things which matter… you know what I mean no real detail no, then you come and it's completely different… Literally show us how. Show us how without the actual words first just sounds on a picture and then you start linking slowly slowly obviously everything builds up.* (Tika, FG 3)

When referring to the induction of new teachers in the literacy program run by her school, Hilda noted that:

> *When you put theory into practice, it's always better so the teacher's mentored and we also encourage that they follow say for the beginning, if they have the PE and music lesson, they follow another class so that you know exactly how she's saying it and bla bla, so teachers are mentored because she goes in, she gives demonstration lessons. At the beginning she [Tessa - Literacy coordinator trained in multi-sensory*

techniques to early literacy] gives demonstration lessons to all the teachers as a group and also individually in the class you gave lessons but then this now is turning on. (Hilda, FG 1)

Participants felt that, if this were to be happening during ITT, then new teachers would be much better equipped to address the reality of the classroom effectively, as theory would come alive and opportunities to discuss demonstration lessons and mentored lessons and link to the literature would be experienced during ITT. Participants were very conscious of the number of teacher trainees that university had to cope with, coupled with the issue of finding model teachers. They were aware that it may be logistically difficult to be able to find teachers - both in terms of quantity and, more so, quality – to be observed. They felt that, whatever model was used to give demonstration lessons - whether live or recorded - it was important that demonstrations were delivered by excellent teachers on whom teacher trainees and professional teachers could model their own teaching methods. Their concern was that, given that they do not often meet teachers trained in SMSLI, which teachers can trainee teachers observe? Because of this perceived lacuna, participants favoured the use of DVDs. Tori also specifically referred to particular websites which had a lot of demonstration lessons and discussed how these had really helped her improve her teaching techniques and gave her so many ideas. She also said that she still referred to such sites for continued growth and professional development.

Fanina, a class facilitator, also noted that in her diploma course a particular lecturer brought in parents and children and actually gave lessons to the children in the university lecture room in the presence of students. This, for Fanina, made the theories come alive and helped her understand much better the effectiveness of the theory and content being presented; it also contributed to better retention for studying purposes: *"she brings people in and she's doing the flash cards and I caught part of that. I was amazed with how she was working with him"* (Fanina FG 3). Participants felt that learning in context could be implemented through demonstration lessons by live models, DVD, the use of the internet, lecturers themselves, mentoring and apprenticeship for regular and consistent periods of time. Participants

emphasised that this always needed to be linked up to literature, research findings, discussion and reflection.

Classroom observations versus observing good practices.

Participants noted the benefits of observing lessons during ITT or CPD in order to introduce new methods such as SMSLI. They further emphasised the need to carry out such demonstrations within a context, where learners need to be given the context of what is going to happen as well as reasons behind what will be or what was observed. Tika (FG 3) explained that when she started her first year of teaching at her present school, and her school was introducing her to SMSLI, an SMSLI-trained reading tutor used to come to her Grade 2 class to "*help me teach phonemic awareness*" and, at first, simply being given the observation without the explanation made her feel at a loss as to why a *"clown"* was being used as a reference point for phonemic awareness and exactly why *"magnets"* were being used to represent each phoneme:

> *what the h--- am I [doing] with the clown and [why do] you have to move the magnets… [In the beginning], for me it was a waste of time I thought, then slowly slowly the months were passing and you start saying, Ooh look, now they can read it. It makes sense… But it didn't make sense in the beginning; I didn't have the training for it.* (Tika, FG 3)

Tika's realisation and commitment to the programme and the techniques used only came after she saw the end product with regard to the children's progress and after the reading tutors explained the rationale and the theory behind the techniques used. Participants expressed the view that in training there is a need to ensure that trainees understand not only the *how* but the *why* of particular skills and exercises, again emphasising the importance that theory and practice should be presented simultaneously. University graduate teacher participants noted that classroom observations had been carried out during their first year of ITT and that, in principle, they agreed with this practice: *"For example, emm … during our first year, we had observations, observations in classes, once a week if I'm not wrong, that was excellent"* (Tamara, FG 1). On the other hand, with whom they were placed made a significant difference. Participants felt: "*Better one good observation than six weeks, seven weeks of*

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watching mediocrity" (Tamsin, FG 2). One observation with a "good" teacher was perceived as worth more than a whole year's experience of observations:

> *[During my second year] I was placed in M---- and had to do five or six observations for a number of consecutive Wednesdays [in preparation for the second year TP]. The teacher I happened to be observing in M---- was so good that I used to share my observations with everyone and I used to say: 'How I wish that, instead of six weeks TP I will be spending a whole six months observing this teacher, she is so good! Every day, every time I went into her classroom I learn something new, whereas before… [every Wednesday observing during the first year of study] (Opens her hands and shrugs her shoulders and indicates disdain with downward closed mouth and raised eyebrows).* (Tommie, FG 4)

University graduate teacher participants explained that during their first year of ITT they spent a whole year observing mediocre practices which, even they, as first year teacher trainees, could recognize as such. They explained that, at times, their observations had been a waste of time and experience because, even they, naïve and new to the profession as they were, understood that they were observing "bad" teaching both with regard to teaching in general and, in particular and in retrospect, with regard to teaching early literacy. It was therefore suggested that teachers should be vetted better before being observed and that mentor teachers should be handpicked.

> *… observations in the first year, in my opinion, I wasted a lot of time because, what I mean is that the teacher I was observing, for her, multi-sensory did not exist, and I felt that I was wasting my time. I would have preferred to have watched someone who knew what she was doing.* (Talia, FG 2)

As an alternative, and within the context of the difficulties encountered due to logistics, they favoured the concept of observing good practices, even in a virtual environment, as a better option. They noted that observations experienced by first year primary teacher trainees need to be designed differently as their experience, as well as that of their friends, was solely based on how professional and "good" teachers they happened to be pegged with were. Participants noted that observing model teaching was a breathtaking event, and that all teacher trainees should have the opportunity to observe such good practises. A concern voiced was that if you were to include training in SMSLI you then needed massive training for qualified

teachers themselves: *"But you have to emm … I don't know, you have to give, I think, give lessons to the teachers themselves."* (Thea, FG 1), or else just use only recorded demonstration lessons as noted above.

Feedback, assessment and the learning process in ITT.
University graduate teacher participants felt that their course did not allow for feedback as much as for formal assessment. They noted that even during their TP there was no time when feedback was given and they were also not assessed. They felt that this was not only detrimental to formative growth and improvement but also contributed to higher levels of debilitating stress and to a moratorium to gain confidence. Although they understood the importance of assessment during TP, they were disappointed and concerned that trainee teachers did not have the opportunity to receive feedback without being assessed. They understood that university examiners cannot stay with trainee teachers throughout their TP. As an alternative, participants suggested the use of in-school mentoring. No participants commented that this might raise problems as to the uniformity of the quality of the feedback received. However, they insisted that feedback needed to be given by model teachers.

The use of Video Feedback, coupled with hands-on learning with immediate feedback and demonstration lessons with discussions as explained above, was also proposed. Toni (FG 1), who is also a singer, and very familiar with the use of video feedback both for self and from others, notes:

> *[What] we don't do a lot in Malta is the video recording of the sessions, where you actually see yourself doing it because that's where you learn a lot. For example, I can take it from singing, you think that you sang very well then you see the video and you say, 'oooh, much to improve there!' So that's where you learn actually when you see yourself doing it because you can [see] even [from] the non-verbals you're not aware of so that's eh… maybe because it takes technique to, for example, I don't know to say /k/ and even non-verbal movements with your head, facial expressions. It takes a little bit of practice.* (Toni, FG 1)

ITT and resources.
Participants felt that the "poor quality" of the ITT resource room was another reflection of where the emphasis in ITT was - theory and not practice.

They felt that the ITT resource room was not equipped well, and that during ITT they were not given enough training on choice and use of resources. Tamsin (FG2) explains:

> *In fact, I had suggested when before we left university, I'd suggested that the teacher's resource room be much better stocked so that we can come in as a library, take, take resources out and return them you know like if we have a week doing a theme we can come in and take resources, put them on display in our classrooms and bring them back you know instead of having to always produce new resources ourselves.*

Teaching Practice (TP)

In the present B.Ed. (Hons) Primary course, the University of Malta organizes the TP as follows: Year 1 - Weekly observations and three weeks TP (used to be two weeks); Years 2 – 4: Six weeks TP each year. TP as a concept was seen as a positive aspect of ITT, but participants felt that it should not simply be a six-week block assessed TP, but a continuous experience which would also include mentoring. Participants referred to the structure of the Diploma for Facilitating Inclusive Education. This Diploma has a continuous Practice Placement - full time if the trainee is working in a school and a minimum requirement of two days a week if the trainee does not work in a school. Participants felt that the way teacher trainees were prepared for TP focused more on assessment than on development, whilst, if the TP were continuous, this would allow not only for development but for the true integration of theory and practice. Participants were very aware of difficulties with regard to TP logistics and also referred to these limitations as they were reflecting upon the ways TP is presently implemented and organized in Malta and ways TP can, according to them, be improved to a more fruitful experience.

Experience of TP.
University graduate teacher participants noted that their memory of TP was a whirlwind of record keeping and preparation with a direct focus of making sure that one "impresses" the TP tutors. They felt that this had a negative impact and that, ironically enough, the only aspect of ITT which was supposed to be "practice" was also turned into a theoretical experience, to the

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detriment of the actual practice. Participants felt quite disappointed: *"the only thing that we had, the only time that we had with the children, in my opinion, they ruined it as well because once they got out that CD [compact disc] the CD of TP you don't remember?"* (Tamara, FG1):

> *I think that TP is more focused - Tobia, I am Tobia - emm, more focused on paperwork. A lot and a lot of paperwork has to be completed and the file has to be pristine, because if they [TP tutors] find something which is not exactly as it is supposed to be! So I ended up arriving in class sleepy. I do not know if other people had my experience, but I used to spend hours on end in the evening just to prepare the file – to ensure that all was as should be. Then, my mind would be too tired to practice what I have learnt here.* (Tobia, FG 2)
> *Of course, they had given us a CD with all the layouts we had to do our lesson plan and set evaluations, it happened during my last year. The file, yes, is really more important for them [university teacher trainers]. They are not focusing on what the person is actually doing in class. But I used to worry more about my lesson plans, to be honest with you, and about my presentation of the evaluation and my - the administration file. In my opinion that's what used to be TP. So if you ask me, my goodness,] what do you remember of the TP? The lesson plans, the charts, not the actual performance in class.* (Toni, FG1)

Preparation for TP.

University graduate teacher participants noted that they were exposed to what to do to prepare with regard to record keeping and reflection of the teaching experience, but then they were not actually given the techniques to the teaching and had to figure this out themselves. They felt that they had not even been prepared enough on how to prepare resources and how to use the resources prepared, and that just being given the concept and having the opportunity to discuss techniques did not mean that they would be prepared to actually "perform" in the classroom. Participants felt that they had not been prepared and supported enough to have a fruitful TP experience. They felt that just giving them '*what*' to do was not enough. They also needed the '*how*' and the '*why*':

> *but we were given a scheme of work; we had to do this, this and that in six weeks and six books, a scheme of work you had to prepare all the lesson plans, evaluations. But we were not prepared for the children: resources, flash cards.* (Tamara, FG 1)

TP and assessment.

Participants noted that the issue of TP and assessment might have negative impacts. Tamsin (FG 2) noted that *"The only time that you have somebody in the room with you, is when they're assessing you'"*. They felt that the fact that trainee teachers are assessed throughout the six weeks was a detriment to the learning experience of trainee teachers, and that there should be a learning moratorium. This, they felt, had to be linked with the concept of mentoring:

> *Six weeks could be broken up. The first two weeks you'll have the class teacher or someone on a regular basis to see your problems. You can discuss them without being assessed and then the last four [weeks] you're on your own. Go for it, you know, you see what you can do but not from week one. You know, you're breathless sort off.* (Fiona, FG 2)

As already noted above, participants noted that the use of mentoring and apprenticeship - continuous experience in the classroom - could also be an alternative to balance feedback and assessment.

Mentoring, apprenticeship and TP.

University graduate teacher participants explained that TP, particularly the first TP, should be linked with the concept of mentoring and apprenticeship, where first year trainee teachers could be given small activities to do in the classroom whilst in the presence of mentor class teachers. Participants were aware that this needed a lot of planning as well as the correct choice of mentors. Some participants were concerned with the logistics hassle this could create, but others referred to the use of classroom teachers themselves, provided that these teachers were versatile in SMSLI. Tamsin (FG2) recommended that, *"You have to have somebody there mentoring you… Even the class teacher I think it would have helped if they were in the classroom with you".* Talia (FG 2) suggested that:

> *during the first year we need to be in the classroom not on our own, we should have a mentor. Maybe not all the time with you because obviously that requires a lot of human resources, but in the first year, they need to send you.*

and Tika (FG 3) reflected that

you would need a teacher with you. Definitely, you can't just throw the student in the classroom and do that because that needs guidance. And to teach multisensory you need a guidance for literacy, you need someone to guide you, to do it properly. Once you get the proper technique, it works because you could be doing it and doing it wrongly.

Expertise of university TP tutors.

Participants queried the "expertise" of some of their tutors and whether TP tutors actually had the experience, expertise and knowledge to address linguistic content and teaching techniques, both in general classroom practices and, particularly, with regard to SMSLI:

Sometimes you find someone [TP tutors] who graduated, completed his masters and his PhD. within an extremely short space of time, he is given an important position without having had little contact with children; and they send him to assess you. On a practical level he would know less than you, because all he would have would be theory. Right? Sometimes you find yourself faced with this kind of people - a race to get all the certificates possible; and then you find them in your face to criticize and to teach you. Experience-wise, with kids, you would be at par with him, as all he would have had would have been more theory. Someone who has had experience in class will tell you to listen to him and learn from his experience and what you should or should not do, and what works better or not. (Talia, FG 2)

But I saw this rigidity in the tutors we had for TP. They observe you implementing a method and they really do not have an idea of what this method is, even in the kinds of comments they give you. They do not have an idea with regard to why you are implementing a particular technique. The tutors - and this is something not only I experienced, a lot of my colleagues commented on this as well - did not have any idea with regard to why we were using multisensory techniques. (Frances FG 4)

Participants were concerned that university lecturers themselves did not have enough first hand and field experience to be able to support trainee teachers and to give sound advice on how to improve teaching techniques. Participants perceived university trainers as able to evaluate general classroom practices such as discipline, classroom management, appropriateness of topic and resources, but then perceived university trainers as weak with regard to specific teaching techniques in general and with regard to SMSLI in particular. In hindsight and after being exposed to SMSLI,

participants felt that this lack of experience with SMSLI was reflected in the comments given by TP tutors in TP evaluation booklets. Participants noted that university lecturers' lack of knowledge and awareness of SMSLI may be one of the reasons why this element of teaching early literacy is not included in ITT programmes.

Training beyond ITT

Participants noted that, since they did not feel equipped enough to address early literacy after graduation, they had tried to look for professional courses after graduation. Participants valued CPD and saw this as an important aspect of local teachers' professional growth, particularly because SMSLI was not covered in ITT and because they were not pleased with the lack of practical knowledge and information experienced during ITT. Participants discussed two ways how further training could be held: either out-of-school as CPD courses or in-school as peer tutoring.

Continued professional development (CPD).
Participants had participated in different (CPD), but these mainly included courses related to dyslexia. Thelma (FG2) had been exposed to these techniques through her specialisation area of inclusion during ITT but wanted more in-depth training and knew where to go. She had also encouraged other teachers to join her. Participants noted that these courses had managed to blend theory with practice. Participants valued seminar- and workshop-format learning as well as the fact that actual children's resources had been presented. They had had the opportunity to understand why and how these resources could be used:

> *It gives you the stepping stones and to know how to teach and what to teach because emm … I think in middle school, when I first came, it was an idea of taking on board what's already here and I think when teachers go to new schools they can't really do anything new, they have to follow what's there already and that's maybe quite even a problem emm … and I think it was only when I started myself going to courses on dyslexia and other courses learning and on how to teach emm … that you'd become aware of … and then you can start questioning and start challenging what's in the school and whether we can make changes. (Tricia, FG1)*

Participants compared this type of training with the three day in-service courses run by the state. They felt that the in-service courses were not enough as there was just a 15-hour listening exercise over three mornings. Participants felt that if the course is presented on a weekly basis, over time, they would have time to practice what they were learning at school and then discuss in class during, for example, weekly CPD sessions. Participants noted that the method of three day in-service training was not as fruitful as on-going training.   Trish (FG 3) explained: *"so many tangents that the basic idea why we were there was lost. Three days is not enough…Three mornings…15 hours… are not enough."*

Peer tutoring.

Participants felt that *'peer coaching more or less'* (Tamara, FG 1) was a valued experience and would be a good support for CPD. Tina (FG 1) explained that this is carried out in her school, and that when she had experienced peer tutoring she had found the experience very valuable and enriching. Trudy and Tabatha (FG 4) explained that, after one of their colleagues had attended a course specifically on SMSLI, she shared her learning with them at school: *"Yes, she used to give us a lot of ideas and we used to base our planning on them" (*Trudy). Trudy and Tabatha noted that later on they attended the same courses as their colleague and could really understand and put together what she had been sharing with them.

Teaching Reading

Participants noted that they felt well- trained in story telling, whole word approach and the "big book" method, but that they lacked training in phonics and SMSLI, as only the conceptual difference between phonics and "look and say" (Whole Word Approach) had been addressed during their ITT. Moreover, during ITT, they felt as if they needed to "choose" between methods, when the "best" method had not even been mentioned. Their experience and their exposure to SMSLI during CPD, school inductions and on their workplace, had led them to meta-cognitively conclude that one needs to be versatile in and to use SMSLI as they had experienced the benefits of this method. They felt that ITT should address all aspects of teaching reading - in theory and in practice; and teacher

trainers should ensure that trainee teachers are exposed to SMSLI. Participants felt it extremely vital that, during ITT, trainee teachers understood the need to include and teach all methods of breaking the code to literacy, as opposed to choosing one way, as is embraced in SMSLI:

> *A lot of [teachers] think that that's [multisensory] a way and that's [storytelling] a way. These have to be together because I think that the problem of a lot of teachers is that they think that they need to eliminate a method in favour of another; and a lot of parents are thinking that everything needs to be changed and now their children must learn phonics only.* (Trudy, FG 4)

Tamara noted that they did address literacy during her ITT, but that : *"again I feel that it was all theory like you know what people [academics and researchers] said, like we did not get the chance to practice with the children"* (Tamara, FG 1). Participants noted that their exposure to SMSLI had helped them understand the value of all methods, and that they had to ensure that they used all methods for the benefit of all children in their classrooms. Participants noted that this knowledge should be presented in ITT and in CPD to all present and prospective teachers. Participants also voiced their concern at the lack of awareness of SMSLI by colleagues [trained teachers].

Exposure to SMSLI in training courses.
With regard to SMSLI, participants generally felt that ITT had not prepared them to teach using an SMSLI programme. When looking at differences among participants, participants seem to fall in four categories (at times participants fall in more than one category):

1) Dyslexia Group - B.Ed. (Hons) Primary graduates whose only exposure to SMSLI was one study unit on dyslexia by Dyslexia specialist Dr Firman

2) No Exposure Group - B.Ed. (Hons) Primary graduates who felt that they had not been exposed at all to SMSLI

3) Inclusion Group - B.Ed. (Hons) Primary graduates who had read Inclusion as an area of specialisation. This specialisation had been available for one B.Ed. (Hons) Primary Cohort only (2001-2005)

4) Diploma Group - Learning Support Assistants who had read the Diploma in Facilitating Inclusive Education.

The Dyslexia Group felt that they had only been introduced to the concept in relation to dyslexia and not to general classroom teaching, and that 14 hours had not left the lecturer much time for proper teaching, apart from presenting the concept. Participants felt that this was not enough to prepare them, something which became very evident when they were actually taught SMSLI after they graduated, either as part of their school programme or out of personal interest. The No Exposure group were quite concerned about this lack of knowledge and training: "*University taught us absolutely nothing of these. Absolutely nothing*" (*Tabatha, FG 4) I* and felt disadvantaged. The Inclusion Group and the Diploma Group reported a difference in training and felt that they had been introduced well to the concept and had an advantage over their peers and other graduate teachers. During their training they had had specific study units on SMSLI which included observations and modelling in principle and as a mode of learning: .

> *What I can say is that when I started working, two of us who had graduated together, were each given a Year 2 class. Emm... the other graduate had not read inclusion as an area of speciality and I had seen the difference in literacy, yes, literacy. I am not saying I felt very confident, but I knew what to do and felt better prepared than my colleague.* (Thelma, FG 2)

Tamsin (FG 2) noted that her area of specialisation had been English. She felt very well prepared with regard to choice of texts for children and how to address reading comprehension: "*my course had specialization in English, so I feel that I was prepared as far as different texts and how to present texts in a different way like a thick book or emm… feeling book." S*he reflected that she had lacked exposure to training with regard to breaking the code to literacy. LSA participants noted a lack of sufficient time and that the Diploma should consider more input on SMSLI. Participants noted that, since they had not been exposed to SMSLI, and since they had only been exposed to literacy pedagogy from a theoretical perspective during ITT, before learning about SMSLI, they tended to fall back on how they, as children, had been taught:

> *When I left university, I started teaching Year 1. At the time, I was not aware of multisensory techniques or phonics. I started teaching the way I myself was taught – the 'look and say' method, groups of words, you learn them by heart, flashcards eh … dictations and eventually you learn them.* (Trudy, FG 4)

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Use of multisensory in teaching versus SMSLI.

Participants noted that specific courses designed to address SMSLI, or else courses on how to teach children with dyslexia which they participated in either at their school or as CPD after they graduated, made them realize the difference between general multisensory techniques for teaching and SMSLI, as defined in Chapter 5. They appreciated and understood the difference between the general multisensory techniques as taught, for example, during their Montessori training and the SMSLI techniques as taught by trainers at their school or during courses they had participated in. Sunta (FG 3) explained how she learnt and understood what SMSLI was through a correspondence course she had followed, and explained that she had changed some techniques which she had learnt through Montessori, for example the procedure of addressing "onset and rime", which is carried out differently at her school, ensuring that the students do not change the left right direction and orientation of reading:

> *Montessori as you [Trish] said it's multisensory it's about multisensory but it covered everything not just literacy. Now emm … from my experience emm … where literacy is concerned, the techniques were very different and the studies have shown that what we used to do Montessori wise during those days, is not feasible today. For example, we used to tell them /at/ therefore /c/ /at/ whereas now it is not like at all so that is something that I had to change.* (Sunta, FG 3)

Need for linguistic knowledge.

Participants emphasised the need for linguistic knowledge such as rules of language and linguistics, and for exposure to correct knowledge and skills in order to teach appropriately and effectively. Tricia (FG1) for example, referred to what she realized she "did not know" when she attended a specific SMSLI CPD:

> *Teacher's knowledge of what the rules are, of what the sounds are, of what the blends are, what the funny words are that we use as well, as they appear in the books. On teaching knowledge I only really knew about the sounds and blends etc. Once I went to the course, once I went through the course so emm … I think it's being taught [that is important], to be honest.*

Whereas Tina and Tamara (FG1) commented on the realization that the "sounds" of the English language are not the 26 letters of the English alphabet but: *"The 44 sounds. The 45 sounds that the alphabet provides us with... It's*

quite a recent learning experience for me." (Tina, FG1*). "Yes, we never experienced this at University, we never had lectures about this."* (Tamara, FG1)

Thelma noted that the knowledge provided during her area of specialisation - inclusive education - in her formal training, led her to feel confident and equipped. She reflected on the knowledge she had acquired and the knowledge of fellow graduates who had not had the same area of specialisation. Tammy (FG 4) noted that she learnt some linguistic knowledge because, she narrated, she had been trained in the early nineties, and at the time teacher trainees could choose two areas in the B.Ed. (Hons). She has chosen Maltese Language and Early and Middle Years. She felt that the Maltese linguistics she had been exposed to was something which really helped her in teaching early literacy and commented that this, however, was "not the experience" of all her cohort. She reflected that she could then address the concept, translate and transform the Maltese linguistics content learnt to be used during early literacy techniques and to teaching reading and spelling rules. Tammy's concern was that trainee teachers who are not exposed to language linguistics would not be prepared enough to teach early literacy effectively: "*From the linguistics content, people who do not have language [training] find it difficult to understand."*

Participants were eager to refer to examples in order to highlight the difference in knowledge and skills that their SMSLI exposure had brought about. Examples they mentioned (Table 24 overleaf) included the major aspects which make up an SMSLI programme. They commented that they had learnt this knowledge not during ITT but during CPD on SMSLI courses attended, where not only the content but also how to teach this content to early readers were addressed. The fact that they actually referred to specific rules and techniques is indicative of how much they gained from this training, and the positive effect this had on their profession and their teaching techniques. Participants insisted that all early educators should have this linguistic background in order to teach literacy effectively.

Table 24: SMSLI knowledge proposed by participants

Reading and spelling rules
Participants became aware of the importance of rules in literacy and that these rules make not only the Maltese language but also the English language a much more "regular" literary system. They referred to their amazement at how "regular" a word becomes when rules are known: "*I mean, when I was in Year 2, I felt that small examples such as long and short vowels [helped]. The magic 'e', I also had a better idea than my colleagues.*" (Thelma, FG 2)

Use of resources –
Participants noted that it is not enough to be presented with resources and to be made aware of resources. One also needed to be taught *how* to use resources as well as the *rationale* behind their use, their presentation and their actual creation. This, participants felt, was the correct blend and fusion of theory and practice**.** Graduate teacher participants noted that very often, during ITT, there were shown resources but were not exposed to how these should be used, leading to resources used incorrectly by trainee teachers:

> "*what has helped us in our multisensory programme is the fact that we have the chart where each, the chart, ah the frieze… where each letter has a corresponding picture right and we're getting the sound from the beginning of that picture like that I feel that we're more sure that everybody is giving out the same sound.*" (Tessa, FG 1)

How to teach vowel sounds
Graduate teacher participants noted that during their ITT linguistic knowledge seemed "assumed" and therefore never addressed, with the result that they became aware that they were not only teaching in the wrong way but also "saying the letter sounds wrongly", particularly in a bilingual situation. Participants also referred to their lack of knowledge, prior to SMSLI training, with regard to English long and short vowels as opposed to Maltese vowels, and how these should be presented and taught to the pupils: "*I think the vowel sounds are the trickiest… Yes like /u/ especially of umbrella.*" (Tina, FG 1)

How to teach digraphs and consonant blends
Participants referred to the difference between consonant blends and digraphs and that these need to be approached differently in the classroom. They noted that unless teachers themselves are cognitively and meta-cognitively aware of the difference between digraphs and consonant blends they would then not be able to teach them appropriately as these needed different techniques. Participants referred to the importance of knowing the "content" - the "subject matter" of literacy. They further noted that unless teachers were aware of the knowledge, they would never be able to teach appropriately and pupils would not be presented with a structured system: "*So they might know the word church but they're not gonna know it on 'look and say', so it's the sound together when they see the 'c' and 'h' next to each other and know that it's /ch/ that they're going automatically read /ch/*". (Hilda FG 1)

The sounds of the English reading system
Participants noted their surprise when they first learnt that there are "over 40" English sounds.

As to what was actually covered regarding help to address early literacy in ITT, participants in general felt very prepared to address the Big Book technique, different genre of literature, reference to what phonics are, the whole word approach or phonics debate , feely books, Look and Say method, reading theories and story telling. When referring to what aspects of teaching literacy they were exposed to, participants emphasised a lack of linguistic knowledge and a paper and pencil mode of teaching. This, they felt, was not sufficient. Participants who had been exposed to SMSLI through their area of specialization or through CPD noted the importance of linguistic knowledge to be able to teach early literacy skills effectively.

Reaction to the realisation of a lack of knowledge.

How much knowledge and techniques they had been lacking brought emotional reactions. Given the diverse emotions expressed and observed during the FGs, I felt it important to discuss as it brought out the effects of realization and knowledge on graduate teachers. Participants felt shocked at the realisation that they were not equipped to teach early literacy: Participants noted that they felt at a loss and rather let down by their ITT as they graduated with a perception they were well equipped to teach but then felt left in deep waters when the school noted what was expected of them. Shock was also accompanied by the shame of having to admit that they did not know what to do, at times with teachers who had not studied at university or with LSAs. Participants explained that it was as if they were given a "really cold shower" and put "in your place" - a graduate without the necessary skills and knowledge. Table 25 presents a series of emotions as gleaned from the transcripts.

Shock and shame was accompanied by anger. Graduate teachers noted that they had entered the ITT with the assumption that they would become professional teachers. The fact that they were, as it were, short-changed made them angry and wonder what else was omitted from their ITT. Graduate teachers were also upset that they were not trained and prepared for their profession; they were also concerned that they might be affecting children negatively. Feelings of fear and insecurity by participants were also referred to.

Table 25: Feelings in relation to realization of lack of knowledge

Shock
No, I mean with the correct training, we managed it quite well, I mean at first as you said I mean you do get like sort off what's coming you know like a shock (Thea, FG 1) *No, it was a shock when I got here* (Tina, FG 1)

Shame
In my year we did not have a specialization year. Emm I got a shock. I told them [colleagues who had already been exposed to multisensory techniques to early literacy] teach me how to teach. My goodness it was shameful – I had just graduated. (Tori FG 2)

Anger
When we show our new teachers this programme that we have you know, because we have a teacher's handbook as well for it, that is something we wanted in the school… their reaction is nearly always the same: 'Why weren't we given this at university, something like this at university?' (Tessa FG 1)

Upset
'I wasn't prepared, I wasn't prepared, I must admit it, and I wasn't prepared.' Tamara (FG 1).

Fear and insecurity
I got a fright when I realized that I had left university not knowing how to teach phonics. (Tori FG 2)

Frustration
I used to tell her, 'How do I go about it?', and she'd come with the story because that in Grade 2 for example we did the /w/ /a/ was the /woo/ and the 'witch'. But I didn't know it in Grade 3, so the children knew it from Grade 2 and that's the thing. My goodness! The children knew it and I'm there like an idiot learning it. (Tika FG 3)

Bewilderment
*'New graduates! At university they do not seem to get **it** as they are always coming to us and they expect like to get ideas from us. Some people are not trained for primary, they're just employed. But then! But then! B. Ed. (Hons) Primary as well!* (Tuna, FG 3)

FG participants had been on a high and so sure of themselves when they graduated, thinking that they were now adequately prepared, and then found a different reality at school. This left them insecure as they felt that they had no gauge with which to measure what was missing from their training - they did not know what they did not know or what they should know: this led to feelings of frustration at both their lack of knowledge and towards the system that had "prepared" them. Although they felt good about being able to refer to personnel for advice, they also felt frustrated at the fact that they did not know "basic

material". Participants could not understand why such important knowledge and skills were not addressed during ITT. They queried why this was happening when in our small island community there were people in the field training teachers on this aspect of literacy. They argued that whilst they could understand situations where non-graduate teachers were not aware of such techniques, they could not understand why the same was applicable to graduate professionals. FG participants were concerned that pupils were being affected by this lack of knowledge in the short- and in the long term. Petra noted a significant difference between two of her siblings and insisted that she was very concerned that ITT training was not including important literary techniques.

Parental Education and Involvement

Parental involvement in the teaching of reading to young children was seen as vital.   Participants expressed their concern that if parents were not aware of or versatile in the SMSLI they would, like teachers, simply fall back on the way they themselves had been taught and end up with a situation where different methods are used at school and at home, confusing the learner: *"you teach them one way at school and then another way is used at home."* (Frances, FG 4). Tina (FG 1), for example, referred to the importance of *"Parent meetings regularly which brings the whole community involved in the programme."*"

Parent information and acceptance of changes.
Participants were concerned that if parents' meetings are not held and techniques not explained in full, parents would actually start complaining and viewing the new techniques as detrimental: *"the parent will start speaking negatively about the programme as [they think that] the children are getting confused"* (Tabatha, FG 4). Tessa (FG1) noted that:

> *I mean for them it [SMSLI] was something very new em … and they were questioning why we switched over to teaching letter names first and not letter sound. But then as the years passed you know they realized that, yes, it was more child-friendly and it was making more sense to the children and we were getting more children than before. What, as a school, but this happened only at school, what we do we do literacy sessions for parents, but for parents in Grade 1 and Grade 2.*

Professionals referred to the importance of explaining to parents that SMSLI goes beyond and incorporates both phonics and sight word approach. They noted that schools should be responsible for explaining this to parents. Participants also spoke of the frustration of experiencing such negative attitudes from parents, even outside the school, when parents are not aware of the methods used at school: *"Last time I was in R---- in a shop and there were parents' comments: My goodness, they [the school teachers] have driven my daughter crazy with these phonics, they made everything go crazy."* (Tommie, FG 4)

Parental involvement in the teaching of reading.

Participants stressed the importance of parental training to enable them to be totally involved in the teaching of literacy to their young children. Participants perceived the benefits this strategy ultimately brought about. They also felt that parental training and involvement would not only lead to confidence but also to trust in the changes the school and teacher were proposing, and a willingness to learn in order to help in the appropriate manner:

> *Holding parents' meetings at the beginning [of the school year] makes parents confident with the techniques that will be used; and not you just telling [the parents] leave it in our hands. Parents who can help their children will be able to help them properly,. and you will avoid situations where parents are helping in the wrong way. [I tell them] it is better not to help children at all for now [until we provide you with the training] if the parents would be helping in the wrong way.* (Tommie, FG 4)

System of Changing

Participants discussed the need for change in teaching techniques, particularly with reference to early literacy teaching techniques. A number of themes with regard to what affects motivation for change and how change should be processed came out.

Resistance to change.

Participants noted that they were aware that teachers are resistant to change due to difficulty to change from set ways, lack of interest in and motivation for new learning, and an unwillingness to spend time planning new lessons. Tika (FG 3) believes that one major reason why change is seen as

something "tragic" is because "*everyone gets set in his own ways.*" Other participants were upset as, at times, this resistance to change was due to teachers being unwilling to put in the effort and the time to learn and plan, and this quite disheartened them from both a professional and a vocational perspective. Trudy (FG2) lamented:

> *Nowadays, we do not share our experience so much [with other schools]. When Ms S------ took us to other schools to share our experiences with other Year 1 teachers, we found so much resistance and they became quite hostile. Ms M----- and I had gone, (shrugs shoulder) resistance that this new method was a waste of time, extra work, too much work, this is impossible.*

Commitment to change.
The importance of the Senior Management Teams' (SMTs) involvement was seen in a number of ways. Even though uninvited, the Head (Hilda) of teacher participants in FG1 came in to give her input, whilst the Head of FG3 apologized for not being able to attend due to an urgent meeting. These two heads have embraced SMSLI, and new teachers at their schools are expected to be inducted in this method of teaching:

> *Even if one teacher tries to bring in a change, unless she has the group because here we're team teachers we're not visiting - teaching and plan together, unless the group agrees so there's a core of teachers agreeing and changing or they observe each other or maybe there's also the support from on top because if the support from on top is not available then no changes happen.* (Hilda, FG 1)

Tessa (FG 1) explained the history of events with regard to the introduction of SMSLI at her school. At the beginning there was no programme, and in the early years of her working at her school only the sight word approach was used. It was only when the "benefits" of the proposed SMSLI programme were truly understood by the teachers and the Senior Management Team that changes were implemented and the school was convinced that it should continue this programme:

> *Then, seven years ago when we took up the programme obviously this all changed and in a few years we could see that it did make a difference Then with the programme obviously I mean all this [sight word approach only] was scrapped, we started how the programme starts with letter names and vocabulary of the pictures that corresponding letter like that*

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then when we come to the letter sounds the transaction is smoother and in a couple of years we could see the difference in our literacy you know in what the children were producing. (Tessa, FG 1)

Need for team work.

Participants felt that in-class and in-school teamwork and cohesion were extremely important and that only then can one work across years and have continuity in a structured plan to teach early literacy. This meant peer tutoring and feedback, such that the whole team is working in the same way and using not only the same techniques but the same resources, since in SMSLI picture cues are so important for learning, memory, transfer and generalization. Tommie (FG 4) narrated a negative experience of teamwork: *"I had a facilitator with me and once I told her that I was not agreeing with what she was doing and that she was wrong [and she said] 'No, that's not right.' Then I will not say it again, I only say things once."*

Decision making process.

Participants felt that teachers needed to be part of the decision making process in order to embrace changes. This also involved giving information and background knowledge of not only "what" but "why" and "how" proposed changes would be for the better. Trish (FG 3) notes: "*We should be made to understand the importance and why and wherefore it's going to take us not: You have to do this. That, that's it. That is what you must do.*" Participants noted that such an approach would make teachers less resistant to change. Hilda also referred to the importance of involving the teaching staff in discussing and deciding upon any proposed changes and that one needed to make sure that the teachers were on board as ultimately nothing imposed would work and be implemented well.

With regard to change from one teaching method to another, participants felt that the main ingredients required to be present in the decision making process involved: (a) the commitment of the SMT; (b) the willingness and openness to change; (c) the support of all the teachers; (d) the awareness that something better was needed; (e) change followed by a difference for the better, and (f) the process of decision making for change.   Participants felt that the introduction of new techniques would be undermined by individuals not

implementing the changes proposed in their classroom if these elements were not considered and that, more often than not, this happens due to lack of belief in the new system and to fear of failure.

Effectiveness of Programme

Participants were unanimous in their opinion regarding the effectiveness of SMSLI. Tori (FG 2) stressed that, "*I strongly believe that this approach is 100% effective. We just have to put it into practice.*" Whilst Thelma (FG2) explained her satisfaction when she hears her pupils read, and even if they were to come across a difficult word they had never seen, she sees her pupils trying to read the words since *"they know it's [reading] techniques how to blend sounds."* Talia (FG 2) and Thelma (FG 2) further explained that even the errors in reading that their young emergent readers make are revealing the effectiveness of this approach to teaching literacy: *"the word may not be correct but they way they write it (Talia) is correct (Thelma). Yes, phonetically it is correct (Talia)."* Tessa also referred to the time and success factor of the learning: "*We are convinced because of the results that we see and before the results in literacy... children used to take longer to achieve.*" Frances (FG4), a class facilitator, who is also a parent of children attending a school where SMSLI was implemented, also referred to the effectiveness of the programme from the perspective of a parent:

> *I really saw the difference. I am in contact with children all over Gozo and there is a difference between the children from X----- and other school children who do not have [exposure to multisensory techniques]. I mean, that is what I see. I see from J----, my son, he has a report like other children. He is nothing special. However, he has progressed much more as well, in reading it is as if a miracle has happened!* (Frances, FG4)

Participants explained how SMSLI helps pupils understand how and why they are doing something and addresses a meta-cognitive level of reading which then allows pupils to read better: "*Whereas the programme, it makes you understand what you're doing, you know and understanding something, understanding the process and why and how, you know makes you more receptive to the learning experience rather than relying so much on your memory.*" (Tina FG 1); and Tessa (FG 1) continued: "*I think when we see that*

the child is really seeing sense out of it - that when he decodes." Participants also referred to the fact that the effectiveness of such a programme was that is was structured across the early years, from Kindergarten to Year 3. Participants noted that if there were no continuity and structure, then the programme would not be as effective:

> *I had in fact remained amazed with this fact. In my class, I had the youngest of four brothers. His brothers had also learnt how to read. However, he left Year 1 able to read fluently. So much that even his mother was left amazed. His mother kept telling me: 'He is the only son who reads and still reads now that he is in Year 4.' I mean she really motivated me. I was more convinced than in the beginning. However, if you are not structured, as from Kindergarten, one year after the other, and if there is no motivation, then the system would not work. The programme would make no sense unless you do not start at the foundation level and are structured.* (Trudy, FG 4)

Not just phonics.
Participants commented on the Jolly Phonics programme (Lloyd, 1998), a programme used by local state schools. Whilst they appreciated its phonics structure, they noted that SMSLI was a more inclusive, comprehensive and successful approach than just merely using the Jolly Phonics Programme (Lloyd, 1998). They also emphasised that SMSLI is not just phonics, it is much more.

Need for one policy.
Participants referred to a need for one policy because teachers were using different ways to introduce literacy and not all of them were effective and beneficial. Tina (FG 1) compared her experience at her school, where SMSLI had been introduced, and her work in a support programme (Macelli & Cini, 2005) run by the state:

> *Once you're immersed in it I have to mention this, emm … I used to work with FES and they had this whole theory about literacy and stuff you know phonics, Jolly Phonics, and then I had this programme where they're different… So at a certain point I was really mixed up, completely mixed up, and my opinion is why not have a standardized programme where everyone can, you know, you can follow it? All the educational system 'cause it's, it's getting out of hand in a way.* (Tina, FG 1)

Tabatha (FG 4) referred to the importance of giving teachers a free hand and the freedom to *"make[s] [t]he[i]r own way out"*, but also saw relevance that, since teaching using SMSLI is more beneficial, the Education Department should invest in this technique: *"More stress on what we have to teach. So that there would be some uniformity because I teach Year 1 one way - I would be speaking with a teacher from S----- and she would have done nothing of the sort."*

The learning process.

Participants noted that, apart from being effective, a good programme had to be an enjoyable experience. They argued that resources and techniques used to introduce literacy must be enjoyable to pupils, so that the effectiveness is not only in the result but also in the experience:

> *They like it, I mean for joining letter sounds cause then it's up to you, you know, to make it as friendly as possible, for joining letter sounds 'cause that's when they start in Grade 2, we've adapted this teddy bear and it's just the head of the teddy bear on a chart and there's a line underneath an arrow. Each class had given a name, the children name this bear emm … say Snoopy I don't know, Snoopy only says sounds, so the children know.* (Tessa, FG 1)

> *So you're playing. So from cat it became a rat and then from a rat it became if you change the last letter it becomes something else … it became ran for example and then from 'ran' it can become a 'van' if you change the first letter and so they'll play around with letters like that.* (Toni, FG 1)

Participants were aware that ultimately one looks at the success of the results, but noted that if a system is both enjoyable and effective, then its techniques are by definition more effective with regard to the process and product of learning:

> *Although outcomes are important,I think the process of learning is very important which we tend to forget like 'ok you're saying, is this documented and [do] we have the results' but just apart from results, yes results are important but the process of learning is equally very valuable… You know, and when you're experiencing the learning process with the children using these methods you can see the … not the ease with which they handle it but you know they're more (bunches her palm facing upwards).* (Tina, FG 1)

Inclusive methodology - Success for all.
Participants noted that SMSLI makes literacy more accessible to children who are weak learners or experience specific learning difficulties (SpLD), such that the difference between children with and without difficulties becomes less: "*because the line is becoming so fine, you know*" (Tessa FG 1). Participants referred to this programme as inclusive since it leads to success for all children, and they also noted that it directly links individual sessions to classroom teaching as needed because the same system - techniques and resources - are used to teach reading to children with or without SpLD:

> *It makes more sense to me and to the children. They pick it up better than before when we were expecting them to keep everything in their memory and remember, and I mean even those children who we used to call, you know, weak, now they themselves are seeing that even they can do it, not just those particular children...* (Toni, FG 1)

Tika (FG 3), who is not only a teacher but also has a son with SpLD, was amazed at the difference such a system made in the case of her own son:

> *You realize that it works for everyone. I have my son who has delayed language and he's in pre-grade, he's already picking up because of these extra games, 'cause for him they're games… And, I mean, I know children who have much better speech and all are doing really well and G---- picked up like I don't know what.*

Participants also referred to high fliers and noted that this system neither slows down nor bores children for whom reading comes easy.

SMSLI and classroom management.
Participants reflected differently with regard to SMSLI and classroom management. In general, participants whose classes had 20 or less pupils, said that class management was not a problem. However, participants whose classes had 25 or more pupils, noted difficulties in managing this programme concurrently with the entire syllabus. The question that begs to be asked is: Is it the programme itself, or the fact that classes have more than 20 young learners, that is problematic? Whereas no participants in FGs 1, 3 and 4, participants whose classes had always 20 or less children, referred to difficulties with teaching SMSLI in the classroom environment, participants in FG 2, who had

classes of 25 or more, found difficulties. Thelma (FG 2), although committed to the programme, commented on the difficulties encountered in her classroom to really effectively implement SMSLI. Thelma is very much in favour of SMSLI, but finds difficulties balancing the use of resources, given the number of children in her classroom. Tamsin (FG 2) reported that she goes around this by utilising the class facilitator in her class and using small group techniques:

> *Guided reading in small groups to get that one-to-one, but then I get a lot of help from either the facilitator in class or I ask somebody else to come in so then I can focus on a small group 'cause I have 27 in class, so the weak ones really need a lot of support.*

SMSLI and teacher preparation.
Participants are aware that this programme involves a lot of teacher preparation and thought. They noted that, once you get used to the programme, the very preparation becomes exciting, as teachers then know exactly why they are planning and how they are going to present it to the children. Participants also noted that, as with other areas of teaching, the more used to the programme teachers get the easier it would become to plan. They, however, noted that such an approach required more planning than, for example, a mere look-and-say approach to reading, but felt that this should not be a reason to stop using the programme.

Time management and SMSLI.
Some participants felt that teaching literacy through SMSLI might be too time-consuming and might infringe on other important parts of the curriculum such as Maths, Art and Science. This issue evolved into quite a heated discussion as to whether it was the actual programme itself, whether it was teachers' decision making, or a matter of an over-packed syllabus. Not all participants agreed that SMSLI infringes on other subjects or dominates the curriculum. There seemed to be agreement that if teachers were trained and got used to the idea, than there should be no difficulties in coping with the entire curriculum. This concept was echoed by participants whose classes numbered 20 or less children. However, participants whose classes had more than 24, such as church schools' participants, had a different experience. One can therefore deduce that classes of more than 20, and schools where the syllabus

is too packed, may make it more difficult to practice inclusive strategies of teaching.

Job Satisfaction

Participants noted that, given that they had been exposed to SMSLI, they had understood SMSLI and were seeing better reading in their pupils, resulting in greater job satisfaction. Tessa (FG1) noted: *"He can read. He doesn't need to remember! I think it's the biggest joy you can get and the biggest satisfaction that … yes, then I am on the right track."*, and Thelma (FG2) reflected that:

> *As a teacher, I get more pleasure when I teach literacy through multi-sensory techniques. I really enjoy myself more with the children, actually seeing them experimenting more. They come up with ideas which really make me laugh. Sometimes, they really come up with something that I query whether they actually understand. But nowadays my satisfaction is giving them any new book and seeing them manage to read it.*

Listening to the Two Parents

Parents were not included in the research questions, and this may be considered a limitation to the study. The insistence of the two parents to have their voice heard, left me duty-bound to document their voices, in a context where we are referring to only two individuals. These two parents felt strongly about their views on SMSLI and their voices deserve to be heard as an indication for further research and as a possible understanding of how parents, as primary stakeholder in education, perceive SMSLI.

What they discussed corroborates with what the FG participants thought. They referred to a need for training in SMSLI for early educators, parental education and involvement, and a need for one national policy. Pawla was convinced that, after having been trained during parents' school meetings on how to practically help her children learn how to read using SMSLI, she was probably more proficient in the system than teachers. She also expressed concern that teachers were not supposed to teach phonics only. Petra compared teachers using phonics and teachers using SMSLI and noted:

But when I compare that teacher (her younger daughter's teacher trained in SMSLI) with other teachers who are teaching Year 1 - they are teaching phonics but do not have the same techniques, and the effect is then different. With our younger children, it was as easy as anything. I had no problem whatsoever. (Petra)

Presenting the Participants' Message

Participants' views yielded much broader results than expected. Whereas I expected participants to go into more detail with regard to SMSLI, they wanted to share opinions and concerns that are much broader and central to ITT and CPD. Participants based these concerns and suggestions on their experience of SMSLI CPD courses attended, or on their in-school induction after graduation. Their contribution reflected a commitment and vocation to the profession of teaching as well as feedback following experiencing different training. Furthermore, they are proposing a method of learning and training that is more akin to vocational training. The challenge may be that University ITT may need to evaluate its present method of training and utilize the benefits of vocational training philosophy and pedagogy in order to create a programme which prepares professional teachers both theoretically and technically.

The main conclusions of the FG participants are that (a) present ITT needs to include early literacy training in general and SMSLI specifically; (b) ITT needs to review the content courses, the method of teaching and the structure of the observations/TP experience, such that theory and practice are experienced together, with an emphasis on teaching techniques; (c) there should be more collaboration with what is expected in schools and the actual ITT at University; (d) professional teachers need to be trained in order to be able to address SMSLI and to be able to be used as models for trainee teachers; (e) the use of technology to observe model teachers; (f) teachers need to be exposed to seminars and training workshops in order to understand the benefits of SMSLI such that this techniques can become a policy of the Ministry of Education; (g) decision making for change has to be embedded in information, training and consultation with teachers; (h) change must be accompanied by discussion, shared responsibility, training, commitment to and conviction by SMTs and teachers; (i) consideration for class size and revision of syllabi needs to be

entertained; (j) parent involvement and information necessary for a success for all reading programme needs to be implemented; (k) trainers need to be addressed. From these results one can conclude that participants are concerned in general about the way they were trained, and in particular about preparation for early literacy. They also found difficulties in the methodology used and in what is covered during ITT. They were very adamant that there is need for change since they felt that teachers were not being adequately prepared from a technical point of view and even the "practical parts" of FT were not being appropriately addressed. Furthermore, participants felt that in ITT there is more emphasis on theory and record keeping rather than on formation and teaching techniques.

Ultimately, the message that is being given by these participants is that teacher training should go beyond academics and also involve attitude and skills training at the grass roots. Participants also brought to light the notion that when teachers *do not know that they do not know what they should know*, teaching is negatively affected. These data are comparable to the date extrapolated from the statistics. The next chapter will discuss the quantitative and qualitative data of this research with the literature available.

CHAPTER 7

Discussing the Disconnection

In Malta, 64% of students are estimated to have a proficiency in reading literacy that is at or above the baseline level needed to participate effectively and productively in life. Malta is notable among PISA 2009+ participants in that it has a relatively large proportion of advanced readers but also a relatively large proportion of poor and very poor readers in the population. (Walker, 2011, p. XV)

This study investigated early educators' awareness of and knowledge needed for effective structured multisensory literacy Instruction (SMSLI). The whole island population of Maltese and Gozitan early educators participated through the use of a questionnaire. Four focus groups (FGs) with early educators who had been exposed to SMSLI were organized to try and understand the effectiveness of such training on their perceived knowledge base, teaching techniques and perceived children's reading success. The views of FG members were commensurate with the statistical data results.

FG members reported lack of awareness during formal training (FT) and differences in their knowledge and teaching techniques following exposure to SMSLI. Likewise, the data indicated lack of awareness, significant differences between perceived knowledge and actual knowledge, between perception of adequacy of preparation, classroom practices and actual knowledge.

Notwithstanding the fact that most questionnaire respondents defined SMSLI as the generic meaning of the term *multisensory,* those who indicated exposure to this area of literacy indicated more - albeit still incomplete and wanting - linguistic knowledge. Unexpectedly, only eight questionnaire respondents, which would also have included FG members, could give a correct or quasi-correct definition of SMSLI, indicating that local SMSLI training needs to be improved significantly. Most participants achieved less than half correct answers, and no participants achieved 100% accuracy on knowledge items. This means that even early educators exposed to SMSLI locally continue to need training in order to conceptually, content-wise and pedagogically understand SMSLI and be able to use techniques effectively and appropriately in the classroom. In general, the findings of this study resonate previous international research findings.

In a context where (a) reading "serves as the major conduit for all learning… [where] … both educators and politicians have focused on the importance of assuring that all children become skilled readers" (Podhajski et al., 2009, p. 403); and where (b) the latest PISA 2009+ plus report (Walker, 2011) indicates significantly lower percentages of Maltese fifteen year olds

(64%) with baseline literacy when compared to other OECD countries (81%), this chapter will discuss the present research findings with the literature review and in the process also address data triangulation.

This chapter therefore compares Maltese early educators' knowledge base and awareness with regard to SMSLI - as drawn from the knowledge the present research findings has helped me build - with the body of literature. Based on my local experience, the hypothesis of this work was that Maltese early educators are not aware of SMSLI and may not know that they do not know. This seems to be supported by the statistical data and the views of the FG participants.

The present research findings reflect that Moats' "missing foundation in teacher education" (1994) and Jolliffe's (2006) "missing [a] crucial link" are applicable to the Maltese scene where "underlying pedagog[ies] need to be explicitly understood" (Jolliffe, 2006, p. 37) theoretically, conceptually, contextually, content-wise, linguistically, pedagogically and emotionally for "initiative[s] to be effective" (Jolliffe, 2006, p. 37). The research findings extrapolated from the questionnaires and the focus groups indicate (a) rife lack of linguistic knowledge; (b) perceived preparation for particular aspects of early literacy lower than perceived general preparation; (c) better perceived preparation and linguistic knowledge in early educators who have been exposed to Adams' model of reading and multisensory techniques; (d) awareness of the effectiveness and importance of SMSLI by participants exposed to SMSLI; and (e) incomplete linguistic knowledge even by participants claiming to be SMSLI-trained.

The present results indicate that Maltese early educators on the one hand seem to have an intuitive understanding that they need more training but, on the other hand, perceive themselves as more prepared than they actually are. FG participants explain a gap between teacher training, teacher's proficiency and knowledge of ITT educators with regard to SMSLI. This study also observes that beliefs about adequacy of knowledge and teaching literacy, and actual knowledge, differed significantly. Due to lack of exposure to and awareness of

SMSLI, teachers lack the necessary knowledge to effectively address SMSLI, as also concluded, for example, by Cunningham et al. (2009) and Moats (2009), even though they perceived themselves adequately prepared to teach early literacy. The discussion will also refer to my query: Do they know that they don't know?

These findings also reflect the EU's concern regarding inadequate teacher preparation (EC Communication, 2007). Within the theoretical constructs I was framing this study - namely Universal Design Learning, the Social Model, Vygotskian scaffolding and Piagetian genetic epistemology , this discussion reflects why this lacuna will then have repercussions not only on literacy but also on learning, given the demand placed on literacy in present cultures. Given that the aim of this discussion is to try to understand what is missing from local early literacy training as compared to other research findings, organisation-wise, the present research findings are compared with the literature using the same set-up as the literature review chapter (Chapter 3). This helped me ensure that I cover all possible aspects of the findings and possible ease of read.

Teacher Training Curricula, Policies and Politics

ITT curricula are generally composed of four major areas: (a) foundational knowledge in education-related areas of knowledge; (b) skills in assessing and addressing student learning; (c) content-area, methods knowledge and skills; and (d) supervised teaching practice (Ashby et al., 2008). The critique in the literature addresses a need for more links between the theory presented at the educational institution and the classroom experience; more emphasis on hard-core pedagogy (e.g. Alexander, 2004; Jolliffe, 2006; Moats, 2009) and a better effort to produce early literacy teachers who have a sound theoretical and knowledge background backed by effective teaching techniques for early literacy (e.g. Bos et al., 2001). Statistical findings and the voices of FG participants of this research reflect these descriptors and concerns. The present results conclude that whilst participants appreciated the theories they were exposed to and the way they were prepared to handle classroom management

and understand syllabi during formal training (FT), they perceived a need to train and support early educators to be effective literary instructors at ITT and CPD level; and to look at new ways to address teacher training with theory embedded in continuous practice and practical experiences in general. With particular reference to SMSLI,   participants felt a need for more exposure. The present research findings further conclude that even those claiming SMSLI training are still in need of more intensive training with regard to a sound knowledge base and understanding of what SMSLI is, such that teacher quality and "non-negotiable[s]" (AACTE, NEA, 2010) knowledge skills and attitudes become part of teachers' profiles and National Educational Policies. In the context of early literacy instruction, these non-negotiables include linguistic knowledge, and awareness and understanding of SMSLI, as part of training programmes as this is paramount for successful pupil learning (e.g. AACTE, NEA, 2010; Moats, 2009). FG participants were adamant that effective teachers need to be professionally equipped to respond to classroom changes; need to be open to lifelong learning, continuous change and awareness; need to understand that their knowledge-base needs constant development. This, according to them, includes a sound professional background with regard to content and pedagogy (EC, 2005). These participants echo the EU's concern that   "Member States are often failing to give teachers the training they need" (EC Communication, 2007, p.1).

Participants agreed with the Simon 1981 study, as quoted in Alexander (2004), and echo Alexander's (2004) and Hirsch's (1996) anger and concern that training only seems to address "pseudo-pedagogy" [2003 DfES], just as the 2003 Primary Strategy in the UK chose to ignore "coherent and principled pedagogy" (Alexander, 2004, p. 28) . FG participants expressed concern and anger that (a) during their ITT training they had thought that they were being prepared for classroom teaching; (b) they shockingly experienced a different reality to their expectations and their self-perception as new and "qualified" graduates at their first workplace; and (c) they became aware of what they had not been taught in ITT after being exposed to SMSLI training and/or the requirements and training of their schools. They also recommended what the NRP Report (NICHD, 2000) insists upon: teachers need to be taught not only

how to use particular methods and techniques but also helped to understand the context, backed by theoretical knowledge, such that they can truly be child-centred. In other words: "teachers need to know not only *what* to do, but *why* [and *how*] they do it" (Jolliffe, 2006, p. 46), as concluded in the NRP report (2000) and other research findings (e.g. Binks, 2008; Bos et al., 2001; Daniel, 1997; Traub & Bloom, 2000). FG members referred to significant professional improvement and job satisfaction in classroom teaching due to SMSLI training, also leading to better and faster independent young readers, where early educators' and parental attitudes changed as a result of SMSLI successful interventions. Finally, again reflecting the NRP report (2000), participants noted that SMSLI is effective because it reflects an eclectic mix of methods to address early literacy. This experience, they noted, led to more professional confidence and job satisfaction (ETUCE, 2008).

Just as Louden and Rohl (2006) report that within four-year ITT progammes "pre-service teachers typically take two or more units with a literacy focus [only] (p. 66)", similarly present analysis of local training programmes, the views of the FG participants and the statistical data echo a need for more exposure, more linguistic knowledge, and more links with theory and practice in local training programmes. Furthermore, participants were also insisting on one uniform policy for early literacy teaching techniques, stating also that this policy should be made accessible to all stakeholders. They, both professionals and parents, argued that different methods, which often include patchy, incomplete and at times incorrect knowledge, confuse parents and lead to misunderstandings and "confusion" in early literacy instruction and home back-up. Furthermore, Moats' (1994) missing link was deeply felt by participants exposed to SMSLI.

As also noted by the participants themselves and recorded in the literature findings, if teacher trainers themselves are not aware of these techniques, then it stands to reason that they do not include them in formal training programmes. As will be discussed below, this was referred to by FG participants in the present research. In other words, if the research findings presented in this study are not accessed by teacher trainers, then change

cannot occur as this research remains unknown to teacher trainers and continuously omitted in formal training programmes. Moats (2009) observes that "teachers are unaware of or misinformed about the elements of language that they are expected to explicitly teach (p. 387)… [and] there are far two few cross-disciplinary programmes in language and literacy" (p. 389).

Linking Theory and Practice

FG graduate teacher respondents noted that university training focuses more on theory than on practice, and this is reflected in the statistical findings where exposure to reading theories and the national minimum curriculum were referred to by most graduate teacher respondents. This is opposed to the data from the whole cohort where exposure to reading theories is marked as one of the lowest four areas graduate teachers are exposed to during training. One further has to note that, in Malta, most Year 1 and Year 2 teachers are not B. Ed. (Hons) teachers (73.99%), as is shown in the population profile of this study (Chapter 4, Table M11). The FG findings reveal a concern for ITT and a need for CPD training in SMSLI preparation, and deserve discussion if changes are to be proposed at the local level. The results from the FG participants correlate with the critique on teacher education of at least the last forty years.

Linking research and practice is paramount to teacher education (Zeichner & Liston, 1990). One cannot belittle the importance of theory, as this helps produce effective and informed decision-making teachers who can transfer, translate and use their knowledge to practical teaching situations (Hollingworth, 1989; Zeichner & Tabachnick, 1981). However, this must also be backed up by the correct practical content and link to the theories to achieve effective teaching (Jolliffe, 2006; Louden & Rohl, 2006; Moats 1995, 1999, 2009). This becomes even more relevant with regard to early literacy training, in a context where more than half of the literacy competencies (e.g. Appendix C) and early educators' effectiveness documented in the literature relate to practical aspects of teaching literacy and a good basic knowledge of the language structure (e.g. IRA 1998). It seems that, in spite of research studies and formal reports dating back to the sixties, such as The Robbins 1963 Report (Anderson, 2010), the Louden and Rohl (2006) study and the 2007 European

Commission's concern on inadequate teacher preparation, FT programmes, both locally and abroad, mostly provide patchy uncoordinated coursework which fail to allow teacher trainees the time and the space to process theory and practice, or where theory most often prevails in the university lecture rooms and practice is then only experienced during teaching practice (TP) periods, and students are not given the space and attention to process both, as also noted by FG participants. Six possible reasons for this are (a) the move of teacher training from vocational to academic training; (b) programmes possibly being set to suit teacher trainers' background and expertise; (c) in the local scenario, the programme being set by more than one department within the Faculty of Education where every deparatment perceives its own niche as the most important to include; (d) a need for a longer teacher education programme with a different set-up which would include constant contact with the classroom; (e) lack of reference to research in the field of special education which affects inclusive teaching; and (f) awareness that techniques that work for special populations also work in the inclusive classroom (e.g. Falzon et al., 2011; Turnbull et al., 2010; Oliver, 2004). Both the views of the FG participants and the statistical data evidenced this lack of coordination and cohesion of knowledge and skills in FT (EC, 2007).

The perplexing query is: what is holding FT programmes back? More profound questions include: are teacher educators aware of these lacunae? Do teacher educators want to acknowledge, accept and believe this critiqued lack of "coherent and principled pedagogy" (Alexander, 2004)? Do they conceive, understand and/or want to address the fact that there is a "failure to incorporate effective teaching and learning and also a failure to make explicit [its] underlying pedagogy" (Jolliffe 2006, p.44)? Do they want to change their coursework and the philosophy of their way of training? Alexander (2004) angrily notes that:

> in the context of children's statutory curriculum entitlement they are not substitute for a staffing policy which provides each primary school with a team of professionals who between them have the range and depth of the subject knowledge to do full justice to every aspect of the curriculum for every child, and the flexibility to deploy such knowledge. (p. 27-28)

As noted in the literature review and by the FG participants, the implication is that teacher educators themselves are unaware of SMSLI and its effectiveness on students' success in reading. A vicious circle results and implies that CPD must first be carried out with teacher trainers and, to start the process, these first need to be convinced and open to this new knowledge and research, as discussed below. Hopefully, the present research findings compared with the concerning data on functional literacy and Maltese youth just issued by the PISA 2009+ report (Walker, 2011) may lead to more awareness and possible implementation locally.

Morrison and Austin's (1977) and Villa et al. (1996) refer to a need for quality training and for continuously upgrading skills to increase more inclusive learning communities. They propose changes to both content and format of ITT and CPD. The *Journal of Learning Disabilities* felt the need to specifically publish a special issue (2009, Vol. 42 No. 5) entitled: *Perceptions and reality: What we know about the quality of literacy instruction*. The nine contributions of this issue again echo a need for better training with more link between theory and practice, more classroom based learning and more exposure to "content knowledge about language" (Moats, 2009, p. 517). FG participants expressed similar concerns given their experiences with other professional teachers, and particularly when recalling their first year of teaching.

Darling Hammonds (2000) and Rose (2006), for example, report a paramount need for a well-trained teaching force, well-designed systematic programmes, inclusive assessment of teaching and learning, strong supportive leadership, and principles of "high quality phonics work" within a language-rich curriculum. On the other hand, these authors fail to specifically refer to SMSLI, and reflect Moats's (2009) concern that "current educational policies and funding practices continue to focus on program selection, school organisation, and student test scores - not teachers, the context in which they teach, or the leadership and professional development required to ensure 'teacher quality' (p. 387)." FGs' participants, the analysis of Maltese training programmes, and the statistical findings reflect these concerns.

SMSLI and Effective Early Literacy Teachers?

The effectiveness of SMSLI was noted on two levels in this research. First, questionnaire respondents who noted exposure to multisensory techniques or to Adams' model of reading, and who also erroneously defined SMSLI as "using all senses", still demonstrated a significantly better knowledge base than respondents not exposed to these two areas of literacy. Secondly, FG participants were very clear about their perceived positive effective SMSLI training had on their professional knowledge and pedagogy, and considered this as relevant and practical to teachers' necessary knowledge-base (Freire, 1970; Kiwia, 1990).

FG participants reflect results of the Medwell et al. (1998) and the Wragg, et al. (1998) studies. Both these authors and FG participants conclude that reading needs to be taught in a context; that systematic decoding and spelling techniques are important; and that meta-cognitive awareness practices in SMSLI programmes are effective. FG participants appreciated the importance of being well-versed in theories of reading, and in being given learning opportunities which helped them understand and appreciate philosophies and paradigms emphasizing purposed comprehension and communication, as they perceived this as vital to the ultimate aim of reading - gleaning meaning from print (Adams, 1990). This allowed them to never lose or forget this ultimate aim of literacy teaching when they focus on the technical aspects of literacy. They, however, felt that this very ultimate aim actually necessitates early educators to be able to address well the technical aspect of literacy, and believed that the best way forward is the SMSLI's integrated approach to teaching reading (Moats, 1994; Stanovich, 2000). As noted in the literature, effective teachers "did not declare a strong orientation towards phonics… yet they taught phonics systematically, but as a means to an end not as an end in itself" (Medwell et al., 1998, p.26); had an extensive knowledge of literacy (through their SMSLI training) and children's literature available (through their ITT); and continued to attend professional courses as they felt that CPD was important. Furthermore, although never referring to SMSLI, the Harrison report (Harrison, 2002) concludes that *fluent phonics* are without doubt important as are accurate and

automatic recognition of words, where the "purpose of reading is to gain meaning, not simply to recognize words rapidly" (p. 3).

In a context where most respondents gave a generic or incorrect definition of SMSLI, respondents overwhelmingly agreed (93.94%) that SMSLI are important tools in teaching early literacy. All but two questionnaire respondents in the study disagreed whilst a further 32 respondents were unsure whether SMSLI was a positive technique to address literacy. Respondents seemed to intuitively know that SMSLI is an effective technique, but their knowledge was then nebulous and patchy. The results indicate that whilst Maltese early educators have an intuitive notion that SMSLI is the best way to address early literacy, they then do not have the knowledge and the skills to do so effectively or to translate their intuition to understanding, to a knowledge-base and to skills to implement SMSLI effectively (Moats & Lyon, 1996). Wray and Medwell (1999) similarly conclude that skimpy knowledge based on intuition rather than on abstraction, meta-cognition and linguistic knowledge was the norm in their results. This intuition may lead to incongruence between perception and actual knowledge as, how can one gauge that which he does not know. This was inferred in the findings of the research where respondents were more likely to correctly answer items not needing a lot of linguistic knowledge (e.g. syllabising 'meat' and 'karozza') than answers requiring linguistic knowledge (e.g. syllabising 'apricot' and 'eżerċizzju'), whilst perceiving themselves more knowledgeable than they actually were.

FG member Thelma noted that the knowledge she had been exposed to during her inclusion area of specialization during her ITT led her to feel confident and equipped. She reflected on the SMSLI knowledge she had acquired and the knowledge of fellow graduates who had not had the same area of specialization. Tammy (FG 4), a B.Ed. (Hons) graduate whose teaching areas during her ITT programme included Maltese and Primary Years, noted being exposed to Maltese linguistics. This, she narrated, really helped her in teaching literacy but commented that this, however, was not the experience of her ITT cohort and in her opinion would lead to a lack of necessary knowledge to address literacy effectively and appropriately. She reflected that she had translated and

transformed the Maltese linguistics content to early literacy techniques and to teaching reading and spelling rules on her own, but that this was never taught to her during ITT. Tammy's (FG 4) concern was that trainee teachers who are not exposed to language linguistics would not be prepared enough to teach early literacy effectively (Moats, 1994).

The views of the FG participants echoed similar results to those of research findings (e.g. Ball & Blachman, 1991; Bradley & Bryant, 1985; Cunningham, 1990; Foorman et al., 1997a; Foorman et al., 1998; O'Connor, 1999; Torgesen, 1997; Vellutino et al., 1996). FG participants noted that the SMSLI training and the supervised instructional workshops, seminars and activities they attended after FT, indicated that it was possible, feasible and cost-effective to deepen teachers' own knowledge of SMSLI. Such knowledge, they noted, not only changes classroom practice for the better, improves job satisfaction and ameliorates student learning; it also clearly revealed that explicit methods to teaching reading did not affect language growth and reading comprehension, and was perceived as inclusive and yielding more effective readers (e.g. Podjhajski et al., 2009).

Joshi et al. (2009b) report that in-service teachers may be "well-versed" in children's literature but then lack knowledge and techniques on how to address the language structure, what they refer to as the "basic building blocks of language and reading" (p.392). Likewise, FG members noted that they were very well introduced to the "big book" technique and to different genre of literature, but then essential knowledge required for structured instruction to breaking the code to literacy was not addressed. They remembered discussing whether phonics or Whole Word Approach (WWA) were the best way to break the code to literacy, remembered concluding that one does not exclude the other and that both were mutually important, but then referred to a lack of exposure to structure and rule learning which should be used alongside phonics and WWA (e.g. Moats, 1994) and to techniques embedded in a structured sequential programme on how to address phonics and WWA. The analysis of local courses' content, including ITT, also supports Joshi et al.'s (2009b) concern, whilst the FG results indicate that the theoretical constructs of local FT

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programmes fail to cohere theory, content and pedagogy. The statistical data then reveal that, whilst almost all respondents see the importance of SMSLI, they have neither an understanding of what this involves nor the necessary content to address early literacy through such an approach.

Following exposure to SMSLI, professionals in this study not only appreciated that reading needs to be taught in a context created through and by the children, as is also indicated by SMSLI programmes (e.g. Blachman, Ball, Black & Tangel, 2000; 'M-POW'R programme, Muscat, unpublished; Rak, 1995; Stahl, 2002; Schupack & Wilson, 1997), but also appreciated the need for systematic and metacognitive awareness of strategies to breaking the code, as well as the need to specifically address linguistic rules (e.g. Medwell et al. 1998). This is also referred to in government reports (e.g. Harrison, 2002; Rose, 2006).

Furthermore, participants in the present study indicated a need for awareness of theories of reading, a need for an integrated approach as described in Adams' Interconnectionist model of reading (1990), regarding these as emancipatory and professionally empowering. FG members' agreement on the need of explicit teaching of skills is also echoed in research findings (e.g. Moats, 2009; Pressley et al., 1996;   Wragg et al., 1998) where sound content knowledge is recommended (OECD, 2003a). This is in line with Adams' Interconnectionist Model of Reading (1990), which in this present study about Maltese educators is being proposed as the model which best suits successful reading for all (Ehri, 1995, 2002, 2003). This model respects top-down, interactive and bottom-up approaches to teaching reading, presents a model where no approach is excluded and is embedded in context; and where children need to be exposed to all these aspects in order to be able to read effectively and expediently as possible .

A number of studies have been carried out comparing teacher qualities and successful readers. Although the focus of these studies was often on readers, they do provide important insights to teacher training, and one can generally infer that these studies indicate that effective early literacy teachers

need effective training, including the use of structure, resources, supervision and guidance for knowledge by experts in the area, elements missing from formal training (e.g. Baker et al., 2000; Jenkins et al., 2000; Juel, 1996; Spear-Swerling & Bucker, 2004; Vadasy et al., 2002). This is congruent with the opinions voiced by the FG participants and the statistical research findings.

Training Programmes

FG members saw their post-graduation exposure to and experience of SMSLI - both in content and in delivery style - as much more effective than their formal training. They criticized the lecture format used in local FT programmes and perceived discussion, hands-on learning, demonstration lessons, observations of good practices (modelling), and methodologies as being superior to the lecture format. They refer to the lack of effectiveness of "too many words at university" and to the effective, empowering and powerful impact the observation of expert model teachers provides. This experience was perceived as enabling one to understand "what is behind the programme". Using workshops where "literally like we were children in the class" made a lot of sense. Participants noted that this technique helped them understand the learning from the learners' perspective, as well as understand how to actually perform the steps and techniques of teaching first hand. This becomes very important, particularly in a context where most respondents on the one hand noted that they first became aware of SMSLI during formal training, and, on the other hand, (a) still indicated patchy and incorrect knowledge, and (b) most defined SMSLI as "using all the senses" or incorrectly.

In general, only half of the respondents felt that their FT was effective in preparing them to address early literacy, whilst consistently believing that they were more prepared to address multisensory techniques than they perceived formal training to be effective.   This perception is then tainted by a limited knowledge base which would not allow respondents to make an informed judgment as, how can one gauge that which one does not know? On the one hand, a low rate of perceived effective FT may be indicative of awareness for a

need for CPD, which can be seen as positive. It is as if Maltese early educators are aware that their formal training is not sufficient, but then do not know that they lack and think they know enough based on their personal experiences of their childhood teachers. This is in line with research on attitudes, beliefs, and techniques of literacy used (e.g. Kagan, 1992; Snow-Renner & Lauer, 2005). Alexander (2004) compares the definitions of pedagogy in European and American contexts and indicates difference based on political, cultural and philosophical constructs, arguing that at times the difference between content and application is murky. He instead offers an alternative:

> If pedagogy is the discourse which informs and justifies the act of teaching and the learning to which that teaching is directed, then substance must *precede* judgment, or at the very least the two should go hand in hand. Otherwise it is hard to know by what criteria judgments of competence, success and failure in teaching can be devised and defended. (p. 10)

With regard to SMSLI, the *substance* must include the necessary linguistic knowledge and structure to accompany teachers' knowledge on children learning, and the *judgment* would refer to students' effective reading. Alexander (2004) proposes that, within this pedagogy paradigm, teachers must engage with separate but related ideas and values where the main concerns are the children, the learning, the actual teaching embedded in the usually politically embedded curriculum, school as an institution and the national policies. This teaching must also be based on correct linguistic knowledge (Moats, 1994).

In the context of this study, the results reflect this and the body of literature on SMSLI, and indicate that Maltese educators do not have the necessary content to address early literacy effectively such that children may become effective readers as expediently as possible and as a result do not address the politically embedded curriculum as well. This is also reflected in the national level of SEC passes (NSO, 2010), in the amount of Maltese early school leavers (EU commission, 2011), in levels of literacy as discussed in the literature review (NSO, 2007; 2010); and in the just published PISA 2009+ results (Walker, 2011) revealing a lack of functional literacy in 36% of Maltese school leavers.

SMSLI, professional teaching profiles and ITT.

It is clear in the literature that a lack of exposure to the appropriate scientific knowledge during ITT and CPD leads to a disconnection between teachers and scientific knowledge about literacy. Apart from criticising that the link between theory and practice is weak, the literature concludes that most formal training programmes present a mere introduction to reading (e.g. Louden & Rohl, 2006; Moats, 1995, 1999; Nolen et al., 1990). This is also reflected in the present research findings - a lack of the necessary knowledge teachers needed to effectively develop accurate and automatic word recognition in beginning readers, an ability necessary for fluent and efficient reading to access comprehension (Moats & Foorman, 2003). Just as Moats (1995) concludes that teachers are typically not prepared for the task of teaching literacy "explicitly" to pupils, the data of this study indicate a discrepancy between perceived and actual knowledge; perceived knowledge that is not actually there; patchy knowledge leading to possible erroneous knowledge and techniques used in the classroom; and frustration at the realization of such missing knowledge from ITT by FG participants.

As noted in research findings, FG participants concluded that graduate teachers may be aware of theories of reading but not of the actual linguistic knowledge and implementation of effective teaching techniques (Lyon et al., 1989). Just as Moats (2009) laments that several studies over the last 20 years conclude that "Unfortunately, levels of content knowledge about language is typically found to be very low" (p. 387),   Spear-Swirling and Brucker (2004) argue that graduate teachers are often not prepared to address early literacy teaching techniques appropriately.

The present statistical data reveal a similar situation in the Maltese islands, whilst FG participants are strongly recommending that this be addressed.   This present study also reinforces results of a small study carried out by Falzon and Muscat (2001) which concluded "wonder" and "awe" at the realization of lack of knowledge; and the Falzon and Calleja (2011) study which indicates that such an approach is respectful and representative of all learning patterns (Johnston, 2009).

Addressing Teacher Educators (ITT trainers)

When the methodology for the research question was being conceived, interviewing the teacher trainers was initially considered. This was decided against for three reasons: (1) following the analysis of the formal training programmes; (2) given the literature on the issue; and (3) the small-island community profile of our country. The literature only yields few studies addressing teacher educators' linguistic knowledge and knowledge in connection with SMSLI. Findings available (e.g. Binks, 2008; Joshi, et al., 2009b) compare with comments from FG members. Just as twenty years ago Reynolds et al. (1992) noted that most "experts" did not attribute the mastery of structural language knowledge as a critical component in successful reading, so FG participants concluded similarly, given the lack thereof in their FT programmes, as also noted in the analysis of local programmes in Chapter 3.

More recently, Louden and Rohl (2006) report student teachers differentiating between teacher trainers who had "forgotten what it is like" (p. 73) and others who "remained in contact with classroom practices and were able to support pre-service teachers to develop literary teaching strategies (p.73)". Likewise, FG participants referred to the benefits of observing effective teachers and to having university lecturers with such qualities.

Participants in the present research queried the "expertise" of some of their FT teaching practice (TP) examiners. They queried whether TP tutors actually had the experience, expertise and knowledge to address linguistic knowledge content and teaching techniques, both in general classroom practices and particularly with regard to SMSLI. They felt that, whereas their lecturers had been well-versed in theories, this was not backed up by the necessary classroom experience. FG participants also perceived university trainers as well-versed in general classroom practices such as discipline, classroom management, appropriateness of topic and resources, but weak with regard to specific teaching techniques in general and unaware of SMSLI in particular (e.g. Binks, 2008; Louden & Rohl, 2006). They narrated that, from

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the comments received in their TP evaluation booklets, they could in hindsight, and after being exposed to SMSLI, understand that some of these comments indicate that their TP examiners did not "have an idea" of SMSLI methods and their rationale. Likewise, Joshi et al. (2009b) conclude that their survey of 78 teacher trainers indicates that even though these teacher educators were familiar with syllabic knowledge, they still performed poorly on concepts related to language concepts such as morphemes and phonemes. Joshi et al. (2009b) perceive this lacuna of knowledge in teacher trainers as one of the two main reasons for the omission of such content in teacher training programmes. Likewise, Alexander (2004) notes that whereas ideology and theories may and should frame and guide "ends" in teaching programmes, these on their own cannot "specify the precise means" (p. 8). He insists that professional knowledge needs to be grounded in research where principles build on experience in order to truly produce effective teachers.

Joshi et al. (2009a) also refer to a lacuna in textbooks on literacy used by teacher training colleges. This lacuna includes incomplete content and pedagogy, incorrect information and errors. The literature review indicates a similar lacuna in local programmes. There is therefore congruence in the data collected from research findings, the perceptions of FG members, and the analysis of the local programmes. One is reminded that similar results were concluded by American (NICHD, 2000) British (e.g. Alexander, 2004: Poulson, 2001 and Australian (Louden & Rohl, 2006) research.

Moats (1994) and Spencer et al. (2008) conclude that speech and language pathologists (SLP) have better linguistic knowledge than teachers. Likewise, Kavale and Reese (1991) note that there is a significant difference between the content knowledge of learning specialists and literacy teachers in general education, where university trainers themselves may also not be aware of the importance of SMSLI, since they may not have come from the field of special education. The concern is that, locally, teacher educators are often on government committees responsible for policy changes, such as the New Curriculum Framework consultancy document (DQSE, 2010), and that may mean that this body of knowledge remains inaccessible to the early educators

training for and working in the general classroom. The national policy and strategy document for core competences in primary education issued by the Directorate for Quality and Standard in Education (DQSE, 2009) mirrors the conclusions of these researchers and this is again reflected in the patchy linguistic knowledge concluded in the present research findings and noted by the FG participants. Advising for a revision of teaching and learning processes for competences and to not be tied down to specific programmes, these DQSE documents concede that teachers require not only CPD but also "adequate and on-going support" (p. 14). However, reference to the positive impact of "structured multisensory teaching" is made only with regard to "struggling and/or dyslexic reader and instrumental in reducing literary difficulties and extending literary opportunities" (p. 23).

Furthermore, SMSLI is referred to in the "Community Based Programmes" section, and regards "the training of teacher and support assistance in multisensory techniques [as relevant] to regularly target individual needs" (p. 25). This emphasizes linking SMSLI to the world of special education instead of its implementation in the inclusive classroom, and reinforces the literature which notes a significant difference between the content knowledge of learning specialists and literacy teacher in general education, which again reminds us of the missing links referred to by Moats (1994) and Jolliffe (2006), missing links which are still present (e.g. Moats, 2009) in spite of the body of literature available. Furthermore, DQSE (2010) does not seem to see SMSLI as instrumental to addressing literacy in the classroom by class teachers, even though local research on SMSLI implementation is available in more than four schools.

Beliefs and Attitudes to Instructional Practices and Change

FG members noted that, unless otherwise trained and convinced, teachers tend to teach in the way that they themselves were taught as students (Snow-Renner & Lauer, 2005). They also claimed that teachers' beliefs and attitudes directly affect instructional practices, where philosophy for instructional practices is consistently based on their beliefs and attitudes about content and

student learning. If teachers were asked to change their pedagogy, they must not only adjust their belief system to address the new paradigm but also "need strong content knowledge and the ability to change their pedagogical repertoire as well as their underlying beliefs and attitudes about it" through "opportunities for deep learning of content… reform-oriented strategies… practice those strategies in the classroom, and observe their effects on student learning" (Snow-Renner & Lauer, 2005, pp. 2-3). FG participants shared these concerns and suggested ways in which such changes could be addressed and implemented. This becomes more relevant in the context of the data results, where the majority of Maltese early educators believe that they know material which they actually do not know, such as their ability to come up with correct definitions and perception of knowledge; and the actual provision of correct examples and answers to linguistic knowledge which in these research results is significantly wanting. Conclusions from research findings (e.g. Fang 1996; Farrell 2001; Gupta 2004; Kagan 1992; Pajares, 1992; Richardson 1996;) are echoed by FG participants.

Just as international research findings note that teachers have well-developed grounded beliefs and perceptions that make them resistant to change and to different pedagogies; tend to fall back on remembered routines during their teaching; and are sceptical and resistant to explicit teaching of language structure, particularly if such new knowledge threatens their belief systems (Brady et al., 2009), so FG participants noted that it is extremely important to get early educators and the school on board if one is to ensure that new methods will actually be implemented in the classroom. Likewise, Taylor et al. (1999) note that changes cannot happen without the system's support.

When comparing present results with international research findings, one finds comparable conclusions. FG participants note that they need to be given time to accept change and new techniques. They never specify a time span. Taylor et al. (1999) support this concept and note that it takes up to three years for large-scale innovations to start having an effect on school and learning. Other similar conclusions reached by FG participants, the actual statistical findings of this present study and the literature review all include the following conclusions: (a) early educators are not adequately trained during ITT to

address SMSLI; (b) early educators may be practicing some erroneous practices and imparting incorrect knowledge to pupils; (c) early educators get to know what they are supposed to know after formal training; (d) early educators may not even know what they lack; and (e) new experiences need to be appreciated, embraced and addressed in the way changes are introduced and shared with early educators. Again reaching conclusions similar to the literature, the FG participants further noted that teachers need to understand and agree with new methods presented such that there is a change in attitude, which is the only way that changes in practice may occur (e.g. Binks, 2008, Moats, 2009, Jolliffe, 2006). Participants further cautioned that the fact that teacher trainers did not include SMSLI in their programmes was another obstacle for change. This is also noted by, for example, Moats (2009) and particularly by Binks (2008) who stresses a need to train the trainers.

FG participants were aware that teachers tend to have well-grounded beliefs and views about their own teaching methods, and will find "excuses" and reasons not to change. Gupta (2004) and Gupta and Saravann (1995) note that due to the differences between the training and the trainees' own beliefs, trainees tend to fall back on remembered routines during their teaching. Similarly, FG participants noted how they fell back on how they were taught as pupils to address literacy. The statistical data support this perception as these results reveal a high use of the Whole Word Approach - a system which was used for English reading in the eighties and nineties locally- and more knowledge of Maltese syllabication than of English syllabication in a local context where syllabication is more used in Maltese literacy teaching. Just as Brady et al. (2009) note that they found experienced teachers more sceptical and resistant to explicit teaching of language structure than novice teachers, particularly if they felt such new knowledge threatening to their belief systems, so FG members noted similar difficulties in their experiences with colleagues at the place of work.

FG participants resonated the experience of novice teachers expected to teach methodologies they were never exposed to during their ITT, and the panic this brought about. Gupta (2004) concludes that trainee teachers are

at times expected to teach techniques and strategies that they themselves have never learned and so are ill-equipped and unprepared to teach students appropriately. Similarly, Fisher et al. (1996) identify difficulties involved in expecting trainee teachers to use literacy strategies that they themselves had never experienced either because they, as children, were never exposed to them, or because they had never observed other teachers and mentors using them in their training. FG participants referred to incongruence with what schools during TP expected them to do and the comments received from their TP examiners, leading them to believe and conclude that their teacher educators were not aware of teaching techniques. Similar to Cunningham et al.'s (2009) research findings, FG participants were of the opinion that practices will not be "employed widely, nor with fidelity, until teacher knowledge and beliefs are congruent with the instructional practices recommended by research and policy consensus" (p. 429). Just as Cunningham et al. (2009) insist that "teacher characteristics are essential in determining how to truly support student success in reading", so FG participants referred to teachers resisting change due to difficulty to change set ways, lack of interest in and motivation for new learning and an unwillingness to use time to plan new lessons, and unwillingness to put in the effort and the time to learn and plan. How to address this change becomes very important, particularly in a context where Maltese early educators in this study perceived themselves more prepared than they actually were, where their knowledge is patchy and where erroneous knowledge is, as a result, taught in the classroom, as reflected in the data results. This may result in a threat in self perception and a higher resistance to change (Rogers, 1969).

Changing beliefs and attitudes.
Just as Cunningham et al. (2009) conclude that belief structures are often resistant to change, FG participants felt that a number of main ingredients needed to be present in the decision making process facilitating change. These main ingredients include the commitment of the Senior Management Team (Fullan, 2000); willingness and openness to change (Rogers, 1969); support of and from all the teachers (Moats, 2009); awareness that something better is needed (Binks, 2008); change followed by a difference for the better (e.g.

O'Connor et al., 2005); and an informed decision making process for change (e.g. Stallings & Krasavage, 1986). FG participants felt that, otherwise, the introduction of new techniques would be undermined by individuals not implementing the changes proposed in their classroom and that, more often than not, this happens due to lack of belief in the new system and to fear of failure. Likewise Cunningham et al. (2009) note that - mere acquisition of knowledge may not necessarily lead to a shift in chosen instructional practices. Schrofel (1991) and Grossman (1991) refer to techniques where there is encouragement to understand the role of the learners and criticize pedagogies used. Mosenthal et al. (1992) not only provide training in how to use new reading strategies, but also give ample time for practice, allowing for more awareness of the effectiveness of new techniques, more conviction and more comfort to use them in their teaching. Likewise, FG participants referred to a system of mentoring and meetings held at their school. This facilitated acceptance of and conviction for change.

Just as Fullan (2000) notes that the 1960s and 1970s failure to reform and implement initiatives was due to the methods of dissemination only involving forwarding material, the FG participants referred to the positive training system they had experienced which allowed for mentoring between staff, simulated classroom learning, and feedback given as and by a team. This finding again points towards a need to go beyond providing packs of material, and to always involve teachers at every step of the way (Stallings & Krasavage, 1986). Likewise, Fullan (2000) concludes that systemic changes in the school, classroom and district levels involve meetings, planning, engagement and teamwork, as also noted by the FG participants.

Conclusions in various studies, such as Binks's (2008) research on linguistic knowledge of teacher trainers and training programmes for professional teachers, teacher trainees and teacher trainers; Fullan's (2000) reference to a need to involve and get the support of teachers at every stage of the change process; Jolliffe's (2006) cry for deep understanding of pedagogical rationales and techniques, and clear links between theory and practice; Moats (2009) "still wanted" lament regarding trained teachers "responsible for

preventing and remediating reading and spelling" (p. 387), concur with the present research findings. This is observed both in the statistical data and in the views of participants.

FG participants noted that when they shared their knowledge on SMSLI with colleagues they experienced resistance to change from these colleagues due to what these perceived as difficulty to change from set ways and lack of interest in and motivation for new learning. FG participants were also upset as, at times, this resistance to change was due to teachers being unwilling to put in the effort and the time to learn and plan, and this was quite disheartening both from a professional perspective and from a vocational one. A lack of conviction in the new method to teaching reading was also seen as detrimental.

The statistical data of this study indicate that the respondents' perception of preparedness may also affect possible lack of awareness to appreciate lacunae in one's own knowledge and training. Snow-Renner and Lauer (2005) note that teachers tend to teach in the way that they are taught. Likewise, FG participants and the statistical data on classroom practices indicate that Maltese early educators tend to fall back on how they had been taught as students or pupils. Respondents in the present study indicated the use of the Whole Word Approach as the method they most used, and rule learning as used the least in literacy sessions. This is historically in line with local practices - going back to my childhood memories, the *look and say'* method of the Ladybird series of reading texts for example.

Professionals develop a philosophy for instructional practices consistently based on their beliefs and attitudes about content and student learning. Teachers usually have well developed and grounded beliefs and views about teaching and learning that make them resistant to change and to different pedagogies (e.g. Fang, 1996; Farrell, 2001; Gupta, 2004; Kagan 1992; Pajares, 1992; Richardson, 1996; Snow-Renner & Lauer (2005). Gupta (2004) and Gupta and Saravann (1995) note that due to the difference between the training and the trainee's own beliefs, trainees tend to fall back on remembered routines during their teaching. This is particularly prevalent in reading techniques

because it is different from when one is teaching a subject. Brady et al. (2009) note that they found experienced teachers more sceptical and resistant to explicit teaching of language structure than novice teachers, particularly if they felt such new knowledge threatening to their belief systems, as also noted by FG participants in this study.

It is clear that studies carried out across different nationalities and populations, as well as using different research tools, indicate that teachers turn to personal experience and intuition when not given the correct knowledge base and create their own bubble of learning which may become difficult to burst as it feeds on self-confidence and the identity of oneself as an accomplished professional. This may become even more threatening when it is indicated that, at times, this may be based on incorrect knowledge, as indicated by the poor rate of correctness of linguistic knowledge indicated in the data of this study and through the views of FG members.

FG participants referred to what would best work to address change and convince professionals to implement this change. Best strategies to change beliefs and attitudes included the sharing of knowledge; allocation of time for modelling; experiential sessions and self reflection of the new skills and knowledge in order to allow for the acceptance of the changes required SMTs' involvement and belief in SMSL the need for in-class and in-school teamwork and cohesion, including peer tutoring and feedback, such that the whole team is working in the same way and using not only the same techniques but also the same resources. More importantly, they noted the actual awareness that change needs to occur and that teachers can improve their early literacy teaching techniques.

These strategies for change implementation are also indicated in the literature (e.g. Gupta, 2004; Snow-Renner & Lauer (2005). The mere preparation of distributed packs was not perceived as effective both in the literature review and by FG members (e.g. Gupta, 2004). As also noted in the literature, FG members in the present study felt that, in order to embrace changes, teachers needed to be part of the informed decision making processes

from the very start. CPD sessions had to be planned as collaborative experiences rather than "teaching" sessions''. This also involved giving information and background knowledge of not only "what" but also "why" and "how" proposed changes would be for the better (Alexander, 2004; Jolliffe, 2006). Participants, reflecting published research findings, noted that such an approach would make teachers less resistant to change.

Lonberger (2000) concludes that after participants had been given the opportunity to reflect and practice their beliefs within a positive constructive environment, the majority chose an interactive approach to reading. In short, they were consciously and critically thinking about their beliefs when planning a lesson. FG participants narrated a similar experience and referred to their becoming conscious of what they were lacking and the motivation to reflect upon a need to gain knowledge in order to improve their pedagogy. Similarly, the data indicate that exposure to multisensory approaches and/or Adams' model of reading led to not only more likelihood for more correct answers but also less likelihood of incorrect answers and more likelihood to indicate lack of security in knowledge. The inference is that these respondents were at least becoming aware that there were aspects of early literacy that they needed to learn more about.

Perceived and Actual Knowledge Base

Similar to other research findings, the present data indicate that whilst teachers rate themselves as knowledgeable, they then indicate actual limited knowledge (e.g. Bell et al., 2004; Cunningham et al., 2004; Podhajski et al., 2009). Discrepancies between believed and actual knowledge is evident both statistically and voiced by the FG participants. Cunningham et al. (2004) note that those teachers who in their study were confident of their phonemic awareness knowledge, actually did worse than those who perceived themselves as having limited knowledge and skills in this area.   The present data indicate a similar profile. Respondents were always more likely to give an incorrect rather than a correct example, in spite of perceived adequate preparation and

knowledge, and were less likely to indicate insecurity about knowledge (e.g. Tables 46 and 48).

Just as Cunningham et al. (2004) infer that this overestimation may actually be a dangerous situation as it may then become more difficult for teachers to accept new knowledge and techniques and impede openness to new learning, so the data and the views of the participants voice a reluctance due to this overestimation.   Bos et al. (2001) conclude: "[our findings indicate] a mismatch between what educators believe and know and what convergent research supports as effective early reading instruction" (p. 98). This is reflected in these present research findings. Whereas more than 50% of the respondents indicated satisfaction with their formal training and with their preparedness to address early literacy in the classroom, more than half of them actually achieved at best 33% accuracy with regard to knowledge, whilst FG participants commented on their "shock" on realizing how much they did not know or what they had been teaching in the wrong way.

A Year 2 teacher participant in the Falzon and Muscat (2001) study notes that training in SMSLI from an "expert" was a learning and meta-cognitive journey for her in spite of years of teaching in the early years, whilst FG teacher participants in this study indicated shock and dismay at entering the classroom as just graduated teachers and realizing that they could not implement literacy techniques required of them in the Year 1 class, in spite of having perceived themselves as prepared knowledge- and pedagogy-wise. Moats (2009) laments that several studies over the last twenty years conclude that: "Unfortunately, levels of knowledge content about language is typically found to be very low" (p. 387). Spear-Swirling and Brucker (2004) note that graduate teachers are often not prepared to address early literacy teaching techniques appropriately, and the present results indicate similar trends and patterns of patchy knowledge, where a mismatch between perceived and actual knowledge is observed, such that concern over correct teaching is inferred (Moats, 1995). These results also indicate that, following exposure to SMSLI, professionals become aware of the lacunae in the knowledge base and pedagogy, and understand this lack in their training. The concern here is that respondents in this study indicated that they

used classroom practices of which they had no or incorrect knowledge, as noted in the results of the knowledge section of the questionnaire, and by the professional and parent FGs' participants. This makes the situation more volatile and disconcerting, as potentially teachers are in a situation where they not only lack knowledge but would also need to experience a lot of unlearning with regard to content and self perception as knowers and educators. This may then lead to threatened self perception leading to resistance to change and hostility towards the SMSLI trainers (Rogers, 1969). Cunningham et al. (2009) report that: "a recent line of research suggests that teachers are largely unable to accurately assess their own performance on measures of literary knowledge and that they often overestimate their knowledge of phonemic awareness, phonics morphology and children's literature" (p. 428).

The present data indicate that less respondents than the number of FG participants could give a correct definition of SMSLI and correct examples/answers in the third section of the questionnaire. Since FG participants had also filled in the questionnaire, the implication is that even participants cognizant of and trained in SMSLI indicate a need for more knowledge and training, as well as a need to review local SMSLI training courses. Apart from implication for training which will be discussed in the concluding chapter, these results compare with Wray and Medwell (1999) comments on lack of meta-cognition even in effective teachers:

> Even the effective teachers, however, had limited success at recognizing some types of words … Despite this apparent lack of explicit, abstract knowledge of linguistic concepts, the effective teachers used such knowledge implicitly in their teaching particularly that connected with phonics. It seems that these teachers knew the material they were teaching in a particular way. They appeared to know and understand it in the form in which they taught it to the children, rather than abstracted from the teaching context. This is an important finding, which we feel has implications for the content of teachers' continuing professional development. (p. 4)

Similarly to the data in this study, the literature review presents several research findings concluding limited knowledge of phonological awareness or terminology related to language structure (e.g. Bos et al., 2001; Spear-Swirling

& Brucker, 2004).   The data indicate that in point of fact respondents exposed to theories of reading did not do as well as those exposed to multisensory techniques, but that both groups indicated <50% accuracy. This brings out the importance of the standards for reading professionals compiled by the International Reading Association (IRA, 1998).

The three IRA descriptors of proficiency are reflected in the present findings: (1) awareness, (2) basic understanding, and (3) comprehensive understanding. These three descriptors were referred to by FG participants and are further emphasised by the statistical data. The IRA (2001) also identifies seven key positive features in teacher training. FG participants' views were again in line with these features. They referred to a need for ITT to be (1) programmed with clearly spelled out purposes and goals, (2) a need for the Faculty of Education to have defined mission statements mirrored in its programmes, (3) a need for the Faculty of Education to ensure the quality of literacy programmes, (4) student-centred programmes listening to "what and how" needs to be put in ITT, (5) supervised apprenticeship programmes which go beyond the six-week teaching practice set-up, (6) programmes which embrace in-depth linguistic content knowledge in order to best understand how to meet the needs of diverse students, and (7) programmes that demonstrate the necessary knowledge and skills to help all children.   The literature indicates that the trend to produce teachers not versed in linguistic knowledge and techniques to teaching early literacy seems to be pervasive across continents with an Anglo-Saxon tradition. This body of literature now also includes Malta, a Mediterranean country with an Anglo-Saxon culture and set-up of education (Alexander, 2004; Moats, 2009; Jolliffe, 2006; Louden & Rohl, 2006). Whilst the results indicate that, as noted by Louden and Rohl (2006), one needs to be cautious against general conclusions that teacher training is ineffective, one also needs to be aware of "significant gaps in their preparation to teach literacy… [they] felt prepared for teaching literacy [only] at the most general level… [and a need for] specific literary teaching knowledge" (p. 77). As noted in the present data, Maltese early educators feel confident about general aspects of preparation to literacy but less confident about the mechanics of teaching

literacy and linguistic scientific knowledge necessary to do so (Louden & Rohl, 2006).

The present study and the literature clearly indicate that early educators have little or no knowledge of SMSLI and related content knowledge, and that professionals exposed to SMSLI perceive its usefulness and these techniques are more effective. Research findings and the present research findings herein discussed argue for my theory that teachers "do not know that they do not know" (Falzon, 2010, p. 104) with regard to a need for exposure to linguistic knowledge about the language structure and its need to teach early literacy as effectively and as expediently as possible, and is actually the major concern that inspired my main research question.

The present study indicates that early educators mostly understood SMSLI to mean the use of two or more modalities. Directly comparative studies on this terminology were not available, but the literature indicates limited knowledge of terminology of aspects of SMSLI (e.g. Binks, 2008; Bos et al., 2001; Moats, 1999). It is worth noting that the local DQSE (2009) also provides a generic definition in their policy document on core competencies: "multisensory teaching/learning (an approach which incorporates all sensory modalities) can be considered a key component in the teacher's toolkit with respect to the basic requisites for early literacy development" (p. 24). The cause for concern is that even the policy makers issuing formal documents from the Ministry of Education have patchy information in spite of having an effective SpLD unit with SMSLI trained professionals within their directorate. This is reminiscent of Alexander's (2004) concern that the government:

> though, listening only to those who are on its payroll or who speak its language, believes it knows better. Under our now highly centralized and interventive education system, those who have the greatest power to prescribe pedagogy seem to display the poorest understanding of it, and the discourse becomes mired in the habitual bombast, mendacity and spin of policy speak. The pedagogy of principle has yet to be rescued from the pedagogy of pragmatism and compliance (p. 29).

Considering the literature review as part of the research process and a contribution to the research findings, the contents of most local training

programmes supported by the knowledge base of respondents and comments from FG members reflect Alexander's concern - little or no reference to SMSLI. Scores of respondents who read the Diploma in Facilitating Inclusive Education a course in which I am directly involved and which includes an introductory study unit on literacy, still leave much to be desired and reveal a dire need for more knowledge and training. An inference from these results is that the Diploma in Facilitating Inclusive Education Training programme does not allow for enough time and space to provide LSAs with enough knowledge and know-how. The literature (e.g. Louden & Rohl, 2006; Moats, 2009) cautions for specific techniques and knowledge, as also noted by FG participants.

FG participants indicated dissatisfaction with their own and with present ITT where new graduates do not seem adequately prepared. Data in this study indicated that professionals were more satisfied with their own training than with present ITT. The concern is that the participants' perception of effectiveness of their own training as better than present training produced a knowledge base which indicated otherwise. This is again supportive of my theory that 'they don't know that they don't know'. These results also support the EC's (2007) concern that current teacher training programmes in EU Member States are often failing to give teachers the training they need. The EC further claims lack of cohesion, continuity and coordination between theory and practice, and lack of adequate teacher preparation. My critique of 'Do they know they don't know' is then again reinforced.   Tori (FG2) notes that she was not aware that she was not equipped to teach early literacy effectively and dived into classroom teaching confident of the skills and knowledge she thought she had. She then "got a fright because I had graduated from university and did not know how to teach phonics."

Moats (1994) notes that evidence indicates that graduate teachers are "typically" not equipped with the right knowledge base and techniques required to address reading and spelling explicitly. This claim is supported by the present research findings. Moats' (1994) "missing foundation" is evident in respondents' poor results of correct answers on linguistic knowledge, and as

also referred to by FG members' experiences. Bos et al., (2001) conclude that Educators' "demonstrated limited knowledge of phonological awareness or terminology related to language structure and phonics" (p. 98), and this study yielded similar results. 60% of professionals in the Bos et al. study were unable to answer correctly nearly half of the "Knowledge of Language Structure" questions, with scores generally falling below the 67% accuracy mark. Similarly, in this study   60.4% only managed to answer correcly up to 33 % of the items, and only 7.4% managed to get 67.75% or more correct.

When one compares actual statistical percentages, differences between the present research and the Bos et al. study, respondents of the present study actually indicated less knowledge in some areas. For example: almost all of Bos et al. (2001) could define 'phoneme', while in this study only 13.8% of the participants could give an example of a phoneme, and the total mean score with regard to identifying the number of phonemes in Maltese words was 0.78 (middle score 2) and less for English phonemes, which means that most participants got one or no item correct. Most of the Bos et al. participants could identify a short vowel sound. Respondents in the present study achieved one of the higher scores of accuracy with regard to vowel sounds when compared to other knowledge, but the score was still below the middle score.

Moats (1994) reports similar results and concludes that this lack of understanding of spoken and written language structures makes teachers unable to explicitly teach such essential skills to beginning and struggling readers. In her and in this study, misinformation on differences between speech and print and on how print represents speech was rife. Moats and Lyon (1996) note "insufficiently developed concepts about language and pervasive conceptual weaknesses in the very skills that are needed for direct, systematic, language focused reading instruction, such as the ability to count phonemes and to identify phonic relationships" (p. 79). This is also applicable to the present results. Comparing present results with Moats' (1994) survey - on which the present questionnaire was conceptually based - one notes the same general trend of results between American and Maltese professionals. Table 26 below is a comparison of the knowledge base of the two research tools.

Table 26: Comparing Moats' result with the present study

Description of knowledge	Moats (1994)		Present study Not exposed to/exposed to MSA	
Phonemes in words	Ox	25%	Fox	3.8% - 5.6%
	Straight	39%	Sptar	18.0% - 27.8%
	Precious	25%	Through	17.5% -23.2%
	Thank	39%	Ngħidlek	8.4% -11.3%
Consonant Blend	10% (100% accuracy to identify)		35.1% (giving an example)	
Syllables in words	Talked	77%	Nagħmel	76.2%
			Kiser	75.3%
			Għidlu	72.9%
			Karozza	73.9%
			Frugħat	73.6%
			Bind	51.1%
			Meat	49.8%
			Snake	40.9%
Linguistic knowledge (rule learning)	Explaining:		Syllabising:	
	Spelling double 'm'	20%	Eżerċizzju	19.0%
	Six syllable types	15%	Apricot	24.6%
	The "y" to "i" rule	30%	Table	47.3%

These percentages indicate similarities with regard to weakness of
knowledge, and knowledge based on intuition and personal experience, rather
than on linguistic knowledge. With regard to the present study, an added issue
regarding linguistic knowledge includes the bi-lingual profiles of these islands:
Malta, two official local languages - English and Maltese - where local Maltese
early educators seem to have better, although still insufficient, Maltese
linguistic knowledge. It is pertinent to note that both respondents who had been
and respondents who had not been exposed to multi sensory techniques
indicate lower scores in the present study. This may be due to the difference in
cohorts addressed, but definitely reflects a need for better SMSLI training than
what is presently locally available.

Knowledge of syllables needing no sophisticated linguistics knowledge in
the mother language compares across the two studies. The local study indicates
weaker knowledge in the second language. Furthermore issues of lack of
knowledge of linguistics are more pervasive than the issue of first or second

language when the need for linguistics knowledge arises. Participants in the present study actually did worse in Maltese syllabication when linguistics knowledge was required (Eżerċizzju – 19% accuracy). Furthermore, actual percentages across the studies from different countries are very comparable. The present data and the views of the FG members reflect this scenario. Petra, a parent, also noted a significant difference between her two siblings and insisted that she was very concerned when she realized that ITT training was not including important literary techniques and knowledge, given her perceived differences in reading success between her two siblings when they were trained by teachers who were (younger sibling) or were not (older sibling) exposed to SMSLI.   The Bos et al. (2001) study indicates differences in knowledge related to special educators and more experienced teachers. In the present study, comparison with special educators – for example, complimentary teachers – could not be made and is also considered as a limitation to the study and a suggestion for further research. Better knowledge, on the other hand, was not related to more experienced teachers or to FT profile,   but to exposure to multisensory approaches.

McCutchen et al. (2002) conclude that their experimental group trained in SMSLI "[significantly - p < 0.01] deepened their phonological knowledge after our instruction" (p. 75). The present data, on the one hand, present similar findings as respondents indicating exposure to SMSLI or to Adams' Model of reading did significantly better (Tables 37 and 38) than their counterparts. On the other hand, the total mean score of knowledge (17.11 and 21.05 respectively) is less then the middle score (24.00) and indicates a need for more knowledge. The query is – what level of correctness is enough for professionals who are responsible for teaching early readers? This has an implication for SMSLI trainings held locally. Even though FG members note that they feel much better prepared, this is then not reflected in the statistical data. Furthermore, the data indicates that, when compared with their counterparts, those exposed to such training may feel more confident in their 'knowledge' than the knowledge they actually have. As has been explained in the statistics chapter, whilst these respondents were more likely to give a correct answer, they were also less likely

to indicate that they were "unsure" and more likely to answer incorrectly than their counterparts.

Student Learning and Performance

At the start of this research process, I indicated that the body of research that clearly concludes that SMSLI is the most effective and expedient method to breaking the code to literacy (Appendices A and B). Hard core evidence of better reading results was not part of this research study directly, but FG participants perceived significantly better performances in children and categorically referred to better and faster learning towards independent reading. Furthermore, although the data indicate that professional early educators do not really understand what SMSLI is, all respondents notwithstandingly agreed that such techniques were positive and effective techniques. The parents and FG participants noted a perceived difference for the better in students' ability to break the code to literacy - both with regard to quality and speed of learning - if pupils had been taught by early educators exposed to SMSLI. Likewise, McCutchen et al.'s (2002) comparative study concludes that children in their experimental group [whose teachers had been trained in SMSLI over summer] "gained, on average, about 50% more in letter production than children in control classrooms" (p. 77), whilst no statistically significant difference in listening comprehension scores were noted. FG participants similarly emphasize that phonological and orthographic activities did not compromise or negatively affect language and comprehension growth. On the other hand, this present research revealed difficulties in implementation if classes had more than twenty students. Class size was not addressed in the McCutchen et al. (2002) study.

Professional FG participants, as well as the two parents interviewed, reflect research findings which examined reading levels and SMSLI instruction (e.g. Foorman et al., 1998; Moats (1995); O'Connor, 1999). The Spear-Swirling and Brucker (2004) study clearly indicates that pupils of trainee teachers who had received the training achieved significantly better reading results as pre-and post test results indicated, and error analysis also revealed links between teachers' patterns of word-structure knowledge and children's patterns of

decoding progress. Likewise, FG members indicated that more knowledge helped them improve their teaching techniques and resulted in perceived better results in children's reading not only with regard to effectiveness but also in respect of the time it takes children to become independent readers and the effect this has on learning and performance (Stanovich, 1986, 2000). The two parents also commented on perceived differences in their siblings' reading abilities and referred to the time factor of the learning, where their younger SMSLI-exposed children learned how to read much faster than their older non-SMSLI-exposed siblings. This is also reflected locally in teachers' perception in the Falzon and Muscat (2001) study and in the present data.

These present findings and previous international studies conclude that exposure to and training in SMSLI is possible, feasible and cost effective to deepen teachers' own knowledge, where teachers can use new knowledge to change their classroom practice, and feel better prepared than colleagues (e.g. Thelma FG 2). Teacher knowledge and classroom practice on SMSLI was perceived as improving student learning, where these explicit methods to teaching reading do not affect language growth. Such methods are inclusive and yield more effective readers (Podjhajski et al., 2009; Moats, 2009).

Classroom Pedagogy - Policies, Training and Class Practice

Alexander (2004) argues that pedagogy is still affected by Victorian education which was more concerned with character and utility rather than the intellect. He expresses concern that in the English context "pedagogy and didactics, to many, suggests one kind of teaching, traditional direct instruction" (p.10). He expresses dissatisfaction with and disdain for the 2003 Primary Strategy and laments that "we would do better to go back to Comenius in 1657, whose ideas on pedagogical structure and pace are far in advance of those in the [2003 DfES] Primary strategies" (p. 20). Likewise Jolliffe (2006) expresses concern that the effectiveness of the reform expected from the National Literacy Strategy was not as successful as expected due to a "failure to incorporate effective teaching and learning and also a failure to make explicit its underlying pedagogy (p. 44)"; whilst, Jolliffe argues, one of the reasons for the more

effective Success for All was the effective "provision of an off-timetable facilitator to provide on-going support, plus centralized training" (p. 45). This echoes the FG participants acknowledging the value and validity of the presence of an expert at school, and the training of the whole school staff, as well as their recommendation to have a national uniform policy on early literacy teaching techniques and resources. This has a strong repercussion for professional training, particularly in a context where Alexander (2004), like Hirsch (1996), alludes to "scant ground for hope" (Alexander, 2004, p. 23). Joshi et al. (2009b) echo that, in spite of several national American reports suggesting the effectives of SMSLI along with the exposure to quality literature in early literacy teaching, many in-service teachers are still not knowledgeable in the basic concepts and structure of the English language, what they refer to as the "basic building blocks of language and reading" (p. 392). Set against the EU's concern that programmes are not preparing educators effectively, one needs to look at the teacher trainers - the teachers of the teachers - themselves. These findings are also echoed in the present research by the data and the views of the FG participants.

The quality of teachers has a stronger impact on the learning of pupils than the quality of the curriculum, the school or the role of parents (Barber & Mourshed, 2007; Hattie, 2007). Furthermore, the earlier the code to literacy is broken the greater is the chance for successful learning and a better quality of life (Stanovich, 2000). This justifies the attention that needs to be given to policies with respect to teacher quality and appropriate teaching techniques and content to ensure that learners are not short changed. A ripple effect is to also ensure that ITT trainers are conversant with this area, as the limited research available indicates otherwise (Binks, 2008).

Dressing the Emperor?

This discussion indicated that the profile of early educators in Malta is very similar to that of other early educators in the Anglo-Saxon world. Linguistic limitations did not allow me to research what, for example, is happening in Asia, South America and other non-English speaking European countries such as

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Germany, Finland or Sweden. This may be a limitation to the discussion of these findings and to a possibly limited literature review, particularly given that Eurostat (2011) notes 100% functional literacy levels for Finns. On the other hand, the Maltese Educational System is based on the British system, and this gives some weight to comparisons made with British, American and Australian studies. It appears that with regard to training in America, the UK, Australia and Malta, we are hampered by a lack of exposure to SMSLI and to the patchy and non-cohesive presentation of theory and practice.

Teacher trainers are perceived by Maltese early educators as not even aware of the importance of such techniques for effective and expedient early reading success. This concurs with American research findings (e.g. Binks, 2008; Moats, 2009). Sharing these results with local colleagues and educators should be quite challenging - nobody wants to believe those who shout "the emperor has no clothes." One notes that SMSLI researchers are usually not classroom teachers but professionals in SpLD and LD, and this may be a determent to the dissemination of my results. Fuchs and Fuchs (1998) further point out that that, in professional literature, it is often noted that researchers are perceived as disrespecting teachers. That is not my intention. Ultimately, these data not only confirm other research findings but the Faculty of Education's - at the University of Malta - own reflections:

> Are your teachers *trained* to teach?' Experience with a century and a half of educational reforms has taught policy makers world-wide that plans for change will remain just that – *plans* – unless teachers are competent in implementing them (para. 7)… all routes into teaching [should] provide prospective teachers with adequate training in teaching methods, with enough field practice experience and with sufficient time to be socialized into the profession. (FoE, 2004, para .12)

Given Anders et al.'s (2000) meta-analysis and concern that, until the year 2000, only 140 studies had focused on ITT and teaching reading, compared with 19,457 studies on reading since 1970, this research contributes to the body of literature and directly addresses a concern of the EU regarding teacher training and literacy levels. In spite of Moats' and other experts' publications and research since the mid-nineties, Moats (2009) still laments that

several studies over the last 20 years conclude that "Unfortunately, levels of content knowledge about language is typically found to be very low" (p. 387), whilst Spear-Swirling and Brucker (2004) argue that graduate teachers are often not prepared to address early literacy teaching techniques appropriately.

The present data and the body of literature available became more poignant when the poor results of functional literacy of Maltese school leavers were published by the PISA 2009+ report (Walker, 2011), as I was in the process of concluding my writing. There seems to be consensus that most ITT programmes do not prepare trainee teachers adequately to address early literacy using SMSLI. The concern is - who is aware of these research findings?

Whilst I am certainly not concluding that ITT is locally "inadequate" (Lyon, et al., 1989), I would dare argue that the present research findings indicate that Maltese early educators are not adequately prepared to address the teaching of breaking the literary code in early literacy. Lyon et al. (1989) regard the teaching of literacy as the job of an expert, requiring intensive theoretical and practical preparation. Teachers need to be adequately prepared for teaching literacy, as this, in turn, not only brings about success for students but also self-efficacy for teachers. The ripple effect is also less referrals to intervention programmes; and more successful and independent readers in as expedient a time as possible (Stanovich, 2000).

In a context where Soodak and Podell (1996) postulate that students are usually referred for support when teachers feel that they cannot help bring about positive outcomes, one concludes that ITT and CPD in Malta in early literacy needs to be addressed and "must above all else focus on the quality of teaching reading in the classroom. The teachers must be crystal clear as to what pupils need to know, understand and be able to do to become confident and proficient readers" (Ofsted, 1996, p.7). We need to address this need in formal training conceptually, philosophically, concretely and strategically, such that no trained educator can lament: *"Why weren't we given this at university, something like this at university?"*

CHAPTER 8

The truth is out there…

Instead of highlighting, and attempting to remedy, apparent deficits in primary teachers' subject knowledge, the educational research and policy agenda for the twenty-first century would do well to include the investigation of teachers' learning in both formal and informal contexts. There is still much to be learned about the knowledge which successful primary teachers do possess; about the conditions and circumstances in which teachers' knowledge has been generated and developed through their careers; about the relationships between knowledge, values and classroom practice; and about the ways in which teachers can be encouraged to articulate and develop their knowledge and, in the process, making connections between the individual/personal and the wider social and cultural dimensions of teaching (Poulson, 2001, p. 52).

The conclusions to the research question yield relevant implications and recommendations for formal training, CPD, parent education and involvement, further research and need for policies. Results highlight marked deficits in Maltese early educators' basic language constructs knowledge and awareness of SMSLI, and indicate that exposure to training increases the required knowledge to effectively address SMSLI. Furthermore, implications for the knowledge-base of teacher trainers were also inferred by FG participants. Descriptive statistics indicated incomplete and incorrect knowledge. Higher scores for participants exposed to MSA and the FG participants' views on the one hand provide encouraging results that professional development to receptive professionals is effective in increasing both confidence and actual knowledge and ability, if the professional appreciates this body of knowledge; but, on the other hand, also indicates a need for longer and more intense training. Incomplete and unsatisfactory knowledge was recorded in spite of perceived exposure to SMSLI. Educators who indicated knowledge in SMSLI also indicated more confidence in knowledge and abilities to teach early reading skills than they actually have. Heightened teacher knowledge of such constructs correlates to perceived heightened student reading achievement and to similar studies. These findings echo Moats' (2009) "still wanted" concern: "One of the most common findings in studies of teacher knowledge is that teachers are unaware of, or misinformed about, the elements of language that they are expected to explicitly teach" (Moats, 2009, p. 387).

Evidence-based reading practices are available in the literature and on the market "researchers have made substantial progress in understanding how children learn how to read and what types of scientifically based reading instruction [REA, 1998] are most likely to ensure that the greatest number of children will be successful in learning how to read" (Reid Lyon & Weiser, 2009, p. 475). "Unfortunately current educational policies and funding practices continue to focus on program selection, school organisation, and student test scores – not teachers, the contexts in which they teach, or the leadership and professional development required to ensure teacher quality" (Moats, 2009, p. 387). This research continues to evidence and leads to a number of implications and recommendations that "teachers lack a basic understanding of

many concepts that relate directly to teaching beginning and struggling readers"
(Reid Lyon & Weiser, 2009, p. 475), in a context where researchers have

> " established that most students will learn to read adequately (though
> not necessarily well) regardless of the instructionsl methods they're
> subjected to in school.But they've also found that fully 40 percent of
> children are less fortunate. For them, explicit instructions (including
> phonics) is necessary if they're to become capable readers. These
> findings are true across race, socioeconomic status and family
> background. (Moats 2007, p,6)

Implications of the Research

My dream for this study is that it will hopefully serve as a springboard for
change and a catalyst for new plans of action in early literacy instruction and
training programmes both locally and abroad. The study, although original in the
sense that such research has, to my knowledge, never been carried out on a
national scale and in Malta, also reflects similar research findings yielding
uncannily similar conclusions. While, on the one hand, this encourages me to
confirm my now evidence-based perceptions and concerns for the local scene
and, in hindsight, is perhaps also triangulated by the PISA 2009+ results
(Walker, 2011); on the other hand, I find it quite disheartening that such
information has not yet reached classrooms and formal training programmes,
even though experts in the area are both at Malta's higher institution as well as
within the Ministry of Education. The Maltese proverb "Biskuttini f'ħalq il-ħmir
(Biscuits in donkeys' mouths) - referring to a lack of awareness, understanding
and appreciation due to lack of knowledge, awareness and understanding -
constantly came to mind as I was writing the discussion chapter. The rather
lackadaisical attitude towards early literacy instruction by early educators,
trainers and policy makers, in spite of efforts as noted in the literature and
personally experienced, is perhaps due to lack of exposure and awareness to
such an area of research. This brings challenges to how to disseminate and
convince. Possible ways to disseminate would be to approach not only the
department of primary education at the University of Malta, but also the SpLD
Unit and the Directorate for Quality and Standards in Education (DQSE) within
the Ministry of Education, and the shadow Minister of Education.

Recommendations

The findings, particularly the percentage of correct responses in the third part of the questionnaire and the views of the participants, have led me to reflect on a number of recommendations which are discussed below. The findings have empowered me to make recommendations backed by evidence and with much more conviction, particularly given that only just over half of respondents were satisfied with their formal training. In this sense, I have found this research process a liberating experience and an impetus for me to take action. Apart from being a basic skill for survival, literacy is also governed by The Matthew Effect (Merton, 1968a, 1968b, 1988) and relates to successful learning, socio-economic independence and a better quality of life (Stanovich, 1986, 2000). All recommendations are governed by this beacon and spurred by my dream for all children to succeed and have a good quality of life. Recommendations, therefore, need to include all stakeholders.

Formal training programme.
The results indicate a *strong need* for increased preparation in the linguistic components of the English and Maltese languages in programmes of trainees, not only in the B.Ed. (Hons) Course but also in courses aimed for class facilitators (LSAs) and KGAs. Spear-Swerling and Brucker (2004) insist that "teacher education must include information about English [and Maltese] word structure for educators who will teach reading" and suggest that "sufficiently intensive instruction may be important in developing word-structure knowledge" (p. 72).

One can, for example, increase the present course led by Dr Firman to at least four ECTSes per year, particularly for teacher trainees choosing early years as an area of speciality. This may include study units already offered by the Department of Linguistics, the Department of Communicative Disorders and the Department of Psychology at the University of Malta. Textbooks on linguistic knowledge are already available for both the English (e.g. Freeman & Freeman, 2004) and the Maltese language (e.g. Azzopardi, 2007; Cassar, 2002), and coursework should ensure that trainees know their content. Trainees

must not only be familiar with carefully chosen textbooks (e.g. Aaron, Joshi & Quatroche, 2008; Waugh & Jolliffe, 2008) or papers (Berninger et al., 1999; Moats, 1994, 1999, 2009), but should be taught actual linguistic knowledge, rules of language and also experience and be examined on linguistic lab work on linguistic knowledge starting from how to pronounce the letter sounds in Maltese and in English, particularly given the different vowel sounds of the two languages.

Trainees must also have the opportunity to understand and practice how to use this knowledge in the classroom teaching environment through micro teaching, observation, and simulated teaching experiences by expert in SMSLI. This may also entail the restructuring of programmes, particularly with reference to theory and practice and the set-up of the teaching practice. It is recommended that, as noted by FG participants, formal training adopts TP sessions where teachers remain in the classrooms and trainees can team-teach and get continuous feedback from the appropriately trained teachers, where TP sessions are continuous throughout the course.

The trainers and policy makers - dissemination and training.
Although this study focused on early educators' knowledge and awareness, in order to encourage such early educators to at least be open to change and training, policy makers, college principals, education directors, education officers and SMTs must also be informed and trained in order to be capable of taking informed decisions and to implement plans of actions together with their early educators (Binks, 2008; Joshi et al. 2009b; Moats, 2009). To ensure present and future training in SMSLI, trainers at the two Maltese institutions involved in early educators' training and education - University of Malta and MCAST - must also be addressed (Joshi et al., 2009b) in order to be able to take informed decisions with regard to curriculum, programmes, study units designs, as well as choice of textbooks (Joshi et al., 2009a).

The major concern of FG participants as well as conclusions in the literature (e.g. Binks, 2008; Louden & Rohl's, 2006) was the relevance of literary teaching knowledge trainee teachers were exposed to. The theory that is

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arising from the present data and international research findings is that this is a *vicious circle of teacher trainers not aware of SMSLI*, whose lack of such awareness results in SMSLI exclusion from training programmes, and where literacy being taught in schools is built on childhood memories. Akin to the Maltese proverb - *Il-Ħuta minn rasha tintenn* (Fish start smelling bad from their heads), unless we address the top people - the teacher educators and the policy makers - programme changes in favour of *SMSLI,*are unlikely to occur. *SMSLI,*arose from the Specific Learning Difficulties arena, and is still finding difficulties to insert itself in general teaching (Moats, 2009).

Waugh and Jolliffe (2008) note that teachers "need[s] to have a broad perspective and a receptivity to change, if [they are] to respond to change effectively. Without this, change can be both threatening and unsettling, and teachers' understanding of how they can modify their practice will be limited" (p. 277). This is also applicable to teacher education, and is the recommendation which is causing me most concern. In a context where Reynolds et al. (1992) conclude that *experts* did not attribute the mastery of structural language knowledge as the critical component in successful reading, and where this is reflected in formal programmes, how will the results be reviewed? Will they be accepted? Will my colleagues take it personally? How will my colleagues react when I present this body of knowledge and these results? Publishing in journals is an option which I will be taking up, but I am also interested in and committed to this material forming part of the teacher training course.

At the brainstorming stage of this chapter, a number of options came to mind. One course of action could be to meet the Head of Department of the Department of Primary Education (DPE) and ask for a staff meeting; another option could be to go through my Head of Department; another could be to seek advice from the Rector before approaching the Head of the DPE. I would rather tend to opt for proposing an in-house meeting with the DPE through my Head of Department (Department of Psychology). This data then also need to be shared with our second higher institution, namely MCAST, which follows B.Tec. courses. The FoE's Centre for Literacy at our university, a research and development centre focusing on literacy and other basic skills, whose mission is

to respond productively to needs and issues at a professional development and research level with regard to policy advice, consultancies and training, should also be included as its publications do not seem to include SMSLI (e.g. Mifsud et al., 1998; 2000, 2004 ; Mifsud, Grech & Dimech Llanaj, 2003; Mifsud, Grech, Hutchison & Morrison, 2005). Again, a link with resources available at the University of Malta and the Ministry of Education (SpLD unit) should be made throughout this dissemination process.

Continuous professional development (CPD).

Brady et al. (2009) conclude that experienced teachers are more sceptical and resistant to explicit teaching of language structure than novice teachers, particularly if they feel that such new knowledge constitutes a threat to their belief systems. This has implications on how to introduce SMSLI training locally. Attitude is, I believe, of paramount important. My experience has led me to conclude that if one approaches professionals with an "I know it all. Here I am to teach you" attitude, resistance would certainly be much stronger. I prefer to approach the situation as an exercise in sharing with them my different experiences and starting from my own past experiences of becoming aware of SMSLI.   I always try to do this when I am asked to train teachers, and for which I receive positive feedback from participants and heads of schools. This has now also been reinforced by the documented views of the participants and turns my impressions into evidence-based findings. The participants noted that the best training was registered when they were seen and treated as partners in the process of learning.

These findings therefore strengthen the practice I have been following professionally and my recommendations for CPD on a national scale. Studies in changes in beliefs and attitudes (e.g. Fullan, 2000; Kaiser, et al., 2009) indicate the need of a democratic decision making process based on informed choices, involving the *sharing* of knowledge and *allowing time* for modelling experiential sessions and self-reflection of the new skills and knowledge, in order to allow the front liners to embrace the changes recommended. These strategies are also very relevant in helping policymakers create strategies for change, ensuring respect for front liners.

Given that this research concludes limited SMSLI knowledge by professional early educators and that "teachers cannot teach well what they do not understand themselves" (Moats, 2009, p.387), I propose the use of the Rosenfeld Instructional Consultation (IC) model (Kaiser, et al., 2009), a "collaborative [teachers and consultants] [school-based] problem-solving process to address both academic and behavioural referral concerns of teachers… to create and maintain student success within the general educational classroom by enhancing the capacity of the teacher to provide empirically supported instruction and management techniques" (p. 446) . They conclude that that this process left the 274 teachers in their study satisfied, and that these teachers "perceive it to be an effective process and felt more confident about handling similar problems in the future… enhanced their problem solving skills and learned specific instructional and behavioural strategies as a result of IC" (p. 454).

It would therefore be wise that CPD sessions were held in small groups of educators who know each other and to have school-based CPD, as FG participants themselves also noted. The Ministry of Education may use the resources it already has and may empower the SpLD Unit headed by Dr Christine Firman (Education Officer, Literacy) to go to schools and train early educators, and not just complimentary teachers. This is more poignant, given that most Maltese early educators in Year 1 and Year 2 Maltese state schools' classrooms are "supply" as opposed to "trained" teachers, as noted by the population profiles (Appendix M).

The issue of turnover of personnel also needs to be taken into account. Given that there may not be enough personnel in the SpLD unit, this outreach school-based CPD training should also out-source experts well-versed in SMSLI. Lists of these "knowers" are available from the Malta Dyslexia Association and the Malta Association for Professionals in Learning Disabilities. These SMSLI trained professionals can be used as models for observations, apart from the use of micro-teaching and use of technology explained above and recommended by participants.

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Given that this new knowledge may be a threat to self-perception (Rogers, 1969), it might be wise to first introduce the system using identified early educators trained in SMSLI themselves to work with the SpLD unit in this training programme. This may require that, at least for a year, these early educators trained in SMSLI be relieved from their classroom duties in order to do on-site support and training sessions and work with the dyslexia specialists. This would also be giving the message that SMSLI is not just for students in difficulties but is effective for all early readers. Given the results of this present study, these educators must liaise with the SpLD unit in order to ensure that they have enough training and the correct knowledge-base.

This strategy for CPD is based on the literature. Snow-Renner and Lauer (2005), and Garet, et al. (2001) indicate that, to be most effective, CPD activities should be spread over time; be collaborative; use active learning; be delivered to groups of teachers; include periods of practice where new learning can be linked to work experiences; include coaching and follow-up; utilise and address actual resources and content from the syllabi; promote reflective practice where adequate time for development is given and opportunities to learn through observing and analysis of understanding of the subject matter are provided; encourage experimentation; and respond to teachers' needs. One is reminded of Stallings and Krasavage's (1986) and Fullan's (2000) conclusions that any change in education has to involve and be supported by teachers. This is again not a mere distribution of material but involves meetings, planning, engagement and teamwork.   School college Principals and the Ministry of Education need to support this CPD endeavour with the appropriate human and financial resources as well as with the set-up, for example through the support of the DQSE, to evaluate the impact of this professional development on teachers' practices and student learning. This CPD must also be linked to parent information and education.

The parents.
The body of literature, which this research did not examine as it was outside the project remit, is clear on the positive effect of parental involvement in education (e.g. DCSF, 2008). This was also referred to by FG participants and

by the two parents met. Parents need to be informed of correct strategies so that the link from school to home is beneficial. The theory behind SMSLI as well as the necessary content also need to be explained to the parents in order to inform, explain and convince. This can be done through meetings throughout the year backed by detailed instructions when work for home is assigned and, in the case of reading, what to do both during specific exercises, during paired reading and during language experience exercises. The media may also be used (talk shows) to promote such techniques.

Well-designed systematic literacy programmes.

As noted in the present research findings, Rose (2006) concludes a need for well-designed systematic programmes built on concepts of inclusive strategies and using principles of high quality phonics work within a language-rich curriculum; Jolliffe's (2006) proposed need to ensure that early educators understand how and why to use programmes is also echoed through the views of the FG participants; the research findings and Waugh and Jolliffe (2008) both recommend CPD in knowledge and techniques; whilst Moats' (2009) insistence on the need for linguistics knowledge is evidenced in the data statistics and by the FG participants. These are the professional building blocks which are necessary when using literacy programmes. Whereas I do not think it wise to propose a specific programme, it is important that schools and colleges are supported in their search for a systematic programme, and that teachers have a big say in the choice of these programmes following appropriate training such that an informed decision may be taken and programmes can be used well.

Currently, in Malta, "Jolly Phonics" (Lloyd, 1998) for English early literacy is heavily promoted by official Marthese Cini. I have reservations on the use of the programme in toto as it has aspects which are not totally comparable with SMSLI, missing elements - such as the omission of all English phonemes and all possible spellings of phonemes (Waugh & Jolliffe, 2008) -, use of unclear and too cluttered pictures and picture cues, and memory cues linked to actions rather than the visual/auditory. Furthermore, I query whether teachers know how to utilize this programme for the benefit of their pupils, given the data which indicate a lack of knowledge (Moats', 2009) and rationale (Jolliffe, 2006).

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Although the Jolly Phonics progamme was not specifically part of this research, the findings indicate that training in the Jolly Phonics Programme (Lloyd, 1998) did not yield the acceptable linguistic knowledge required. Whilst the research findings have not changed any opinion I had on this programme, it has empowered me with evidence which points at a need for training in linguistic linguistic content and the rationale behind SMSLI (e.g. Moats, 2009). Simply presenting a literacy programme without giving the *what*, the *how* and the *why* (Jolliffe, 2006) is not very beneficial. This has implications for CPD training for the local state educational system and manifests a need to teach professionals how to use literacy programmes by empowering them with the necessary background knowledge to be able to assess, evaluate, critique and adapt for the local context and culture.

Programmes chosen need to be research-based, adapted to the local culture, embracing Adams' model of reading (1990), and supported by appropriate content and pedagogical resources. Locally, research on a programme developed by an SMSLI trained expert (Muscat, Unpublished) has already been researched (Falzon, et al., 2011; Falzon & Muscat, 2001) and perceived as an effective and inclusive programme by early educators. This can be further researched and utilised as Muscat has developed her programme for both languages.

National dissemination and a national policy.
Apart from the evidence that SMSLI is an inclusive strategy to address early literary instruction with children of all abilities, resulting in less need for referral (Moats, 2000), in the case of children in need of such support it is important that the same strategies, resources and memory cues are used in class and during intervention/tutoring whether in or out of school. It is therefore important that there is continuity and cohesion between home and school, within and without classroom learning; and between school, community and home tutoring (e.g. Turnbull et al., 2010).

The country needs a strong policy backed by this evidence-based research to promote SMSLI not only in school classrooms but also in any other

fora where literacy is being addressed: e.g. Equal Partners Foundation, INSPIRE founation, the Ministry of Education's Foundation for Education Services (FES) with whom the literacy NWAR programme (Macelli & Cini, 2005) is attached. Given concerning statistics on Maltese literacy, not only of children (Mifsud et al., 1998, 2000) but also of adolescents (Walkers, 2011) and adults (NSO, 2007, 2010), this policy should also embrace adult literacy learning. Post-16 literacy instruction is available through the state - for example, Department of Lifelong Learning, and the Employment and Training Centre; para-statal institutions such as the MCAST's Learning Support Unit; and non-governmental organisations such as the Paulo Freire Institute set up by the Maltese Jesuits to promote literacy and community development.

It is recommended that a committee/task force including experts in SMSLI be appointed to address not only literacy instruction for the young learner but also post-16 literacy instruction. Such a committee should also include members of Maltese organisations which cater for literary learning and should be responsible for training and monitoring. Malta also needs research and a policy regarding when to introduce literacy of the two languages. This is also an area for further research.

Responsibilities and remits of the local SpLD Unit.
Given the knowledge base of personnel within the state's SpLD unit and the SpLD unit's involvement with core competencies in relation to complimentary teachers, and the creation of checklists for early literacy acquisition and referral (DQSE, 2009, 2010), the Ministry of Education should widen the role and parameters of the SpLD unit to include the training of all early educators. This would also be reflective of the inclusive ethos Malta's educational system promotes (DQSE, 2010). The business of understanding SMSLI because it addresses reading difficulties is limiting and counter-productive. SMSLI should not only lie within the remit of complimentarity. The training proposed should be available not only to recognise reading difficulties but to use as a general practice in the classroom. The directorate also needs to be well-informed of the definition of SMSLI by the SpLD unit - that SMSLI is not merely a multisensory

technique strategy but involves structure, sequence and linguistic knowledge, and is based on evidence-based research.

In order to reflect a national policy and cohesion with regard to early literacy Instruction, the SpLD unit should also be responsible for local after-school programmes such as the NWAR afterschool literacy programme (Macelli & Cini, 2005). The SpLD unit should also work in liaison with the Department of Further Studies and Adult Education and with the Directorate for Lifelong Learning such that trainers for adult learning are exposed to SMSLI and adequate resources for adults are designed accordingly.

Implications for Further Research

These research findings yield implications for further research, as listed below. Other recommended research includes research with parents, school administrators, policy makers and officials within the Ministry of Education, as well as research with church and independent school (e.g. Falzon & Muscat, 2001). The voice of the children themselves, although young, may be another source of feedback, particularly with reference to learning, fun and boredom. Furthermore, comparison of reading scores of children exposed to and not exposed to SMSLI is also important.

SMSLI and training programmes' outcomes.
NCES (2000) reports that although there is agreement that new teachers must be better prepared to teach students, there are limited data available on how well educational institutions achieve this. According to Anders et al. (2000), 19,457 studies have been conducted on reading since 1970, but of these only 140 focus on ITT and early literacy. Further research in this area is therefore recommended locally and internationally, especially since most research in the area seems to be American.

SMSLI and reading scores.
Although this study did not include comparing levels of literacy between groups of students exposed to and not exposed to SMSLI, some reference was made when (a) all respondents agreed that SMSLI are effective, and (b) the

professionals and the two parents noted a perceived difference in students' ability to break to code to literacy with regard to quality and speed of learning. Snow et al. (2005) refer to a need for "documentation that teachers who possess this sort of knowledge actually teach better and more effectively (where more effectively means students learn more and better) than those who do not" (p. 210). This is a suggestion for further research and possible replication of studies such as the McCutchen et al. (2002), where the perceived better success concluded in their research was supported by children's test scores.   In the local context, evidence-based research as to when to introduce literacy of the two languages, given the oral language abilities of the students, is also required.

The Trainers

Binks (2008) notes that whilst there is a body or literature indicating lack of teacher expertise, little research focuses on the knowledge and abilities of the "teachers of the teachers". This needs to be addressed locally.   In order for teacher preparation in reading education to be improved, an increase of university instructors' knowledge of critical components of basic language constructs is needed. Convincing teacher-educators of such a need, and presenting *SMSLI*,to teacher-educators through actual training seminars for teacher educators and policy makers, is therefore necessary.

One proposal is for lecturers within the DPE to visit the Texas Reading First Higher Education Collaborative (HEC) as it is designed to address teacher-educators by directly addressing the "missing link" in ITT (Moats, 1995). It would also be advisable that such a visit include officials from the Department of Education within the Ministry of Education so that similar policies and techniques are discussed across stakeholders. This, of course, can only happen if these officials and teachers' trainers appreciate and see the value of SMSLI. Evidence-based results disseminated among these professionals would then be of use.

Cunningham et al. (2004) conclude that there is a need to continue to focus on improving teacher preparation and teacher development in the area of

early literacy by highlighting directions that reading education might take. Given the results of this study, in order for teacher preparation in early literacy to improve, university instructors' knowledge on critical components of basic language constructs is paramount. How to improve teacher trainers' linguistic knowledge, as well as how to effectively impart this knowledge and ability such that it is carried over into classroom practice, is also an area of research to be considered.

Linguistic Knowledge of Early Educators

This research has only picked on limited linguistic areas of knowledge and left other areas out (e.g. morphology), as explained in Chapter 4. In order to better understand this lacuna in professional teachers, more in-depth and detailed research on linguistic knowledge may be a necessary tool for further training and to understand on what to focus on. Furthermore, the research seems to imply that, whilst on the one hand educators exposed to SMSLI had more knowledge, than those not exposed, the knowledge indicated by respondents exposed to SMSLI, who may also have been FG participants, was still found wanting. The implication is that even SMSLI training presently carried out on the island, including the ones I organize, need to be reviewed with regard to length and content of course work. Training needs to be across the board: initial formal training, continued professional training, post graduate courses organized.

Evaluation of the Research: Strengths and Limitations

Any research study is an attempt to explore into our experiences, and it is therefore important that this is evaluated in order to be aware of its strengths and pitfalls. I have reflected on this throughout the research process and will highlight the following considerations:

1. Teachers' awareness of SMSLI has never been researched locally on a national scale, although a school-based short study was carried out in 2001 (Falzon & Muscat, 2001). This may be perceived as both a strength and a limitation. On the one hand, the work contributes to the local community

and is original; on the other hand, it may be perceived as my personal agenda, given that I myself form part of the world of "special populations", given my background in Specific Learning Difficulties and my status as an "SpLD expert" locally.

2. This study only used descriptive analysis. The use of regression analysis may have yielded further valuable information. Lack of regression analysis of the present data may be considered a limitation and a suggestion for further research.

3. FG participants were acquainted with the researcher, given the small-island profile of this community, and some of them had also been ex-students. This may have led to a Silverman's (2010) "staged environment" scenario.

4. In spite of the possibility to generate and make inferences, given the number of people who answered the questionnaire, 20% of the respondents who opted to participate ultimately left out aspects of the questionnaire. This may have been due to limitations in the questionnaire or fear of lack of knowledge.

5. At the outset of this research journey I was aware that my immersion in the subject may be a strength, but that I always had to consider and address impartiality. Throughout the research process I attempted to be my own devil's advocate in the context of insider research (Northumbria, 2011).

6. Even in the context of a qualitative piece of work, including the views of the two parents is both a strength and a weakness. On the one hand, it may be viewed as contributing to data triangulation, but on the other hand it may be an over-exuberance on my part to promote SMSLI and not a representative of parents. More research in this area is recommended.

7. This study focuses only on early educators. The exclusion of the participation and views of parents, pupils, complimentary teachers, teacher educators and policy makers may be considered as a limitation and a remit for future research. Research should be extended to cover the views of all possible stakeholders.

8. The views of the two parents are clear: parents are voices that need to be heard, and their "layman" status should neither be undermined nor overlooked in research, decision-making and policies.

9. Complimentary teachers were not included in this study. This may be considered a limitation and a possibility for further research. One may actually compare the knowledge of complimentary teachers with that of early educators in order to gather evidence for further planning. Ideally, complimentary teachers and early educators should not only share knowledge, but also use similar techniques and resources. Furthermore, given that locally speech and language pathologists also deal with literary difficulties, these should also work together with complimentary teachers and early educators with regard to training, continued professional development, teaching strategies, interventions and resources.

10. My immersion in the field of SpLD is again both a strength and a weakness both from a research and from a dissemination perspective. On the one hand, apart from being trained in SpLD, I was also a classroom teacher of the early years for a number of years, and that adds weight to my recommendations for classroom teachers, particularly in the Maltese context; on the other hand, my present immersion in SpLD may be misconstrued as a bias towards children with learning difficulties at the expense of the rest of the classroom, rather than the inclusive strategies and Success for All SMSLI promotes and embraces.

11. My research may be mistakenly regarded as an "attack" on present formal training programmes, as is also concluded in the literature (Fuchs & Fuchs, 1998). This implies a need for tactful communication.

The "Prod to Reach the Sky"

When I decided to start reading for my PhD it took me less than fifteen minutes to decide on the topic of research and the reason why. My practicality wanted something tangible for my community and, given my professional and personal experience, this was for me the best plan of action. This research process was both an enthusiastic and a disheartening journey: a work of love, sadness and frustration. As the results unfolded, my evidence-based enthusiasm to encourage and promote pedagogical changes in my own community was dampened by the body of literature which has still not made its way into the psyche of early educators, policy makers, education administrators

and teacher trainers (Moats, 2009). If others before me have not managed to make changes, what chance do I then have? What makes my results any more special to be heard? Perhaps the profile of a small-island community will make it easier for me to disseminate, just like the statutory Personal and Social Development programmes I am involved in, flourished much more quickly and pervasively in Malta than in the UK (Falzon & Muscat, 2009).

My love for children and their success in literacy and learning is choked by sadness and frustration when listening to the experiences of children and parents. This spurred me on to complete the research process and to conclude on a disheartening theory. In spite of evidence clearly indicating SMSLI as the best way to address early literacy learning, given that this body of literature more often than not comes from the "special education" field, SMSLI knowledge is lost to early educators in the general classroom and is missing from formal training programmes. In spite of this adversity, in support of all the *SMSLI* research available and of all pupils who deserve to be taught how to read as effectively and as expediently as possible, I echo Howe's (1861) passionate lyric: "[SMSLI]'s truth is marching on" (line 4).

American poet Robert Frost (1875-1963) describes two kinds of teachers: the kind that fill pupils with so much information - "quail shot" - that pupils cannot move, and the kind that just give a "little prod behind and you jump to the skies." SMSLI empowers pupils to "reach the skies" in literacy as effectively and as expediently as possible, using prods of sequentially structured knowledge and skills, which is a *must (*Hirsch, 1996; Moats, 2009) in early literacy education.

The present research findings and the literature point towards a dire need for change in order to improve baseline literacy in Malta. The Pisa 2009+ report (Walker, 2011) reveals serious concern about functional literacy in Malta. Results of this present research and from the OECD (Walker, 2011) implicate a need to address the teaching of early literacy and again support my concerns, the research findings, the theory extrapolated and my conclusion that - *they do not know that they don't know*.   This research journey started with a concern which was, in hindsight and in a serendipity experience, put into the limelight on

a global level (Walker, 2011). Let us hope that the concerned voice of a parent is listened to by experts and professionals, locally and abroad:

> *I see the difference in reading   [between my two siblings]…*
> *Difference even in the way the children were introduced to reading…*
> *I am not involved in teacher training from this aspect emm… But I*
> *am trying to understand what [teachers] basically know. Now, when I*
> *see the full results [the full six-year run of primary education of both*
> *my children], I myself can make recommendations for the university.*
> *Because in the first place, teachers need to know the system of how*
> *to teach [literacy] inside out (Petra).*

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Appendix A
Sixteen areas of Literacy Competencies (IRA 1998, pp. 9-22)

1. Theoretical base: Reading is and should be taught as a process and should include the issues of diversity, the importance of literacy to personal and social growth, literacy as a means of transmission values, the interrelationship between the individual and reading, understanding of the major theories of language development, cognition and leaning, and the impact of the environment, the individual, intellect and learning, language development and reading acquisition.

2. Knowledge base: The IRA expects competent and effective reading professionals to understand the written language as a symbolic system – the relationship between language and literacy acquisition; principles of new language acquisition; the linguistic system of language and its relation to the reading and writing process; the interrelation between the spoken and the written language; that students need opportunities to integrate literacy through reading; emergent literacy and the necessary experiences needed to support it; appreciate the role of meta-cognition in the literacy process; how the school contextual factors can influence student learning; reading research and how this influences literary education; the importance of awareness of literature and appropriate books; that teaching goals, instruction and assessment should be aligned.

3. Individual differences: Learners are individuals and there are differences among learners, necessitating the importance of creating programme that address individual strengths and needs and are aware of intervention programmes.

4. Reading difficulties: Understand what may cause literacy challenges, be cognizant of the principles involved in reading difficulties, be well aware of individual and group intervention programmes, and know instructions for children with learning difficulties.

5. Creating a literate environment: Reading professionals should be able to create a literacy environment, use appropriate texts and reading material to create interest in reading, foster a positive reading environment to promote reading as a valuable lifelong activity, provide various reading opportunities

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for students and implement strategies that include parents in the literacy development of their pupils.

6. <u>Word Identification, Vocabulary Spelling</u>: Reading professionals' ability to monitor their own knowledge of words through the use of syntax, semantic and grapho-phonemic relations; be knowledgeable and use phonics appropriately; teach students to use context to define new and unfamiliar words; be aware of diverse spelling patterns; employ effective techniques - in effect, use a multisensory approaches to teaching literacy.

7. <u>Comprehension</u>: Create an environment where students are taught to glean meaning from print through all various strategies possible, including retelling, questioning strategies and monitoring.

8. <u>Study Strategies</u>: Various strategies and technique involved in studying, including awareness of reading speed rate, time management and organisation of information.

9. <u>Writing</u>: The IRA expects reading professionals to know how to teach students the different appropriate strategies for particular kinds of writing - drafting, revising and editing.

10. <u>Assessment</u>: The ability to develop and implement diverse methods of assessment to gauge progress and learning.

11. <u>Communicating information about reading</u>: Ability to keep students, parents and other professionals involved in areas that need improvement and areas that have improved.

12. <u>Curriculum Development</u>: Ability to translate curricula into effective programmes addressing the needs of all children.

13. <u>Professional Development</u>: participating in professional development programmes and be self critical.

14. <u>Research</u>: Ability to apply research to improve literacy and teaching strategies.

15. <u>Supervision of Paraprofessional</u>: Plan lessons for paraprofessionals in the classroom, promote teamwork in the classroom, and use role release.

16. <u>Professionalism</u>: Continuously pursue knowledge about literacy, be reflective about teaching practices, be open to research, present own research findings and promote collegiality.

Appendix B

A detailed overview of the study units of the B.Ed. (Hons) primary programme

Description of Work	Year of study				Total
	1	**2**	**3**	**4**	
Primary Studies - Core Content	**26**	**10**	**20**	**8**	
Teaching and learning numeracy	4	0	0	0	
Teaching English to young Learners	**4**	0	0	0	
Maltese teaching for 5-11 year old primary school children	**4**	0	0	0	
Introduction to music, dance & movement in physical education	6	0	0	0	
Teaching Primary Science	4	0	0	0	
Religion and Christianity	4	0	0	0	**64**
Introduction to drama and art	0	4	0	0	**26.7%**
Teaching primary social studies: history, geography & citizenship	0	6	0	0	
Further topics in primary Mathematics education	0	0	4	0	
Once upon … how to teach reading & literature genres	0	0	**4**	0	
Pedagogies and resources in teaching English	0	0	**4**	0	
Primary religious education	0	0	4	0	
From creating a text to performance	0	0	4	0	
Teaching science and technology	0	0	0	4	
Teaching mini-games & organizing field day through PE learning outcomes	0	0	0	4	
Primary Studies - Core Professional	**8**	**12**	**10**	**12**	
Supporting effective teaching with technology	4	0	0	0	
An introduction to environmental education	4	0	0	0	
Managing the primary classroom and school development plans	0	4	0	0	
Literacy difficulties and young learners	0	0	**4**	0	
Health issues and health education in the primary School	0	4	0	0	**42**
Disability issues and inclusive strategies in primary schools	0	4	0	0	**17.5%**
Promoting positive behaviour & emotional literacy	0	0	4	0	
Legal issues in educational studies	0	0	2	0	
Bilingual education and intercultural competence	0	0	0	4	
Assessment in the primary classroom	0	0	0	4	
Psychosocial issues & their influence in educational performance	0	0	0	4	
Primary Cycle - students choose one of two areas:	**0**	**8**	**8**	**4**	
Early Childhood Education					
Fostering language and literacy development	0	**4**	0	0	
The early childhood education Curriculum	0	4	0	0	**20**
Observation and assessment in early childhood education	0	0	4	0	**8.3%**
Managing the early years classroom	0	0	4	0	
Play in the early years	0	0	0	4	
Field Placement	**8**	**8**	**8**	**8**	**32**
School experience/Field Placements II, III and IV					**13.3%**
Dissertation	**0**	**0**	**0**	**12**	**12** **5%**
Research Methods - The primary school teacher as researcher	**0**	**4**	**0**	**0**	**4** **1.7%**
General Pedagogy	**8**	**6**	**0**	**0**	
Organizing learning in the primary classroom	8	0	0	0	**14**
Responding to Diversity in the primary classroom	0	4	0	0	**5.8%**
Reflective teaching in the primary classroom	0	2	0	0	
Personal Skills - An introduction to intra/interpersonal skills	**6**	**0**	**0**	**0**	**6** **2.5%**
Education Studies	**4**	**8**	**12**	**12**	
The development of the Primary School child	4	0	0	0	
Understanding Classrooms	0	4	0	0	
Teachers' writing and reading the self as narrative	0	4	0	0	
Understanding Schools	0	0	4	0	**36**
The Child as learner	0	0	4	0	**15.0%**
Politics of Pedagogy	0	0	4	0	
Education and Society	0	0	0	4	
Constructs of teaching and leafing in the primary context	0	0	0	4	
Teacher philosophy and children	0	0	0	4	
Elective Credits – Out of a possible choice of 16 study units (each of 2 ECTS) one is available in the fourth year: Reading between the lines: Unpacking complex concepts in children's literature	**0**	**2**	**2**	**4**	**8** **3.3%**
Academic Writing and referencing *(requested by the registrar)*	**0**	**2**	**0**	**0**	**2** **0.9%**
Optional Credits	**0**	**0**	**0**	**0**	**0** **0.0%**
TOTALS	**60**	**60**	**60**	**60**	**240**

INE1202 Multisensory Approaches to Reading in the Early Years

The official course description and learning outcomes note that:

The use of a structured multisensory programme using structured multisensory techniques for teaching literacy has often been cited as one of the best ways to introduce and develop literacy in the classroom (e.g. Traub & Bloom 2000; Oakland, Black, Stanford, Nussbaum & Balise, 1998; Hornsby & Shear, 1980). Although multisensory techniques originated from the field of Learning Disabilities (Specific Learning Difficulties), (e.g. Snowling, 2000; Augur, 1982; Hornsby & Shear, 1980; Orton 1976), its use in the classroom situation is increasingly being appreciated (e.g. O'Connor, Fulmer, Harty & Bell, 2005; Moats 1999; Chall, 1983). Traub and Bloom, (2000) claim that teachers using structured multisensory reading programme find the techniques effective when used for children not only with Specific Learning Disabilities (SpLD) but also with all children, resulting in children learning to spell and read more easily at an earlier age. This study unit intends to introduce the early educator to the philosophy, concept and introductory skills involved with such type of programme based on the Interconnectionist model of reading (Adams, 1990). By the end of this study unit, students are expected to:

- Understand the philosophy and context of Multisensory techniques
- Address issues of Phonological Awareness
- Be aware of the mechanics of phonological and phonemic awareness
- Understand how to approach visualization techniques
- Be able to work with Rhythm
- Understand how multi-sensory techniques can be implemented for the general classroom
- Understand the relevance of meta-cognition in the context of Multisensory techniques
- Be able to plan a multisensory literacy lesson
- Evaluate a reading/spelling skill

- Understand the role of memory and rehearsal in a multisensory programme.

This description and the aims were based on *SMSLI*,and designed after I started this research. The 14 contact hours (2 ECTS) did not give me enough time to present the theory, the content knowledge, and to link it with practice. The aims and the content were over-ambitious. Whereas all were referred to, not all were covered in depth. Secondly, whereas I was aware that this group of 18 already working students would at least become aware of *SMSLI*, and would hopefully want to explore more, it was frustrating to know that these students needed to know much more to address literacy in their nurseries and Kindergarten, particularly when they were describing incorrect teaching techniques. I had to deal with lively and concerned discussions of incorrect practices, as well as process their frustration and, at times, anger from a cognitive and an emotional perspective. To their credit, students were very receptive and ready to explore the new techniques discussed over the five weeks of the course. I did not have enough time to present all the content knowledge needed, and feel as if I stopped in the middle of training.

The study unit was split up into three hour sessions and, whereas this gave students time to ask questions and to relate to their classroom practices, these were too long and tiring. Furthermore the span of the course was only five weeks. Two-hour sessions would have been better, because a longer span of time would have allowed for implementation of activities as discussed in the classroom, more discussion and feedback on techniques tried.

APPENDIX D

SCHOOL OF HEALTH, COMMUNITY & EDUCATION STUDIES
Research Ethics sub-Committee

Advice on ethical considerations for "Insider Researchers"
in Health, Social Care and Education Contexts

The School ethics review panel receive a number of proposals from students and staff who are conducting research within their own workplace, and as such they are "insider researchers" (Robson, 2002; Fox et al, 2007; Costley et al; 2010). There are particular ethical considerations pertaining to insider research, in addition to those issues relating to all research. In recent months, the review panel have identified that a number of proposals are not addressing these issues, resulting in the proposals not being approved at initial review, and amendments being required to address these issues. This advice note is intended as a reminder of some of the key issues relating to conducting research within our own organisations / workplace, which should be considered by School staff and students in their application for ethical review. Some examples of "insider researchers" include:

- A member of academic staff in HCES researching their professional practice with their peers and / or students

- A healthcare practitioner evaluating a new service provision within their workplace, for an academic qualification

- A teacher conducting research within their classroom / school, for their MA in Education

- A social worker undertaking data collection for research within their employment setting

When making a submission to the School ethics review system, it is recommended that insider researchers provide a critical reflection on their position within the research setting (including power differentials), identifying the ethical considerations that are specific to their study and setting out the ways in which they intend to address these issues, including:

- **Potential for coercion of participants**
  - Recruiting and collecting data with colleagues; including staff members who are managed by the insider researcher
  - Recruiting and collecting data with service users (eg children in the classroom, patients, students).

Staff / students / service users may feel that they have no choice but to take part in the study; they may fear adverse consequences to their role / position at work, or study or the loss of service provision. Voluntary participation is at the heart of ethical research, and conducting research with colleagues /students / service users can present a threat to voluntary participation.
Ways to address this: ensuring full informed consent highlighting the voluntary nature of participation and no adverse effects on roles or services provided.

All aspects of the recruitment phase need to be addressed to mitigate against coercion (eg the way the study is discussed verbally with potential participants can reiterate the voluntary nature and lack of any consequences for choosing not to take part). Involving another member of staff within the organisation to support with recruitment can help to create a little more distance between the researcher and the participants.

- **Boundaries of confidentiality**

Insider researchers can be privy to information that they have gathered in their role as a researcher that they would not necessarily have gained in their role as a practitioner within the setting, eg disclosures of malpractice or bullying in the workplace or classroom.

Ways to address this: identifying clear boundaries of confidentiality within the research team, which are shared with participants prior to data collection. Insider researchers are clear what they will do if they encounter such disclosures, ensuring they adhere to their professional codes of conduct and university codes of ethics.

- **Clarifying the sources and methods of collection of data**

Insider researchers usually collate / assess / utilise aspects of their day to day practice within their research projects. Although these aspects are part of typical practice in their role, they are being explored and documented for the purposes of research, not for the purposes of practice, therefore they need to be presented as data to be collected within the project.

Ways to address this: stating clearly the activities that will be undertaken to collect data for the research (even if this is the same as day to day practice, research ethics approval will be required).

- **Dissemination of findings**

Sharing findings within the research setting, and beyond, can impact on participants' anonymity.

Ways to address this:
- o Considering participants' anonymity within the setting
- o Considering the ways in which findings will be shared, who they will be shared with, and how the findings are intended to be used with / by the setting. Ensuring participants are aware of this prior to their agreement to participate.

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JR REs-C Advice note 03.03.11

Appendix E
Questionnaire

NB. The questionnaire was reset to suit requirements of this page set up

CODE_____

This questionnaire is designed to gather data on techniques of early literacy. The target population is Kindergarten, Year 1 and 2 teachers and Learning Support Assistants. Kindly read each item carefully. Tick where applicable and try to answer each item.

_____

Part 1 - Demographic Data

1. Present Teaching Post: 2.   Age:

Kindergarten 1	□	18 - 21	□
Kindergarten 2	□	22 - 30	□
Year 1 teacher	□	31 - 40	□
Year 2 teacher	□	41 - 50	□
LSA in Kindergarten 1	□	51 and over	□
LSA in Kindergarten 2	□		
LSA in Year 1	□	3. Gender:	
LSA in Year 2	□	Male	□
Other, please specify:		Female	□

_____

4. Educational Background and Training:

B.Ed. (Hons) Primary	□	B.Ed. Primary	□
B.Ed. (Hons) Secondary	□	B.Ed. Secondary	□
B.Ed. (Hons)_____	□	PGCE	□
B.Psy. (Hons)	□	B.Psy.	□
B.A.	□	B.A. (Hons)	□
MATC	□	Training College	□
2-year Kindergarten Course	□	ETC Childcare	□
Cert. in Fac. Incl. Education	□	Dip. in Fac.Incl.Educ.	□

Other (Please specify)   _____

_____

5. During my formal training I was exposed to the following as preparation to teaching early literacy:

Reading theories	□	Literacy and the NMC	□
Top-down approaches to Reading	□	Phonics	□
Bottom-up approaches to reading	□	Whole Word approach	□
Interactionist Approaches to Reading	□	Multisensory approaches	□
Interconnectionist Model of reading	□	Reading Difficulties	□
Language Experience Approach	□	Paired Reading	□
Learning Support strategies	□	Strategies for teaching reading	□
Other, please specify_____		(Three lines provided)	

6. I feel that my formal training as a Teacher/Kindergarten Assistant/LSA has prepared me to teach early reading skills effectively?
Strongly agree □   Agree □   Unsure □   Disagree □   Strongly disagree □

7. Have you attended any other course/s related to effective techniques to teaching early: Literacy   Yes   □   No   □
If yes, please specify course/s attended:
_____

Part 2 Classroom Practices

8. In my classroom, I use the following techniques to address early literacy:

Phonological awareness	□	Phonemic Awareness	□
Phonics	□	Synthetic Phonics	□
Syllabication	□	Decoding Skills	□
Letter-Sound correspondence	□	Using spelling to improve reading	□
Feeling letter	□	Clue Pictures	□
Onset and Rime	□	Teaching letter names	□
Whole Word approach	□	Language experience	□
Paired Reading	□	Rule learning	□

Other, please specify: _____(Three lines provided)
_____

9. When I hear the phrase 'Multisensory techniques to teaching early literacy' the following six words come to mind: (SIX LINES SPACES PROVIDED)

10. I became aware of multisensory approaches (MSA):

during my formal training	□	during in-service training	□
during Professional courses attended	□	via internet	□
from my working place	□	from my colleagues	□
Still need to be familiar with MSA	□		

Other (Please specify) _____(Three lines provided)
_____

11.   Kindly read statements carefully and tick where appropriate:

Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
I think I am prepared to teach phonological awareness					
I think I am prepared to teach phonemic skills.					
I think I am prepared to teach phonics skills.					
I think I am prepared to teach decoding skills.					
I think I am prepared to teach onset and rime.					

Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
I think I am prepared to teach syllabication skills.					
I think I am prepared to teach through a whole word approach (Look & Say).					
I think I am prepared to use rule learning in teaching reading skills.					
I think I am prepared to use Paired Reading.					
I think I am prepared to use the Language Experience approach.					

_____

12.   I would define multisensory techniques to teaching literacy as follows:
        (Six lines were available)

13.   Kindly read statements carefully and tick where appropriate:

Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
I think that Multisensory techniques are important tools in teaching early literacy.					
I think that teachers' courses are adequate preparation to teach early reading in Malta					
I think that I am not adequately prepared to use multi techniques in teaching early literacy					

_____

Part 3 Planning for Further Professional Training
My research involves planning for further professional teacher training. I would therefore appreciate it if you were to answer the following so that I can identify areas for further training for professionals:

14. Kindly indicate if you know what the following terms mean.

Consonant Blend	I know ☐	Do not Know	☐
Phoneme	I know ☐	Do not Know	☐
Phonological Awareness	I know ☐	Do not Know	☐
Phonemic Awareness	I know ☐	Do not Know	☐
Phonics	I know ☐	Do not Know	☐
Grapheme	I know ☐	Do not Know	☐
Digraph	I know ☐	Do not Know	☐
Long and Short Vowels	I know ☐	Do not Know	☐
Magic-E Rule	I know ☐	Do not Know	☐

Onset and rime   I know □   Do not Know   □

15. Kindly give an example to explain the following:

Consonant blend   _____

Phoneme   _____

Phonological Awareness _____

Phonemic Awareness   _____

Phonics   _____

Grapheme   _____

Digraph   _____

Long and Short Vowels   _____

Magic-E Rule   _____

Onset and rime   _____

16. How many phonemes and graphemes are in the following words

    Vaska   Phonemes_____   Graphemes_____

    Għasfur   Phonemes_____   Graphemes_____

    Sptar   Phonemes_____   Graphemes_____

    Ngħidlek   Phonemes_____   Graphemes_____

    Bridge   Phonemes_____   Graphemes_____

    Fox   Phonemes_____   Graphemes_____

    Sheep   Phonemes_____   Graphemes_____

    Through   Phonemes_____   Graphemes_____

17. Circle the short vowels of the following words:
    Meat   Apricot   Snake   Sit   Bind

18. Circle the long vowels of the following words:
    Meat   Apricot   Snake   Sit   Bind

19. Write these words in syllables:
    Meat   _____   Apricot _____
    Snake   _____   Sit   _____
    Bind   _____   Table   _____

20. Aqsam dawn il-kliem f'sillabi *(Write these words in syllables):*
    Kiser   _____   Nagħmel _____
    Għidlu   _____   Frugħat _____
    Karozza _____   Eżerċizzju _____

Thank you for your time and participation   Ruth Falzon
                                                         February 27th, 2008

Nota Bene
(a)   Feedback Sheet was reset to suit requirements of this page set-up.
(b)   Three to four line spaces for comments were left after each
       question/statement.
(c)   Original Pilot Study Feedback Sheet was three pages long.

How long did it take you to fill in the questionnaire? _____ minutes

Is the language accessible?   Yes   □   No   □

Is the information presented understandable?   Yes   □   No   □

Is everything explained well?   Yes   □   No   □

Were the questions clear?   Yes   □   No   □

Please mark on the questionnaire what you think should be changed, and
comment below

Do you agree with all parts of the questionnaire?   Yes   □   No   □

What do you think should be deleted orchanged from the questionnaire? Why?

The information sheet/Consent Form
Is the language accessible?   Yes   □   No   □

Is the information presented understandable?   Yes   □   No   □

Is everything explained well?   Yes   □   No   □

Were the questions clear?   Yes   □   No   □

Other comments:

Ruth Falzon

November 15th, 2007

Appendix G

Pilot Study Participants - Comments on Draft Questionnaire

In spite of trying to be very aware of the time and length of the questionnaire in the initial design stage, this was still a major issue that had to be worked upon. The average time it took the pilot study participants to fill in the questionnaire was 28.75 minutes – ranging between 20 and 65 minutes. Feedback given was that the questionnare was too long and that it needed shortening. The educational psychologist felt that it might be "somewhat dragging towards the end." This was the most challenging feedback to deal with. On the other hand, language usage was accessible and clear.

Pilot study participants noted that the information presented was clear and understandable. A dyslexia tutor commented that the material might be challenging "for someone who is not specifically trained in the area of dyslexia or multi-sensory teaching" whilst a class teacher noted that "certain meanings I was not sure of." These comments are congruent with the literature (e.g. Moats, 2009) and as such I felt that the aims of the questionnaire were being reached. Most participants commented that there was a need for more space for writing; this was addressed.

12 of the 14 pilot study participants felt that the questions set in the questionnaire were clear, whilst two of them had some queries. For example, the educational psychologist noted that "If the respondent is familiar with the terms presented, no major difficulties should be encountered," whilst the dyslexia tutor noted that "questions are clear for someone knowledgeable in the field." One university staff member noted that "if you do not know the meaning of Phonics … it is difficult to answer the questionnaire. You need to have training in literacy to be able to answer the questionnaire, but would change nothing" and the educational psychologist suggested that the "questionnaire should be given in a group context, as people who are not sure of the subject under study will probably resort to looking up the required information.". This was discussed with the supervisor and it was thought that, even if respondents were to resort to the Internet, as some indeed did (Table 53 in Chapter 5), the overall results would not be tainted. Using resources to answer correctly was perceived as a possible positive outcome in that respondents could at least be intrigued and wanted to learn more about SMSLI. Moreover, it was felt that it was highly unlikely that many respondents would want to invest the time into researching the Internet, given the

number of questionnaires they had to fill in throughout the year and their busy schedule. The possibility of including the statement: "I referred/did not refer to resources/colleagues when filling in the third part of the questionnaire" was contemplated. Following discussion with my supervisor, it was concluded that this could actually bias respondents into such action and it would be better if this statement were not included.

Ten pilot study participants agreed totally with the questionnaire and two agreed with most parts of the questionnaire. All agreed with the concept of the questionnaire. LSAs were quite positive about it; for example, one LSA noted, "Very detailed, thus including a great deal of useful information for the study". Another felt that it "addresses topic well" and a third felt that all parts of the questionnaire were clear. The educational psychologist felt that emphasis should be given to the "differentiation in the teaching of Maltese and English." However, I felt that this was not an issue as SMSLI can be used for all alphabetic-code written languages, and the difference would in any case come out in the last section of the questionnaire.

Pilot study participants were given the opportunity to write other general comments. In general, they were positive about the questionnaire and felt that it would be a good contribution to the island. University staff understood that teachers may not have been exposed to this material: "Perhaps, as a teacher, if I have not heard about multi-sensory, after completing the questionnaire I would want some information about it" and one LSA noted that the questionnaire might serve as an important catalyst for the need of further knowledge.

Appendix H

FOCUS GROUPs' GUIDING QUESTIONS

1. What did you think and feel when you were first exposed to SMSLI?
2. How did your exposure to SMSLI influence your teaching?
3. How did your exposure to SMSLI affect students' learning?
4. In your experience, is SMSLI respectful of inclusion and effective for students of all abilities?
5. Do you and your pupils find SMSLI techniques boring and unmotivating?
6. Do you think SMSLI should be included in ITT?
7. What features, if any, should be included in ITT training?
8. Do you think that teachers are prepared for SMSLI in their training?
9. Do you think that teacher-educators are aware of SMSLI?
10. Do you share your SMSLI knowledge and techniques with other teachers? What is your experience when this happens?
11. Suppose you had one minute to talk to the Minister of Education on early literacy teaching, what would you say?
12. Of all the things we discussed and shared, what to you is the most important?
13. Is there anything you would like to add, or anything you feel we did not discuss or include?

These questions were adapted when carrying out the parents' interview.

Information Sheet Questionnaire Participants

<u>**Structured Multisensory Techniques for Teaching Literacy**</u>
<u>**Information Sheet Questionnaire Participant**</u>

I am a PhD Student at Northumbria University. As part of my research project, you are being invited to take part in a research study on awareness, and understanding of structured multisensory techniques for teaching literacy. Before you decide to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you wish. The study involves all KGAs, LSAs, Year 1 and Year 2 teachers in Malta and Gozo. You have been asked to participate as you are an early educator and your contribution to this research is very important to me. If you do wish to be involved, you will be given this information sheet to keep and be asked to sign a consent form.   You are still free to withdraw at any time and without giving a reason, without any repercussions whatsoever.   In order to ensure confidentiality and anonymity, the questionnaire will be coded so that at no point in time should participants write their names on the questionnaire. Furthermore, I will personally be distributing the questionnaires and either wait for participants to fill them up or call later to pick them up, as the school may wish. I will be available for queries and questions at all times. Questionnaires will be put in a closed box for later analysis, stored securely and destroyed appropriately after the study. Part 1 below informs you about the purpose of this study; Part 2 gives you more detailed information about the way the study is run.

<u>Part 1 -</u> This study intends to explore awareness of, perceptions and understanding of Structured Multisensory Techniques for Teaching Literacy among early educators (KGAs, LSAs and Years 1 and 2 teachers). The specific research questions are:
1. What are the Maltese early educator's perceptions and understanding of a structured multisensory approach to teaching literacy?
2. What background knowledge do Maltese early educators have about the mechanics of literacy?
3. Do Maltese educators have a meta-cognitive awareness of all the components involved in teaching literacy? If yes, how and from where did they get this awareness?
4. How does the Maltese situation compare with other countries?

The aim of the study is to try to address information KGAs, LSAs and teachers have with regard to teaching literacy in the early years. Your school will be forwarded a short report of the result of the study when the research has been completed.

<u>Part 2 -</u> In order to address the research questions above, I intend to use both qualitative and quantitative research tools. These include the attached questionnaire which is meant to assess perceptions and understanding towards structured multisensory programmes of literacy. Filling in the questionnaire will involve around 20 minutes of your time for one time only; I will be coming to the school premises to aid the process. Qualitative Data will involve four focus groups made up of eight teachers in each group. Teachers will be contacted via e-mail or at work. The meetings of the focus groups will last around 90 minutes each and will be held at the University of Malta or at a place convenient to all members, taking into consideration transport and distance.

You may ask for more information, if required. I can be contacted
by e-mail at ruth.falzon@um.edu.mt
by phone on 2340 2928 or
at this address: Ruth Falzon, Department of Psychology,
                    Faculty of Education University of Malta,
                    Tal-Qroqq, Msida   February 8th, 2008

Structured Multisensory Techniques for Teaching Literacy
Information Sheet for Focus Group Participants

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Talk to others about the study if you so wish. Part 1 of this sheet gives you information about the purpose of this study and what will happen if you take part. Part 2 gives you more detailed information about the conduct of the study. The study involves all KGAs, LSAs, Year 1 and Year 2 teachers in Malta and Gozo who were invited to fill in a questionnaire, and four focus groups to which you are invited to participate. If you do wish to be involved, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason, without any repercussions whatsoever. If required, any data already collected will be destroyed. All other data collected will be stored securely and destroyed appropriately after study. It should also be noted that confidentiality will be respected.

Part 1

This study intends to explore awareness of, perceptions and understanding of Structured Multisensory Techniques for Teaching Literacy among early educators (KGAs, LSAs and Years 1 and 2 teachers). The specific research questions are the following:

1) What are the Maltese early educator's perceptions and understanding of a structured multisensory approach to teaching literacy?
2) What background knowledge do Maltese early educators have about the mechanics of literacy?
3) Do Maltese educators have a metacognitive awareness of all the components involved in teaching literacy? If yes, how and from where did they get this awareness?
4) How does the Maltese situation compare with that of other countries?

The aim of the study is to try to address information KGAs, LSAs and teachers have with regard to teaching literacy in the THIS should be 'their' if it refers to the teachers

early years. If you participate in this study you will be forwarded a short report of the result of the study when the research has been completed.

Part 2

Qualitative and quantitative research tools were designed to address this research project. These include a questionnaire to assess perceptions and understanding towards structured multisensory programmes of literacy which all KGAs, LSAs and Years 1 and 2 teachers in Malta and Gozo were invited to fill in. Questionnaires took around 20 minutes to complete.

Qualitative Data will involve four focus groups, made up of eight teachers in each group. Teachers were contacted via e-mail or at work. The focus groups will last around 90 minutes and will be held at the University of Malta or at a place convenient to all members, taking into consideration transport and distance.

You can ask for more information, if required. I can be contacted by e-mail at ruth.falzon@um.edu.mt by phone 2340 2928 or at this address:

<div align="right">
Ruth Falzon

Department of Psychology

Faculty of Education, University of Malta, Tal-Qroqq, Msida

June 2008
</div>

Questionnaire and Focus Group Participants' Consent Form

CONSENT FORM – Focus Group Participants

Participant's Number for this Study: _____

Title of Project: <u>**Early Educators' Awareness and Knowledge**</u>

<div align="center"><u>**Structured Multisensory Techniques for Teaching Literacy**</u></div>

Name of Researcher: Ruth Falzon

Please initial each box, if you agree

1. I confirm that I have read and understand the information sheet dated ☐
    _____for the above study. I have had the opportunity to consider
    the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to ☐
    withdraw at any time, without giving any reason, without my medical care
    or legal rights being affected.

3. I understand that relevant sections of any of the data collected during the ☐
    study may be looked at by responsible individuals and regulatory authorities
    from the University of Malta and from Northumbria University. I give my
    permission to these individuals to have access to my records.

4. I agree to take part in the above study.   Yes   ☐   No   ☐

_____   _____   _____
Name of Participant   Date   Signature

_____   _____   _____
Name of Person taking consent   Date   Signature
(if different from researcher)

_____   _____   _____
Researcher   Date   Signature

Focus Group participants – Professional personnel

Focus Group 1
1. Primary School Teacher   Tamara   B.Ed. (Hons) Primary
2. Primary School Teacher   Tina   PGCE/ Masters early Childhood
3. Primary School Teacher   Tessa   PGCE
4. Primary School Teacher   Toni   PGCE
5. Class Facilitator (LSA)   Frieda   Dip. in Fac. Incl. Education
6. Class Facilitator (LSA)   Fran   Dip. in Fac. Incl. Education
7. Class Facilitator (LSA)   Thea   Dip. in Fac. Incl. Education
8. Primary School Teacher   Tricia   Trained in the UK Primary
9. Class Facilitator   Frankie   Dip. in Fac. Incl. Education
10. Head of Primary School   Hilda   Head, Independent school

Focus Group 2 (Two KGAs phoned that they could not attend)
11. Primary School Teacher   Thelma   B.Ed. (Hons) Primary
12. Primary School Teacher   Tori   B.Ed. (Hons) Primary
13. Primary School Teacher   Tamsin   B.Ed. (Hons) Primary
14. Primary School Teacher   Talia   B.Ed. (Hons) Primary
15. Primary School Teacher   Tobia   B.Ed. (Hons) Primary
16. Primary School Facilitator   Fiona   Dip. in Fac. Incl. Education

Focus Group 3 (Three KGAs did not show up)
17. Primary School Teacher   Tona   Montessori Diploma
18. Primary School Teacher   Trish   Montessori Diploma
19. Support Teacher   Sunta   Montessori/ Hornsby Diploma
20. Support Teacher   Sina   Hornsby Diploma dyslexia tutor
21. Primary School Teacher   Tika   B.Ed. (Hons) Primary
22. Primary School Facilitator   Fanina   Dip. in Fac. Incl. Education

Focus Group 4 (Two KGAs and one teacher had to decline due to sickness)
23. Primary School Teacher   Tabatha   B.Ed. (Hons) Primary
24. Primary School Teacher   Trudy   B.Ed. (Hons) Primary
25. Primary School Teacher   Tommie   B.Ed. (Hons) Primary
26. Primary School Facilitator   Frances   Dip. in Fac. Incl. Education
27. Primary School Facilitator   Florinda   Dip. in Fac. Incl. Education
28. Primary School Teacher   Theresa   B.Ed. (Hons) Primary
29. Primary School Teacher   Tammy   B.Ed. (Hons) Primary

Out of the 95 schools which initially agreed to take part, 90 primary schools were finally included in the data. A state school and a church school did not want to participate, whilst four church schools and one independent school misplaced all the questionnaires and were not included in the sample. One head of a state school decided not to give the questionnaires to her KGAs as she was sure they "would not know how to fill it in and it is not their area", whilst another state school misplaced half of the filled-in questionnaires. 701 out of a possible 1183 questionnaires were returned (59.26% of the total possible population). This is quite a high rate of response that makes generalization and inferences possible (Baruch, 1999; Cummings et al., 2001; Ransdell, 1996). This selection from the possible population of 1183 guarantees a maximum margin of error of 2.36% (sample size calculator, http://www.surveysystem.com/sscalc.htm). The population sample possible (100% response rate) was worked out following communication with each school via landline, as explained in the main text. The possible sample was 1183 early educators: 487 KGAs, 383 teachers - 195 Year 1 and 188 Year 2 teachers and 313 LSAs.

Comparing Rate of Response with Size of School

An analysis of the response rate indicates that the smaller the school the higher was the rate of response (Table M1). A response rate was computed as a percentage for each school and then the One-Way ANOVA test was used to compare the mean response rates among small-, medium- and large-sized schools. Moreover, the Tukey Post Hoc Test was used to provide a pair-wise comparison in the mean response rates of the three school clusters. A statistical difference in the rate of response is found between small and large ($p = <0.0005$), medium and small ($p = <0.0005$), medium and large schools ($p = 0.001$), as noted in Table M2 and Figure M1.

Table M1. Percentage of respondents by school size

School Size	Respondents	Population	Mean	Standard Deviation	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Small	317	429	73.89%	**28.32**	71.20	76.58
Medium	206	377	54.64%	**31.35**	51.47	57.82
Large	178	377	47.21%	**22.58**	44.93	49.50
TOTAL	701	1183	59.26%			

Table M2. Rate of response and size of school - Tukey post hoc test

Size of school		Mean Difference	Std Error	p-value
Small	Medium	19.25	1.95	<0.0005
Small	Large	26.68	1.95	<0.0005
Medium	Large	7.43	2.02	0.001

Figure M1. Response rate according to size of schools
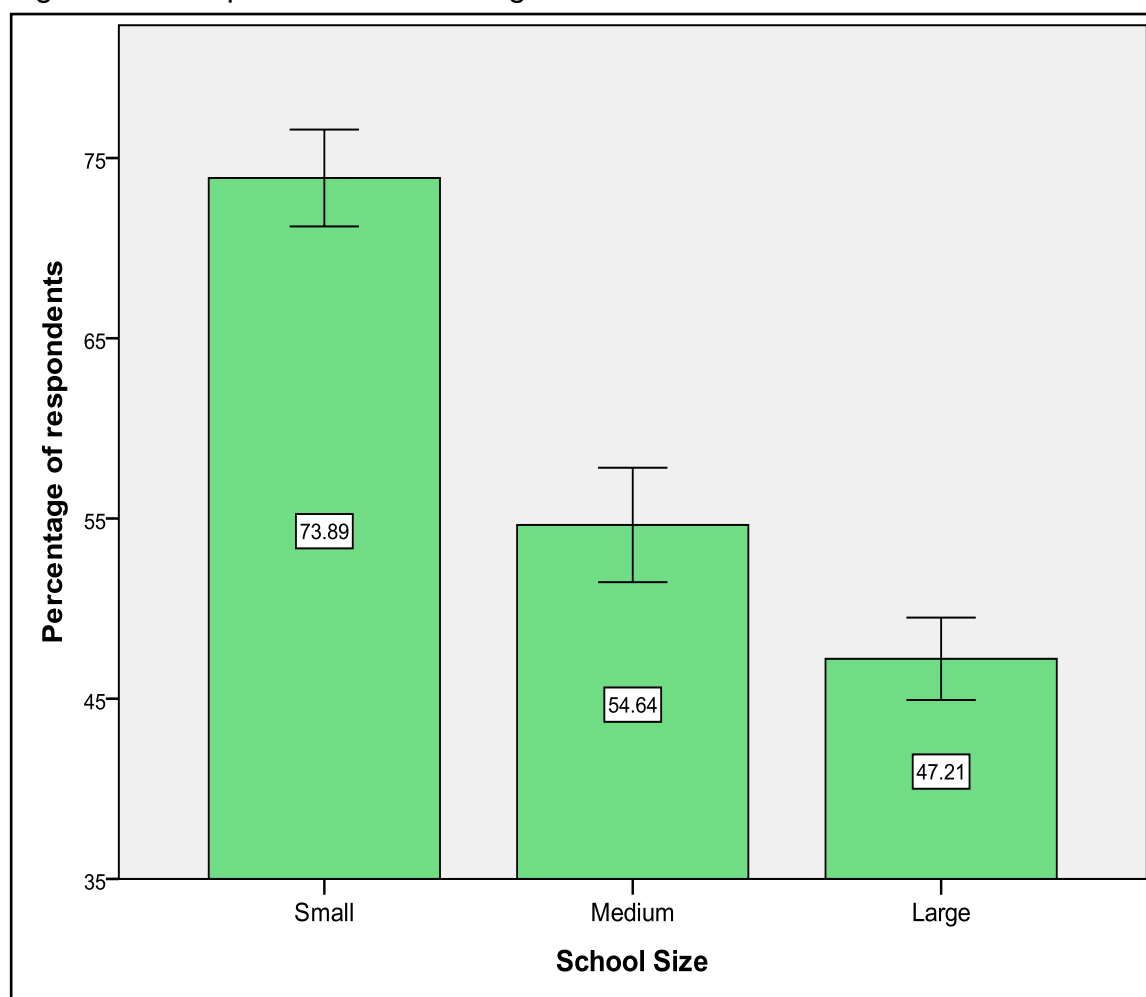
Comparing Rate of Response with Type of School

562 out of 903 (62.24%) state school early educators, 92 out of 170 (54.12%) church school early educators, and 47 out of 110 (42.73%) independent school early educators responded. The highest rate of response was from state schools whilst participation of early educators working in independent schools was the lowest. Table M3 indicates that the difference in rates of response between church-state ($p=0.05$) and state-independent schools ($p<0.0005$) is significant, whilst the difference between church-independent schools ($p=0.061$) is considerable but not quite significant.

Table M3. Tukey Post Hoc Test: Type of school and rate of response comparison

Types of School Comparisons	Z scores	p-value
State-Church	1.96	0.050
Church-Independent	1.87	0.061
State-–Independent	3.92	<0.0005

Comparing Rate of Response with Type and Size of School

Table M4 below and Figure M2 overleaf indicate that respondents from small state schools (78.45%) and small independent schools (75%) school had the highest rate of response.

Table M4. Response rate according to size and type of school

School Type	School Size	Possible	Actual	Percentage
State	Small	283	222	78.45%
State	Medium	243	162	66.67%
State	Large	377	178	47.21%
Church	Small	110	68	61.82%
Church	Medium	60	24	40,00%
Church	Large	0	0	0.00%
Independent	Small	36	27	75.00%
Independent	Medium	74	20	27.00%
Independent	Large	0	0	0.00%
Total	Small	429	317	73.89%
Total	Medium	377	206	54.64%
Total	Large	377	178	47.21%
TOTAL	All Schools	1183	701	59.26%

Medium-sized independent schools (27%) were those who answered least, followed by medium-sized church schools (40%). Figure M2 further indicates a statistical difference between small and medium independent schools (z=5.747; p <0.0005); middle and small church schools (z=2.605; p=0.0009) and state medium and small schools (z=3.047; p=0.002). No statistical difference was found between state, church and independent medium-sized schools.

Figure M2. Sample distribution as per size and type of school
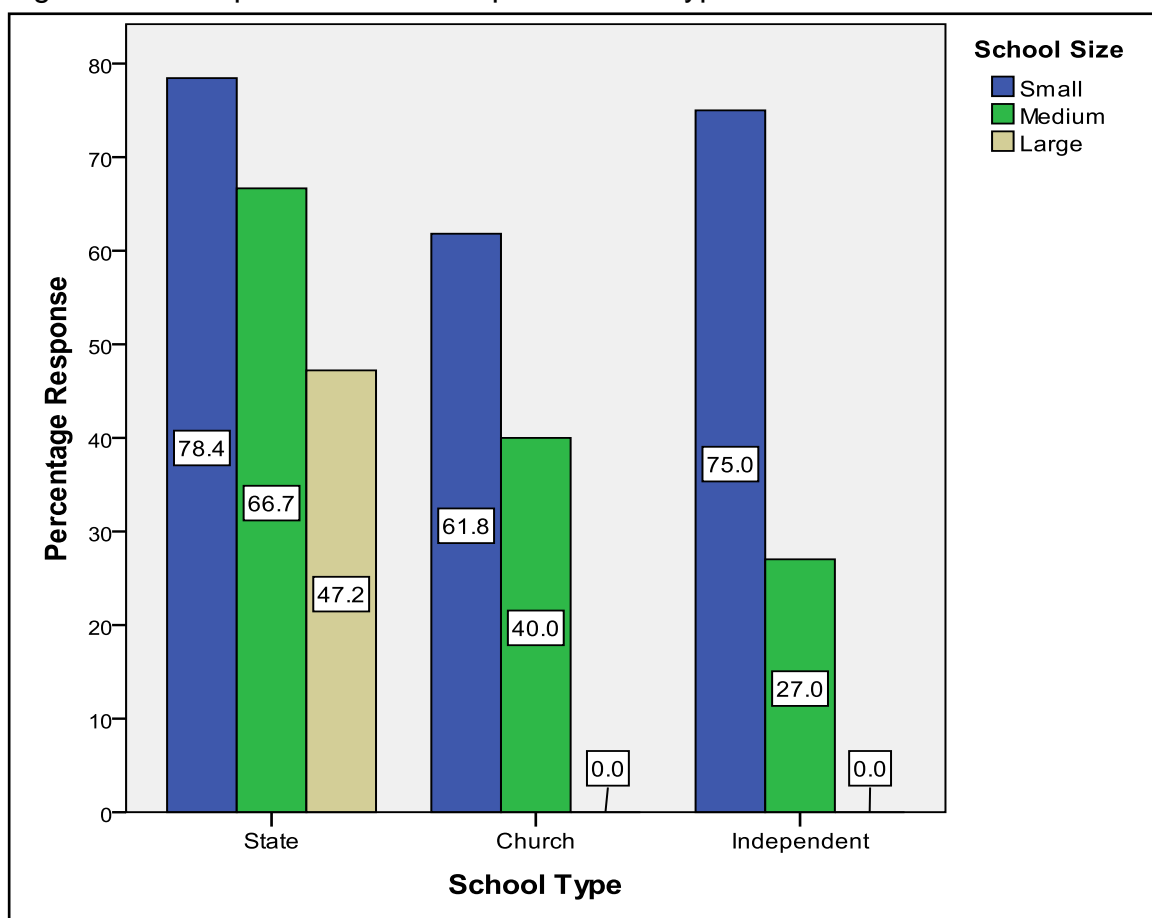
When comparing the rate of response with size and the three type of schools, a higher response from state and independent small schools is observed (Table M4). Table M5 evidences a significant difference between state-church and church-independent small schools; and between state-church and state-independent medium school.Sth Missing No statistical difference is presented between small state and small independent; schools, and between medium church and medium independent schools.

Table M5. Comparison by size and type of school

School Size	Types of School Comparisons	Z scores	p-value
Small	State-Church	3.327	0.002
Small	Church-Independent	2.000	0.046
Small	*State- Independent*	0.110	0.912
Medium	State-Church	3.713	<0.0005
Medium	*Church-Independent*	1.523	0.128
Medium	State-Independent	6.376	<0.0005

Comparing Response Rate and Geographical Zones

The rate of response was also analyzed according to geographical zones. State schools were grouped into their respective geographical zone, whilst Church and Independent school were kept as a separate category, since the intake of students is irrespective of locality (Table M6 and Figure M3 below). No statistical difference was found with regard to rate of response and geographical zone. This is as expected since, although state schools try to find placement of teachers close to their homes - one bus away -, this is not always possible. Furthermore, we are here talking about trained professionals, irrespective of where they come from and there is no issue of catchment areas or social class based on location. On the other hand, there may have been an issue of individual school- or college-based development plans and training. This was not the case. The Tukey Post Hoc Test was not carried out since percentage response did not differ significantly between different districts (p=0.412).

Table M6. Sample distribution as per geographical zone

Districts	Sample Size	Mean	SD	95% Confidence Interval for Mean		Minimum/ Maximum	
				Lower	Upper		
Southern	12	83.53	21.4	69.87	97.18	37.84	100.00
Northern	13	60.54	27.4	43.95	77.14	30.00	100.00
Western	7	68.22	29.4	40.99	95.44	25.00	100.00
South Eastern	11	72.95	26.1	55.40	90.51	28.13	100.00
Northern	7	63.23	27.2	37.99	88.47	12.50	89.47
Gozo	11	74.88	24.5	58.37	91.39	33.33	100.00
Church/Private	29	63.96	32.8	51.46	76.46	7.69	100.00

$$\left(F = 1.030,\ v_1 = 6,\ v_2 = 83,\ p = 0.412 \right)$$

Figure M3. Response rate according to geographical zone
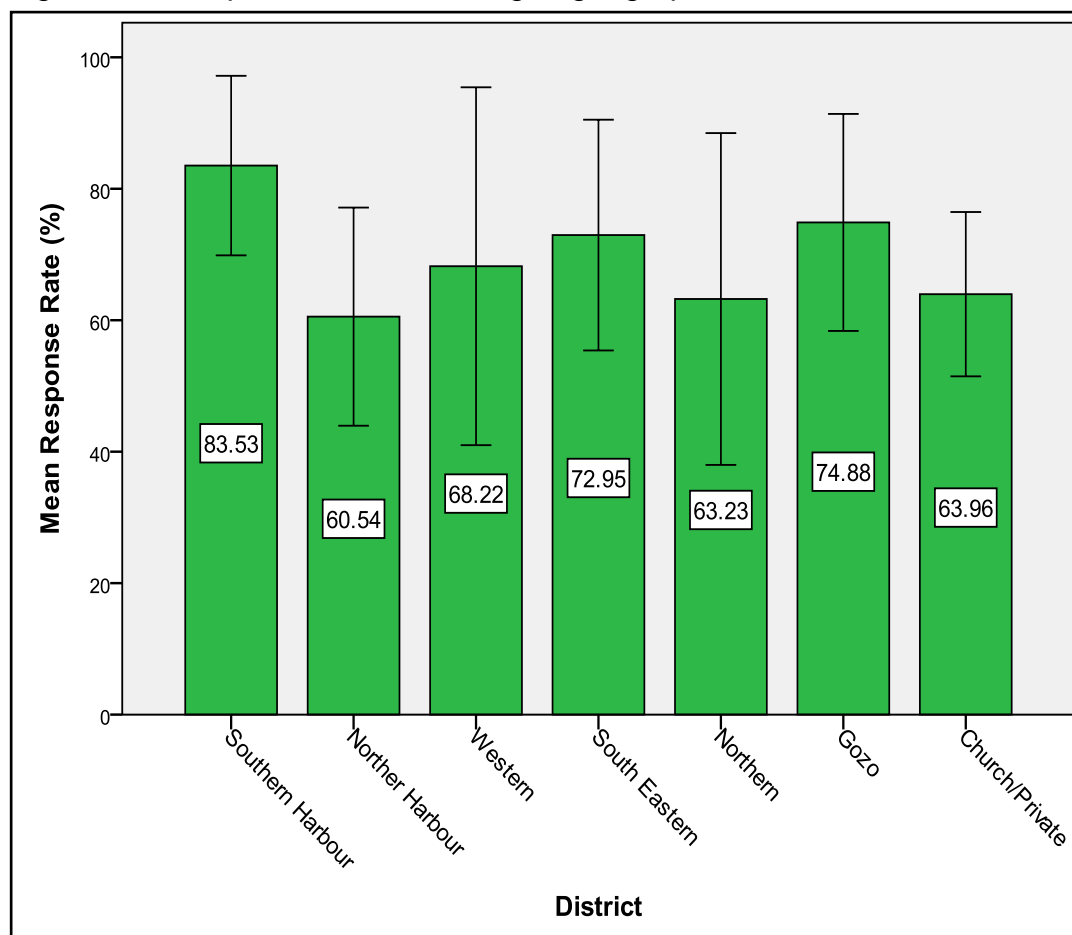
Comparing Response Rate, School Size and Geographical Zones

Table M7 and Figure M4 overleaf compare geographical zones with type of school. 100% rate of response from two small schools in the Western District, and a very high rate of response from eight small schools (91.48%) in the Southern Harbour, is observed. One medium-sized school in the Southern Harbour area (85.71%) and two medium-sized schools in the South Eastern Harbour area (88.46%) had a high rate of response when compared to other medium-sized schools. All Gozitan small schools indicated a relatively high rate of response (74.88%). Lower responses were registered by medium-sized Church/Independent schools (44.5%) Three large schools in the South Eastern District registered a 50.74% response rate. This district includes a large state school where more than half of the filled-in questionnaires had been misplaced and not replaced. Lowest response rates are from the one large school in the Western District (33.3%) and the two large schools in the Northern Harbour District (36.67%).

Table M7. Participants' response rate per size and district in descending order

District	School Size	Mean	Number of schools (n-=90)
Southern Harbour	Small	91.48	8
	Medium	85.71	1
	Large	61.59	3
Northern Harbour	Small	70.56	6
	Medium	58.08	5
	Large	36.67	2
Western	Small	100.00	2
	Medium	61.05	4
	Large	33.33	1
South Eastern	Small	78.89	6
	Medium	88.46	2
	Large	50.74	3
Northern	Small	68.73	3
	Medium	75.29	2
	Large	42.92	2
Gozo	Small	74.88	11
Church/ Independent	Small	70.15	22
	Medium	44.51	7

Figure M4. Response rate according to size of school and geographical zone

386
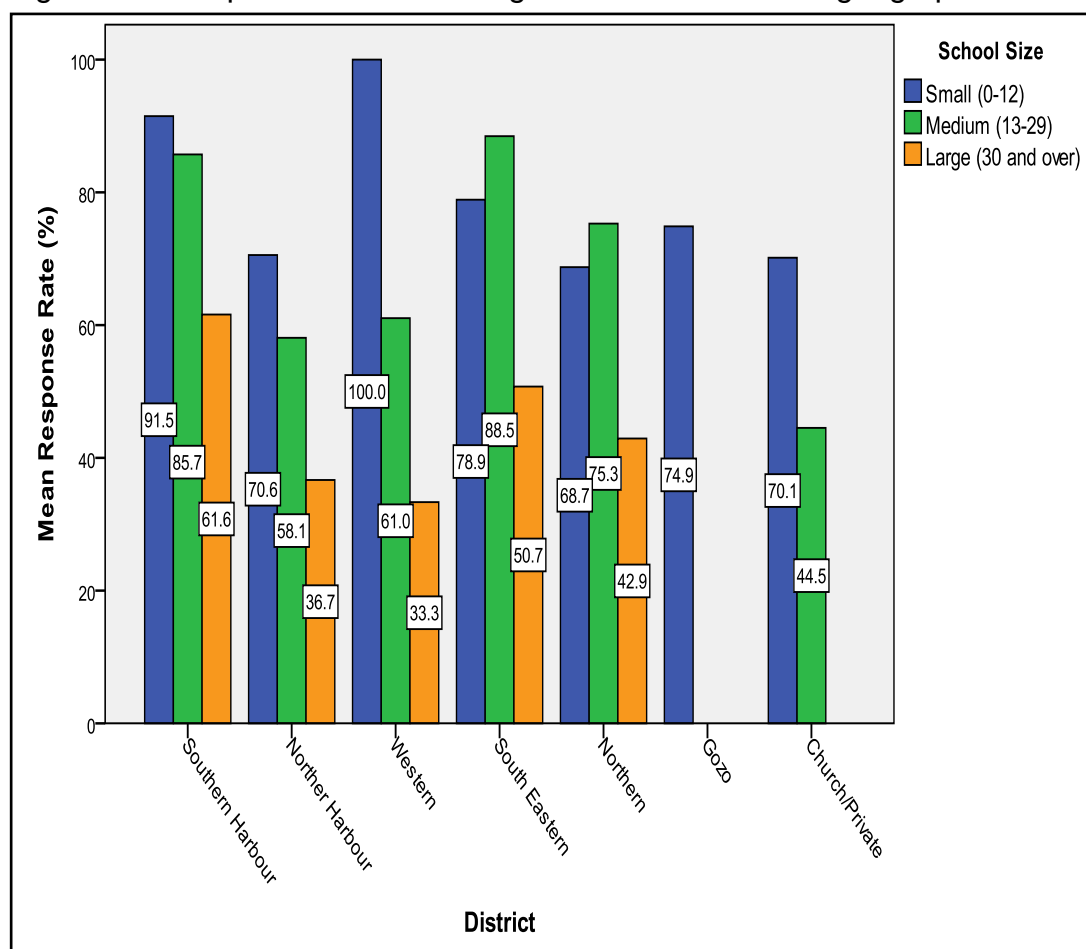
Rate of Response and Job Placement

59.14% of KGAs, 71.28% of Year 1 teachers, 60.64% of Year 2 teachers and 51.12% of LSAs answered these questionnaires. The rate of response according to job placement was also analyzed statistically (Tables M8 and M9). Hypothesis testing was carried out to determine whether the actual proportions differed significantly. The process was worked out using the Test between two proportions (http://www.dimensionresearch.com/resources/calculators/ztest.html).

Table M8. Response rate according to profession

Profession	Actual	Total	Percentage
KGAs	287	487	58.93 %
Year 1 teachers	139	195	71.28 %
Year 2 teachers	114	188	60.64 %
LSA	161	313	51.44 %
TOTAL	701	1183	59.26 %

Table M9. Job placement comparisons of response rates

Job Placement Comparison				P value
Year 1 teachers	71.28%	LSAs	51.44%	<0.0005
Year 1 teachers	71.28%	KGAs	58.93%	0.0027
KGAs	58.93%	LSAs	51.44%	0.0397
Year 2 teachers	60.64%	Year 1 teachers	71.28%	0.0272
Year 2 teachers	60.64%	LSAs	51.44%	0.0456
Year 2 teachers	60.64%	KGAs	58.93%	**0.6852**

Statistical differences were found between all population proportions except for Year 2 teachers and KGAs. Year 1 teachers (71.28%) had the highest response and LSAs (51.12%) the lowest response rate. LSAs are not specifically required to teach children how to read. In fact, the Ministry of Education specifically indicates that children with dyslexia are not to be given a statement of needs – a local legal affirmation that a child needs support in class (Verbal Communication from Service Manager Mr George Borg - December 16th, 2009). It could therefore be that once LSAs noted that the questionnaire was on literacy, they may have been disinterested and not filled it in. On the other hand, Year 1 teachers are the once most involved with teaching reading

and they had the highest rate of response, followed by Year 2 teachers. Notwithstanding, the percentage rate of LSAs is still valid.

Gender, age, training and profession.

Gender was not a determinant in this research. Given the professions involved, there were so few males in this population that it was not viable to carry out any gender comparison. Out of the 701 respondents, there were only ten male respondents - one male KGA, seven Year 1/2 teachers and two LSAs, a total of 1.43% of the population sample. On the other hand, given that training in Malta has changed over the years, age and training comparisons were carried out. Comparison among professions was also carried out.

Looking solely at the age of the respondents, one notes that the age group with most respondents was the 22-30-year old group (29.77%). These were mostly Year 1 and Year 2 teachers. The next age bracket was that of the over 50s (27.36%), followed by personnel aged between 41 and 50 years (20.15%) and 31 and 40 years (18.79%). Only 26 of the respondents were aged between 18 and 21 years (<1%). One needs to note that there would have been very few personnel aged less than 21, and certainly these were not qualified teachers since graduate teachers would be around 22 when they finish their four-year teacher training course. The breakdown of the total population sample by age was not available, and so no comparison between a possible and an actual rate of response could be made. Moreover, not all 701 respondents included their age.   The crosstab in Table M10 overleaf displays an interesting association between age and profession. There is a significant difference in the percentage numbers of each profession between the age groups.

There are higher proportions of KGAs aged between 18 and 21 years and over 40 years who chose to take part. Moreover, there are higher proportions of Year 1 and Year 2 teachers aged between 22 and 40 years who responded. Similarly, there are higher proportions of LSAs aged between 18 and 30 years who participated. These percentage differences are significant at the 0.05 level of significance.

Table M10. Comparing response rates by age and profession

Age	Count	KGA	Teachers	LSAs	TOTAL
18-21 years	Count	13	1	12	26
	%age	50.0%	3.8%	46.2%	100.0%
22-30 years	Count	41	96	61	198
	%age	20.7%	48.5%	30.8%	100.0%
31-40 years	Count	29	72	24	125
	%age	23.2%	57.6%	19.2%	100.0%
41-50 years	Count	73	30	31	134
	%age	54.5%	22.4%	23.1%	100.0%
> 50 years	Count	122	41	19	182
	%age	67.0%	22.5%	10.4%	100.0%
Count Total		278	240	147	665
Percentage Total		41.8%	36.1%	22.1%	100.0%

$$\left(\chi^2 = 138.23, \ v = 8, \ p < 0.0005 \right)$$

Table M11 indicates that there seems to be a trend that those who are qualified were more likely to answer.

Table M11. Comparing response rates by profession and training

Training		KGAs	Teachers	LSAs	Total
B.Ed. (Hons) Primary	Count	0	37	0	37
	%age	0%	100.0%	0.0%	100.0%
B.A.-PGCE	Count	5	26	1	32
	%age	15.6%	81.3%	3.1%	100.0%
MATC	Count	3	22	1	26
	%age	11.5%	84.6%	3.8%	100.0%
2-year KG course	Count	71	2	12	85
	%age	83.5%	2.4%	14.1%	100.0%
Certificate-LSA	Count	8	4	48	60
	%age	13.3%	6.7%	80.0%	100.0%
Diploma LSA	Count	4	4	59	67
	%age	6.0%	6.0%	88.1%	100.0%
Other	Count	159	47	30	236
	%age	67.4%	19.9%	12.7%	100.0%
Total Professions	Count	250	142	151	543
	%age	46.0%	26.2%	27.8%	100.0%

$$\left(\chi^2 = 500.1, \ v = 12, \ p < 0.0005 \right)$$

For example, Years 1 and 2 teachers who answered and indicated their training were more likely to have read B.Ed. (Hons) Primary, MATC, PGCE or BA-PGCE. With regard to the KGA population, again those with a two-year course or with other courses - indicating that they were likely to have started

working without formal training and then attended CPDs - were the ones who answered most. The same applies to LSAs: those who answered were mostly those who had read the Certificate or Diploma in Facilitating Inclusive Education. One may tend to conclude that the fact that one attends a training course may make one more sensitive to (a) the importance of participation in research, (b) empathizing with the researcher's need to get a good rate or response, or (c) be more committed to one's profession.

When comparing type of training and type of schools (Table M12 below & Figure M5 overleaf) one notes that there are higher proportions of professionals with B.Ed. (Hons) and with 'Other' formal qualifications working in state schools who responded. There are also higher proportions of LSAs with a Diploma working in church schools who responded. Moreover, professionals with a B.A., B.A. (Hons) PGCE , MATC and the two-year trained KGAs working in independent schools were more likely to answer. The difference in proportions is significant (p=0.004).   With regard to respondents with 'Other' forms of training, one notes that 43.5% are over 50 years, 27.8% are aged from 41 to 50 years, 16.5% are in their 30's and only 12.3% in the less than 30 years-of-age bracket.

Table M12. Comparing response rates by formal training profile and school type

Formal Training Profile		State	Church	Independe	TOTAL
B.Ed. (Hons)	Count	35	1	1	37
	%age	7.7%	1.7%	2.8%	6.8%
B.A./(Hons)/ PGCE	Count	21	5	6	32
	%age	4.6%	8.5%	16.7%	5.8%
MATC	Count	20	3	3	26
	%age	4.4%	5.1%	8.3%	4.7%
2-year KG course	Count	65	9	11	85
	%age	14.3%	15.3%	30.6%	15.5%
Certificate LSA	Count	48	11	1	60
	%age	10.6%	18.6%	2.8%	10.9%
Diploma LSA	Count	57	9	2	68
	%age	12.6%	15.3%	5.6%	12.4%
Other	Count	207	21	12	240
	%age	45.7%	35.6%	33.3%	43.8%
Total	Count	453	59	36	548
	%age	100.0%	100.0%	100.0%	100.0%

$\left(\chi^2 = 28.89, \ v = 12, \ p = 0.004 \right)$

Furthermore, 67.4% of these are KGAs, whereas 19.9% teachers are not formally qualified, and these are all over thirty and in non-state schools. This coincides with the fact that there was a time when teachers with no formal qualifications but with 15 years and over class experience were allowed to apply for a teacher's permanent warrant. This proviso was brought to an end as from 2006 (MEYE, 2007; MEYE, 2006, Article 24, p.14).

Figure M5. Comparnf response rates by formal training profile and school type
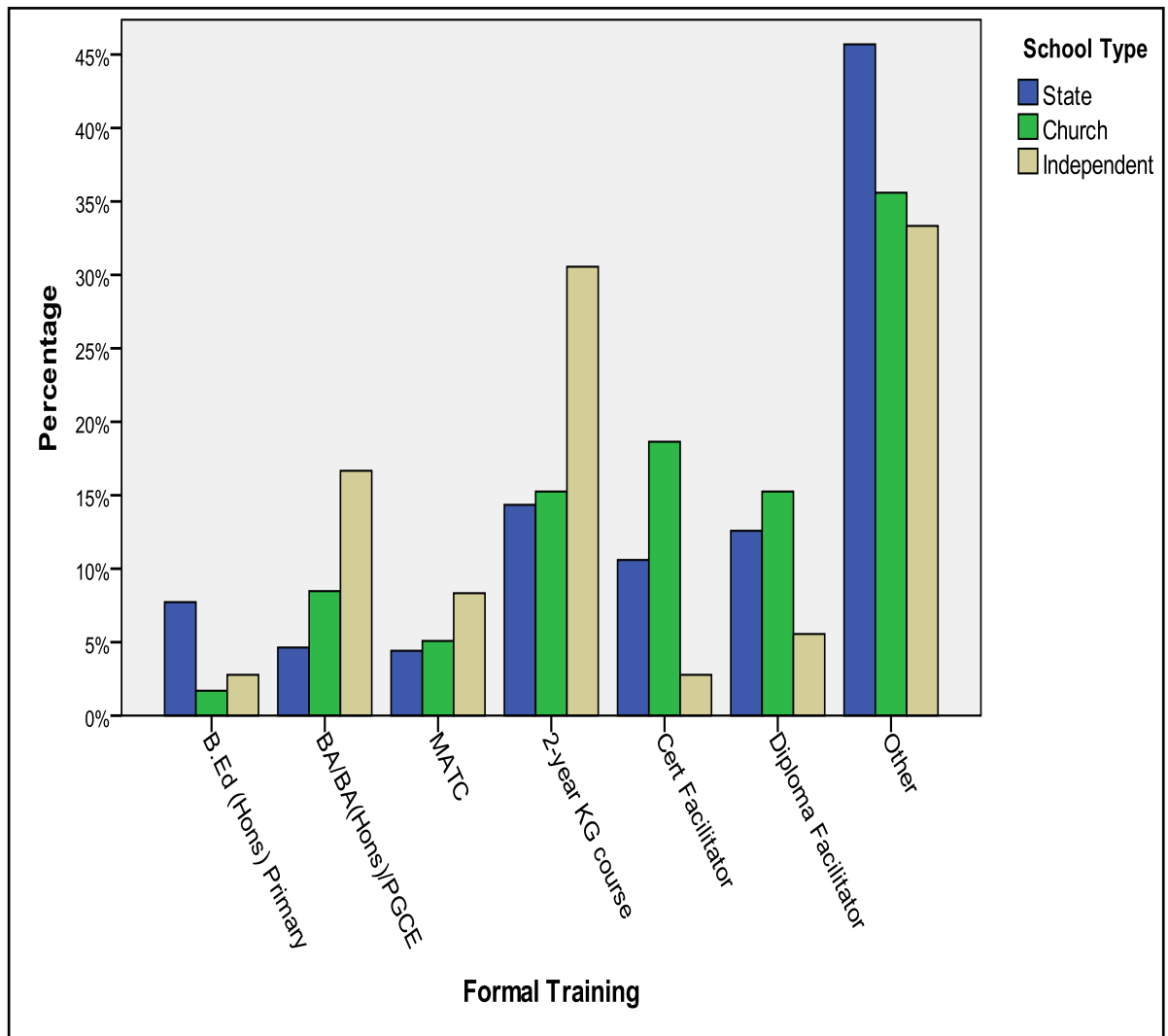
Appendix N

Sampling Distribution of the difference of two proportions $\bar{p}_1 - \bar{p}_2$

http://www.dimensionresearch.com/resources/calculators/ztest.html

Computation Formula

Sampling Distribution of the Difference of Two Proportions $\bar{\mathbf{p}}_1 - \bar{\mathbf{p}}_2$

(Freund (2001), pp. 382-384)

Let n_1 be the number of participants in the post test and n_2 be the number of participants in the delayed post test. Let X_1 be the number of participants who selected SCI in the post test and X_2 be the number of participants who selected SCI in the delayed post test. The sample proportions $\bar{p}_1$ and $\bar{p}_2$ are:

$$\bar{p}_1 = \frac{X_1}{n_1} \text{ and } \bar{p}_2 = \frac{X_2}{n_2}$$

The central limit theorem states that for large samples, the sampling distribution of $\bar{p}_1 - \bar{p}_2$ has an asymptotic Normal distribution with mean $p_1 - p_2$ and standard deviation $\sqrt{\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}}$ where p_1 and p_2 are unknown population proportions

So the random variable z has an approximate standard Normal distribution where

$$z = \frac{(\bar{p}_1 - \bar{p}_2) - (p_1 - p_2)}{\sqrt{\hat{p}(1-\hat{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \text{ where } \hat{p} = \frac{X_1 + X_2}{n_1 + n_2}$$

In order to test whether the population proportion p_1 of students selecting SCI in the post test and the population proportion p_2 of students selecting SCI in the delayed post test, specify the following hypotheses:

$$H_0 : p_1 - p_2 = 0$$
$$H_1 : p_1 - p_2 \neq 0$$

If we wish test for H_0, the random variable z becomes

$$z = \frac{\bar{p}_1 - \bar{p}_2}{\sqrt{\hat{p}(1-\hat{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \text{ since } p_1 - p_2 = 0 \text{ according to } H_0.$$

From the z score a p-value is computed using EXCEL. This is basically the area under the standard Normal distribution beyond the value of z. If the p-value exceeds the 0.05 level of significance H_0 is accepted and indicates lack of significant difference between the two population proportions. Conversely, if the p-value is less than the 0.05 level of significance H_1 is accepted and indicates significant difference between the two population proportions.

Tamara	Yes … emm … what I was saying is that at university I felt like emm … like we did not have enough practice, it's more like when you get, when you start working that you get all the practice; when you start working actually with the children cause you have hands-on experience. At university it's all theory; you get to the teaching practice, you're tense, you're stressed out and it's completely different from what you get when you're actually working with the children, that's my point of view.	Practice in ITT Theory and practice
Ruth	I assume that at university you did cover emm … study-units on reading and teaching children reading.	
Tamara	Yes we did, but again I feel that it was all theory like, you know, what people said, like we did not get the chance to practice with the children. You know to apply it with the children.	Theory/Lack of Contact with children in ITT
Ruth	So, if I were to tell you you're the minister of education and you can change the B.Ed. training course, what would you include in it?	
Tamara	More practical work definitely, definitely for sure.	Practice
Ruth	Can you give a concrete example, Tamara?	
Tamara	Rather than having six weeks of teaching practice non stop, with all that writing and all that lesson plan, all those lesson plans and stuff, I would have made it more, more practical like you'll have more hands-on with the kids.	Quality of the Teaching Practice
Tina	And maybe where theory and practice can walk hand in hand rather than first the theory and then all the practice.	Theory and practice in ITT
Tamara	Eżatt (exactly).	
Tina	I think the vowel sounds are the trickiest when it comes to saying them cleanly.	Linguistic knowledge
Ruth	The English or Maltese vowel sounds?	
Tina	Yes, the English vowel sounds - the /a/, the /e/.	
Ruth	So you feel there's no practice about the /a/, the /e/ sounds?	
Tina	Yes, like /u/, especially of umbrella.	
Tessa	What has ….I'm Tessa, what has helped us in our multisensory programme is the fact that we have the chart where each, the chart, ah the frieze … where each letter has a corresponding picture, right, and we're getting the sound from the beginning of that picture; like that I feel that we're more sure that everybody is giving out the same sound.	Techniques of using resources
Tina	By looking at the picture.	
Tamara	It's here that we learnt it.	
Toni	Makes sense as well, 'cos every school then has like a system that you need to follow. Any school has a system that you need to follow, so then you get the real practice and the exact know-how how to do it from the particular …	Whole School Approach

Tori	When I read my teacher training course we did not have any option to choose a specialization area, and therefore I did not do the inclusion specialization study units. I got a fright as well and asked them [school personnel] to teach me. But it was a real embarrassment as I had just left university – just graduated! (translated).	Lack of awareness/ Shame
Ruth	You said you had one lecture	
Tori	Yes, a lecture on Jolly Phonics; as such we had no training	
Thelma	That is a programme.	
Tamsin	No, phonics no,	
Tori	Just a basic introduction but not enough time to integrate and understand (translated).	
Tamsin	We discussed the debate of 'Look and Say' versus 'Phonics'', so it's more on academic theory.	Exposure
Thelma	We're past that...	
Tamsin	Yes. It's what we were discussing here that we needed.	
Tamsin	We ended up saying they have to go together.	
Talia	Yes, of course.	
Thelma	And that's the multisensory.	
Ruth	So, if I were to ask you, what would you recommend? Tori is recommending that assignments have to be linked with the children.	Theory and practice – assignments
Tori	Like we had done for PE study units (translated).	
Thelma	That's right!	
Tamsin	There should be more lectures, if possible, in a school environment without being assessed as well. We felt there was a lack of hands-on experience with children in the course.	ITT- Contact with children
Ruth	Do you mean that the teaching practice wasn't enough for you?	
Tobia	Exactly!	
Tamsin	You have to have somebody there mentoring you.	Mentoring
Tamsin	The only time that you have somebody in the room with you is when they're assessing you.	Assessment versus support in TP
Ruth	And you don't like that? Do you mean that you would like someone mentoring you all the time?	
Tamsin	Even the class teacher I think. It would have helped if they were in the classroom with you all the time.	Teacher mentoring
Tori	You need to experience the reality and not just vicariously from the books (translated).	Direct experience
Tamsin	That's why. I don't know whether I was well prepared. I'd have to see the result. You know, the results of my teaching at the end of the year, after having a class..	Feeling Unprepared

Thelma	When I started my first teaching job, there were two of us who had just graduated from the same course and we were both given a Year 2 class to teach. My colleague had not chosen the Inclusion Specialization area and I saw a big difference between us. When I was at university I had told them more than once that I did not feel prepared to teach Maths. I told them that there was a lack of Maths teaching in our course. On the other hand, I had been exposed to literacy, Not that I was feeling very confident, but confident enough - I thought I knew something about early literacy teaching. However, the other graduate was anxious and told me "Goodness how are we going to teach this phonics? How are we going to cope?" Given that I had had the specialization, I had to be the one to explain to her. I think the fact that during those study units we used to be sent to a lot of observations in the classrooms really helped. We did not just have lecturing at university (translated).	ITT training and multisensory techniques exposure Use of observations and modelling
Ruth	What were these study units?	
Thelma	We had structured multisensory teaching within the inclusion specialization we chose. This also included classroom and home visits	Exposure to SMSLI
Thelma	Exactly. You actually saw multisensory techniques in practice - how to plan a session, the pace and change of activities in the session, how to approach a session, even the simple fact of how to greet a child starting an intervention session. We also saw the resources and equipment, and how to organize the environment for better learning - how to sit with the children, where to sit with the children, how to present the work area. These are all important and make a difference. When you are just listening, you are listening and imagining. However, the fact that you are actually observing and seeing it happen and really understanding what and what does not work, you can then truly reflect and evaluate much better	(Translated) Observation of good practice (modelling)
Tori	I feel I learnt a lot from the Internet. I used to go on the internet site Teacher TV and used to see videoed lessons. That is how I learnt a lot - basically from Teachers Online In my first teaching experience as a graduated teacher, I took the theme of pirates and extended a pirate story building on letter sounds. Nowadays, when a child is stuck, all I need to do is remind them of the clue pictures related to the pirate story and they refer to the appropriate flashcard of the letter or digraphs sound. I only got these ideas from the internet. Personally, I do not feel that I left university prepared to address these teaching techniques – how to teach literacy. I do not know if this teaching is actually happening in the present teacher training course. To be honest, at my school we are restricted to using-ORT [Oxford Reading Tree] – not restricted as such because it is a very good series of books, but this needs to be backed up by the direct structure teaching, no?	(Translated) On-line modelling Lack of ITT training in literacy Need for Structured direct teaching

Sunta	I always try and put in animals for fun and handwriting. For many it's boring, it's tedious because it's repetitive and you need to have it as perfect as possible, but I always try and find ways to make it an enjoyable exercise - whether I'm 'Happy Mama' or whether I'm wearing my "Spectacular Spectacles". Are you following? Always, when I was doing these lessons, believe me, I'm always trying to think of new ways to reach, first of all, all the children in the class. Of what I mean is that if they are so successful with the high achievers... The high achievers are always ready to learn if it is fun and challenging, you know, but I certainly also try to help the children who are weaker.	Learning is Fun
Tika	The children were always looking forward to the lesson, because every lesson had a story, so that you read the story, then we used to, we used to act it out.	
Sunta	Visual resources, visual aids...	
Tika	It worked, you know, and before you know it they're learning it and they used it in other contexts as well...	Effectiveness of Programme
Tika	Because then, when we were doing reading – they understand the Magic-E.	
Sunta	Or the witch with the wand...	
Tika	You can make it fun. When we do the decoding, they look at it as a game, you know. They corrected them and we tell them it's not yes or no, so they're already feeling safe. It's more all the three and they… I'm telling you they look really forward to being their own learner like, their own corrector...	Learning is fun
Sunta	I feel I was really successful. I think probably I'm quite a bit chuffed because I don't know how many people do this.	Effective programme
Tika	'Cos we work together... Hand in hand, I mean, that's why.	
Ruth	So what did you find missing as teachers and what would you input in their ITT Initial Training?	Methodology
Tika	The methodology of how to go about it.	
Sunta	Yes, a lot of it, it's just a feeling, I can't explain it. How am I going to present this lesson and make it interesting.	
Tika	It's not that as well Sunta, it's the technique. Do the teachers know how to teach decoding? Do the teachers know how to say the letter sounds? We're now trained for it, but we didn't have it at university.	Teaching of Actual skills
Sunta	So to go back to … Montessori as you said. It's multisensory it's about multisensory but it covered everything, not just literacy. Now emm … from my experience emm … where literacy is concerned, the techniques were very different and the studies have shown that what we used to do Montessori wise during those days, is not feasible today. For example, we used to start with /c/ /at/ but now it is not like at all. So that is something that I had to change.	Wrong decoding system – onset and rime methodology

Appendix S
Transcript Focus Group 4 (Excerpt)

Tommie	For example, using our experiences as teachers when we were teaching, quite some time ago, before we knew about multisensory. We used to start English literacy in January, [of Year 1] as we do now. However, before, by the end of the year, the pupils could only read a limited number of words and then were expected to read fluently in Year 2 – What happens to those who can hardly read? Nowadays they can read so many more words independently. In fact, before I used to tell the parents that they should not worry as we start Year 2 English reading from scratch because they had learnt so little anyway in Year 1 - but when I was given a Year 2 class I got a shock at what I had to cover. But now they start Year 2 so much more equipped. (translated). What I mean is, as a Year 1 teacher I did not know what happened in Year 2.	Effectiveness of programme Need for continuity and handover Need for continuity and handover
Frances	Exactly. When students cannot read in secondary schools - and they could be intelligent students - I get really concerned. Then, as soon as you start them off on structure multisensory techniques they understand the system and feel that it's a like a miracle and they tell me: Why did nobody ever tell me these things? I learnt these teaching techniques during a seminar I did on Dyslexia outside my formal training. (translated).	Effectiveness of programme
Tabatha	In the B.Ed. they need to start from scratch – what is decoding, what is phonological awareness, emm ... the games and exercises teachers can use to build these skills and so on. When I was a teacher trainee and read Early and Middle Years as an area of specialization, our English tutor just took a book of theory and that is all we covered. We did not address how to actually teach literacy, how to actually present methods of creative writing in the classroom. We were never thought these things. I thought I had learnt a lot of things during my teacher training, but then when I came to teach in this school as a graduate, I found that I had to deal with the textbooks that university had criticized, and the school was telling me that these were the schemes we had to use. That did not do me much good! A lot of us have this experience of our teaching training. I am not quite sure what is happening nowadays. (translated).	Need for technique teaching and not just theory Dichotomy between UoM and School
Frances	I saw this rigidity in the university tutors themselves who came to observe and examine our teaching practices. They observe you teaching a method they have no idea about, as we could see in the comments they wrote in our evaluation booklets. They did not have an idea why we were doing certain things. I am not the only one who felt like this. A number of fellow teacher trainees commented, once they started teaching full-time, that university tutors did not understand why we were using multisensory techniques with the students. (translated).	Techniques of teacher trainers (TP Tutors)

Petra	It could be that both systems work as my older one can now read independently, but when she was younger she needed someone near her to support her and would not read before I sat near her. On the other hand, I simply read with the younger one for fun as she can do it on her own even at such a young age. I think that when in Year 1, with the new system, the children learn much more in both English and Maltese.	Effectivenes of Programme
Pawla	Even though my older one was reading even when young, she never told me what they did in class with regard to phonics, because probably they did not do this. My younger one will come home and explain stories of the /i/ or the /e/ sound and indicate that she has really learnt it.	
Petra	She explained a rule by telling a story. This helped her learn the Maltese /ie/ sound.	
Petra	I can see that teachers are nowadays teaching them differently.	Accepted change
Pawla	But not every school, we had it in our school because there had been a training project.	Need for a policy
Petra	But is it not possible to do this in every school – whether they like it or not? I am not involved in teacher training, but I am trying to see what they basically know. From the results I am seeing that I can actually make recommendations to the university. I think that, in the first place, the university needs to understand and know who teachers should be teaching	Need for a policy Teacher training - feelings
Pawla	Of course, so the student-teachers can then teach properly!	
Petra	I see a big difference between my two children...	Multisensory difference
Petra	And, moreover, it is more fun how my younger one is being taught!	Learning is Fun
Pawla	They enjoyed learning phonics. It was fun. They enjoyed it.	
Pawla	In fact I have heard this from other parents. They are finding that their present Year 1 children are having an easier time learning how to read.	Effectiveness of Programme
Petra	Yes, that's it. I did not have any difficulties.	
Pawla	Yes, I can now say that parents in our school are seeing the usefulness of the phonics taught properly, but in other schools, parents are still having difficulty.	
Pawla	Because in our schools they are doing phonics in a different way and it makes sense.	Phonics versus multisensory
Petra	But ironically both are still being called phonics!	
Pawla	That's it…	
Petra	All schools should adopt the system that is used in our children's school.	

Below are two sample e-mail correspondences from two Focus Group participants who read the findings and analysis chapter (Chapter 6).

_____

SAMPLE 1 of 2 (Included with Ms Bajada's permission)

_____

From: Ruth Falzon <ruth.falzon@um.edu.mt>
Date: Thu, Dec 8, 2011 at 7:37 AM
Subject: Fwd: query
To: Georgette Bajada <georgette.bajada@gmail.com>

Dear Georgette
I am finally putting together the focus groups findings that we had done last year. Can you read to see if in my analysis I was faithful to your voice. You may also show them to the others of your focus group.

Would appreciate feedback.

Ruth

_____

On 17/01/2012 14:14, Georgette Bajada wrote:

Hi Ruth...
first of all i hope u r in good health....
sorry for taking so long to answer... but...it totally slipped my mind....
i have forwarded email to all others and they should be getting back to me or you....
i have read discussions and, yes, arguments do make sense and are realistic....(especially what Frances says))
please contact me should i be of any further help...tc
georgette

_____

From: Ruth Falzon <ruth.falzon@um.edu.mt>
Date: Wed, Jan 18, 2012 at 10:04 AM
Subject: Fwd: query
To: Georgette Bajada <georgette.bajada@gmail.com>

Dear Georgette
Thank you so much for your feedback.
Much appreciated
regards
ruth

SAMPLE 2 of 2 (Included with Ms Gatt's permission)

_____

On 19/01/2012 08:09, Elena Gatt wrote:

Dear Ruth,

Hope all is well at your end! Just found forwarded email from georgette re: focus groups we did. (So you might be quite busy at the moment). Will have a look at your work this afternoon after work. Good Day!

Elena

_____

On 23/01/2012 20:01, Elena Gatt wrote:

Dear ruth,

just to let you know that i agree with your findings. Good luck.

Regards, Elena.

_____

On Tue, Jan 24, 2012 at 8:33 AM, Ruth Falzon <ruth.falzon@um.edu.mt> wrote:

Great Elena

Thank you so much. Would it be possible to use your correspondence as an appendix in my PhD research? Will remove your name of course, unless you want otherwise. You may want to write it more formally or leave it as is. Please advise. regards

ruth

_____

On 24/01/2012 16:13, Elena Gatt wrote:

Dear Ruth,

Yes, of course, you can use my correspondence. No problem at all. Leave it as is. Thanks, Elena

_____

On Wed, Jan 25, 2012 at 2:44 PM, Ruth Falzon <ruth.falzon@um.edu.mt> wrote:

El

Sorry to be picky. Do I remove/change your name?

Regards ruth

_____

On 26/01/2012 07:34, Elena Gatt wrote:

Oh. I'm sorry ... no i don't mind if you leave it. sorry for the hassle ... too much work, less concentration.

regards

elena

Table V1. Number of aspects of reading areas covered during formal training

Formal training -14 Areas	Respondents	Percent
0	162	23.1
1	122	17.4
2	103	14.7
3	77	11.0
4	57	8.1
5	44	6.3
6	54	7.7
7	33	4.7
8	19	2.7
9	10	1.4
10	13	1.9
11	0	0.0
12	3	0.4
13	2	0.3
14	2	0.3
Total	701	100.0

Table V2. Literacy aspects addressed during FT compared with FT profiles

Formal Training Profile	Response	0-1	2-3	4-7	8-14	TOTAL
B.Ed. (Hons) Primary	Count	5	5	19	8	37
	%age	13.5%	13.5%	51.4%	21.6%	100.0
B.A.-PGCE	Count	13	8	8	3	32
	%age	40.6%	25.0%	25.0%	9.4%	100.0
MATC	Count	11	12	3	0	26
	%age	42.3%	46.2%	11.5%	.0%	100.0
KG-course	Count	39	32	13	1	85
	%age	45.9%	37.6%	15.3%	1.2%	100.0
Certificate LSA	Count	21	19	18	2	60
	%age	35.0%	31.7%	30.0%	3.3%	100.0
Diploma LSA	Count	7	11	37	13	68
	%age	10.3%	16.2%	54.4%	19.1%	100.0
Other	Count	129	69	35	7	240
	%age	53.8%	28.8%	14.6%	2.9%	100.0
Total	Count	225	156	133	34	548
	%age	41.1%	28.5%	24.3%	6.2%	100.0

$\chi^2 = 139.52,\ v = 12,\ p < 0.0005$

Figure V1. Literacy aspects covered during FT as compared with FT profile
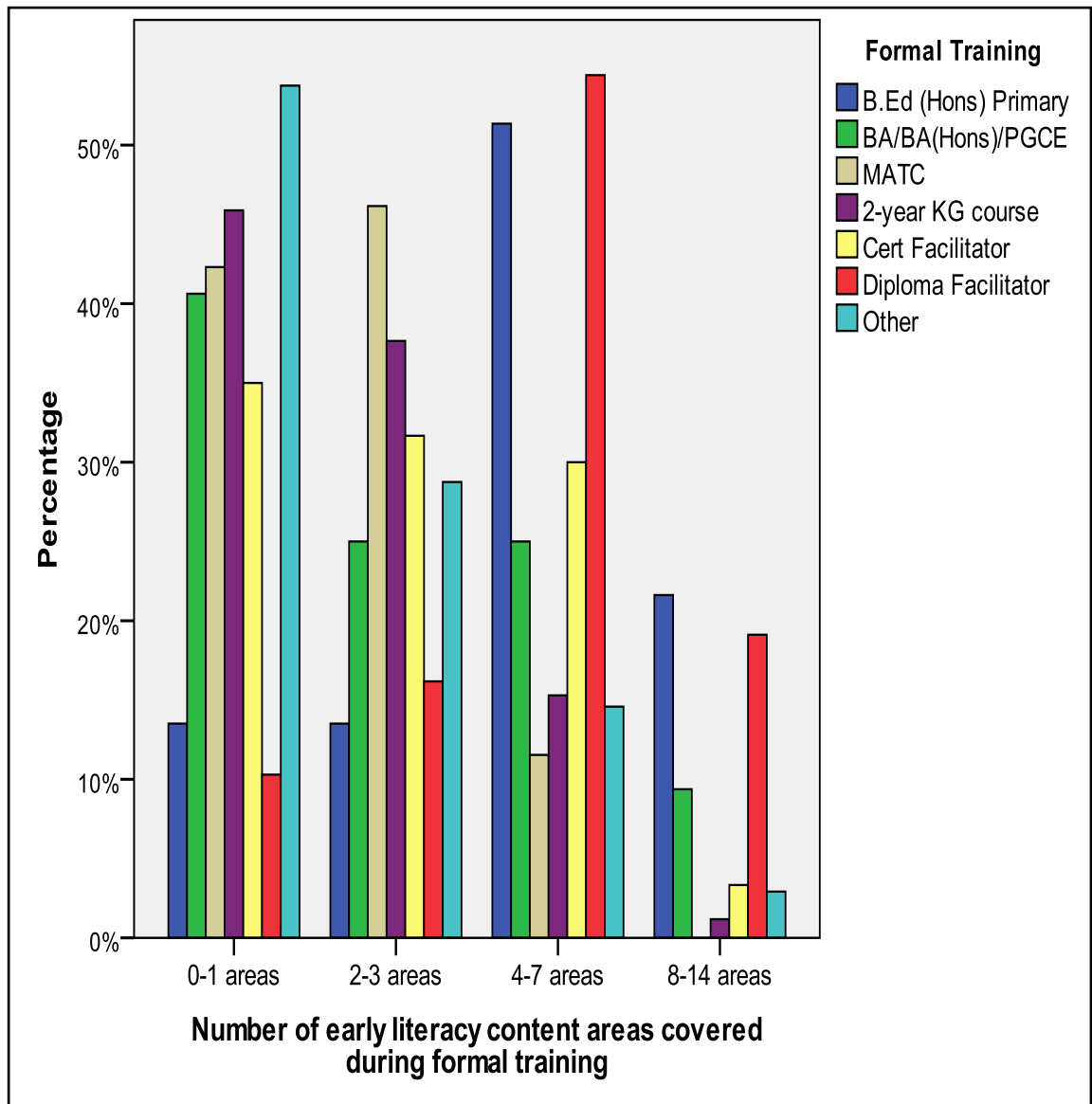
$$\chi^2 = 139.52, \ v = 18, \ p < 0.0005$$

Table V3. Aspects of literacy topics covered during FT compared to FT profiles

Aspects of literacy early training		B.Ed. (Hons) Primary	BA - PGCE	MATC	2-year KG course	Cert. LSA	Dipl.- LSA	Other	TOTAL
Reading Theories	Count	15	2	0	6	5	5	8	41
	%age	**40.5%**	8.7%	0.0%	9.5%	9.3%	7.6%	5.0%	
Top-down	Count	5	0	0	1	1	9	8	24
	%age	**13.5%**	0.0%	0.0%	1.6%	1.9%	**13.6%**	5.0%	
Bottom-Up	Count	4	0	0	2	3	14	6	29
	%age	10.8%	0.0%	0.0%	3.2%	5.6%	**21.2%**	3.8%	
Interactionist	Count	6	0	0	2	1	7	7	23
	%age	**16.2%**	0.0%	0.0%	3.2%	1.9%	**10.6%**	4.4%	
Interconnec-tionist	Count	3	0	0	2	2	8	2	17
	%age	8.1%	0.0%	0.0%	3.2%	3.7%	**12.1%**	1.3%	
NMC	Count	24	11	1	15	5	27	43	126
	%age	**64.9%**	47.8%	4.8%	23.8%	9.3%	**40.9%**	27.0%	
Multisensory Approaches	Count	19	11	4	33	34	52	70	223
	%age	51.4%	47.8%	19.0%	52.4%	**63.0%**	**78.8%**	44.0%	
Reading Difficulties	Count	25	11	6	12	20	49	46	169
	%age	**67.6%**	47.8%	28.6%	19.0%	37.0%	**74.2%**	28.9%	
Learning Support	Count	23	8	6	30	40	57	60	224
	%age	**62.2%**	34.8%	28.6%	47.6%	**74.1%**	**86.4%**	37.7%	
Phonics	Count	11	4	1	14	11	16	32	89
	%age	**29.7%**	17.4%	4.8%	22.2%	20.4%	24.2%	20.1%	
Whole Word	Count	20	12	14	10	15	36	53	160
	%age	54.1%	52.2%	**66.7%**	15.9%	27.8%	54.5%	33.3%	
Language Experience	Count	6	10	4	10	7	13	31	81
	%age	16.2%	**43.5%**	19.0%	15.9%	13.0%	19.7%	19.5%	
Paired Reading	Count	23	8	8	4	16	33	42	134
	%age	**62.2%**	34.8%	38.1%	6.3%	29.6%	**50.0%**	26.4%	
Strategies for Reading	Count	21	11	8	21	17	36	46	160
	%age	**56.8%**	47.8%	38.1%	33.3%	31.5%	**54.5%**	28.9%	
Total	Count	37	23	21	63	54	66	159	423

Table V4. Perception of effectiveness of FT compared across age groups

Comparison by Age		Disagree	Unsure	Agree	Total
18-21 years	Count	2	2	17	21
	Percentage	9.5%	9.5%	**81.0%**	100.0%
22-30 years	Count	30	55	103	188
	Percentage	16.0%	29.3%	54.8%	100.0%
31-40 years	Count	31	25	53	109
	Percentage	28.4%	22.9%	48.6%	100.0%
41-50 years	Count	21	33	65	119
	Percentage	17.6%	27.7%	54.6%	100.0%
> 50 years	Count	34	33	70	137
	Percentage	24.8%	24.1%	51.1%	100.0%
Total	Count	118	148	308	574
	Percentage	20.6%	25.8%	53.7%	100.0%

$\chi^2 = 15.54, \ v = 8, \ p = 0.049$

Table V5. Perception of effectiveness of FT compared across professions

Profession	Response	Disagree	Unsure	Agree	Total
KGAs	Count	50	51	112	213
	%age	23.5%	23.9%	52.6%	100.0%
Teachers	Count	54	59	119	232
	%age	23.3%	25.4%	51.3%	100.0%
LSAs	Count	18	44	83	145
	%age	12.4%	30.3%	57.2%	100.0%
Total	Count	122	154	314	590
	%age	20.7%	26.1%	53.2%	100.0%

$\chi^2 = 8.391, \ v = 4, \ p = 0.078$

Figure V2. Perception of effectiveness of FT compared across professions
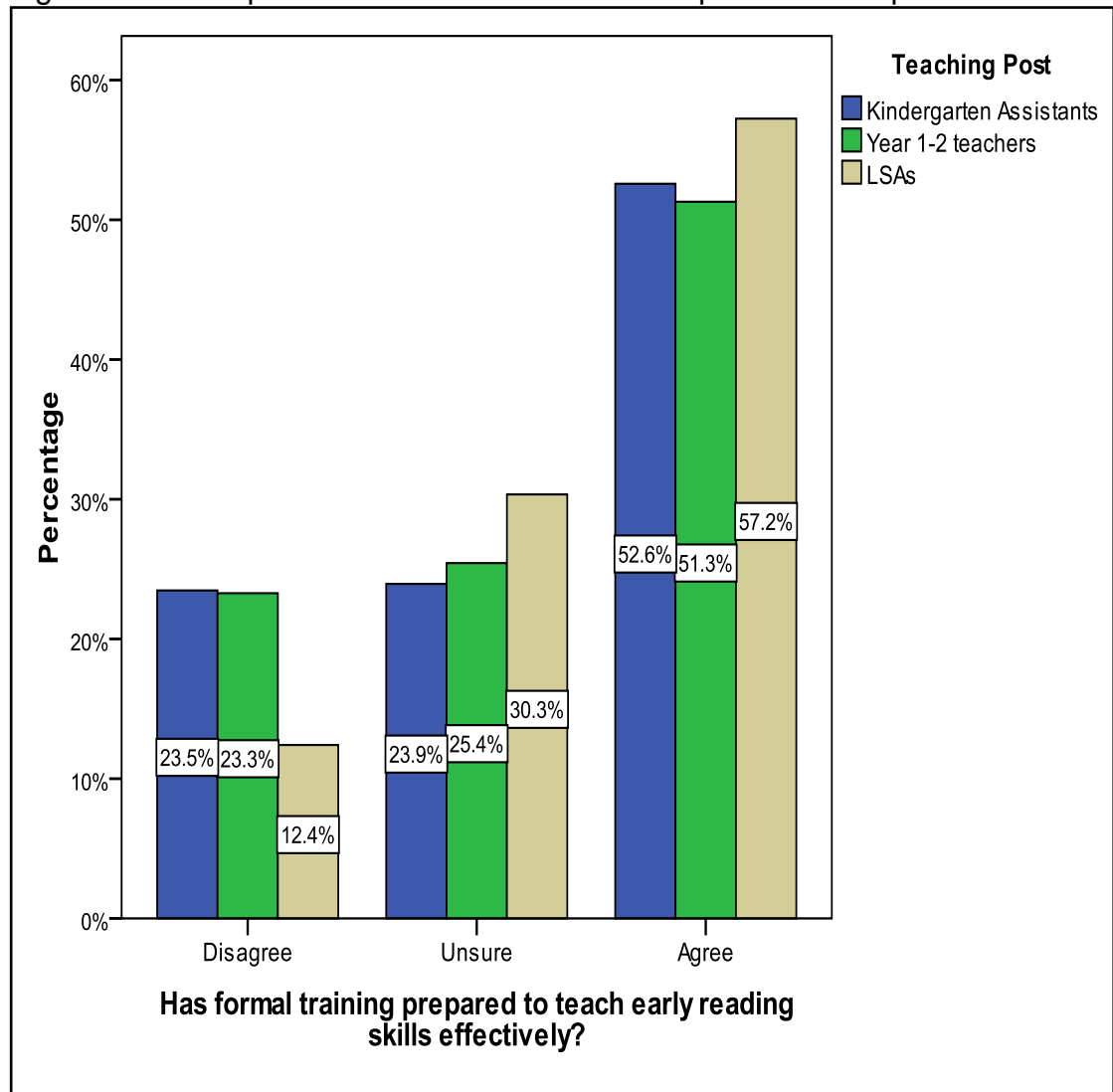
$\chi^2 = 8.391, \ v = 4, \ p = 0.078$

Table V6. Perception of effectiveness of FT compared to FT Profiles

FT	Response	Disagree	Unsure	Agree	TOTAL
B.Ed. (Hons) Primary	Count	8	6	23	37
	%age	21.6%	16.2%	**62.2%**	100.0%
BA/BA(Hons)/ PGCE	Count	7	8	12	27
	%age	25.9%	29.6%	44.4%	100.0%
MATC	Count	3	5	14	22
	%age	13.6%	22.7%	**63.6%**	100.0%
2-year KG course	Count	10	10	57	77
	%age	13.0%	13.0%	**74.0%**	100.0%
Certificate Facilitator	Count	9	22	28	59
	%age	15.3%	37.3%	47.5%	100.0%
Diploma-LSA	Count	2	18	45	65
	%age	3.1%	27.7%	**69.2%**	100.0%
Other	Count	55	50	83	188
	%age	29.3%	26.6%	44.1%	100.0%
Total	Count	94	119	262	475
	%age	19.8%	25.1%	55.2%	100.0%

$\chi^2 = 44.13, \ v = 12, \ p < 0.0005$

Table V7. Preparation areas compared with perceived effectiveness of FT

Number	Response	Disagree	Unsure	Agree	TOTAL
0 Areas	Count	21	18	26	65
	%age	32.3%	27.7%	40.0%	100.0%
1 Area	Count	37	40	47	124
	%age	29.8%	32.3%	37.9%	100.0%
2 Areas	Count	27	21	39	87
	%age	31.0%	24.1%	44.8%	100.0%
3 Areas	Count	14	18	55	87
	%age	16.1%	20.7%	63.2%	100.0%
4 Areas	Count	4	18	32	54
	%age	7.4%	33.3%	59.3%	100.0%
5 Areas	Count	4	13	25	42
	%age	9.5%	31.0%	59.5%	100.0%
6 Areas	Count	6	14	36	56
	%age	10.7%	25.0%	64.3%	100.0%
7 Areas	Count	4	8	19	31
	%age	12.9%	25.8%	61.3%	100.0%
8 – 14 Areas	Count	5	7	38	50
	%age	10.0%	14.0%	76.0%	100.0%

($\chi^2 = 53.239, \ v = 16, \ p < 0.0005$).

Figure V3. Preparation areas ticked compared with perception of FT effectiveness
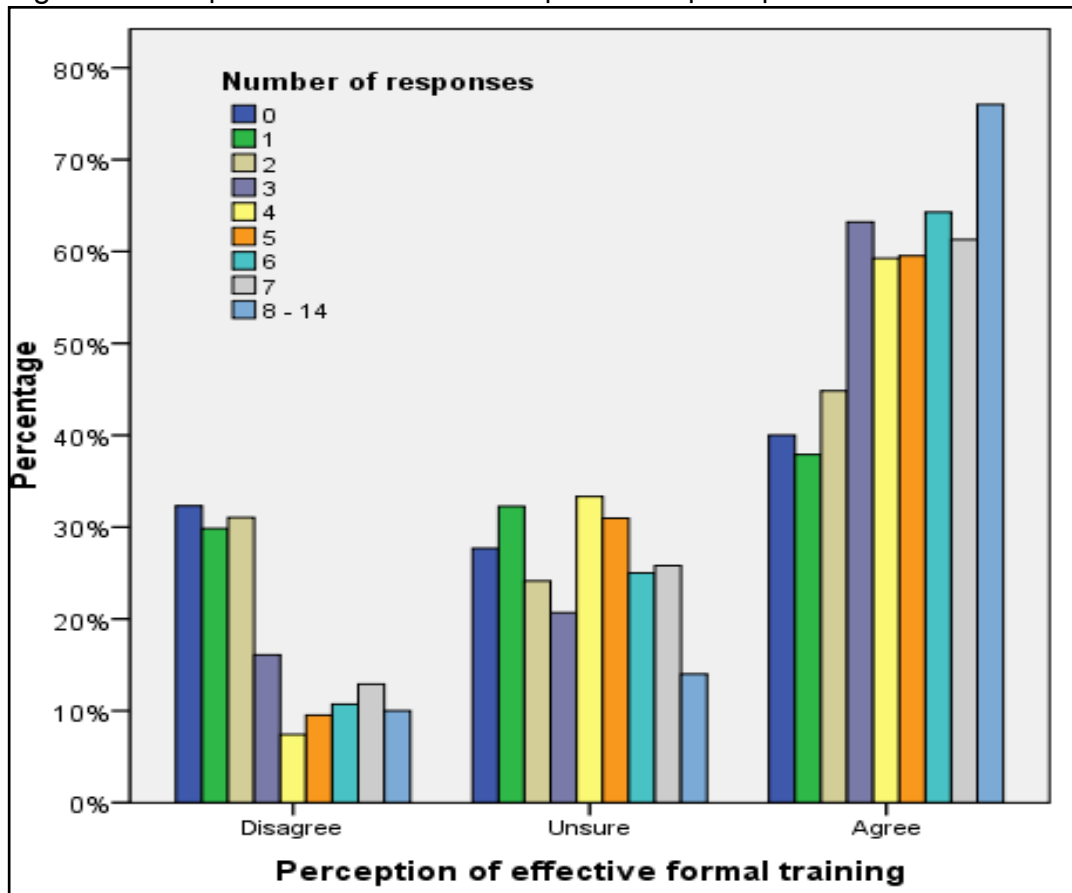
$(\chi^2 = 53.239, \ v = 16, \ p < 0.0005)$

Figure V4. Preparation areas, FT effectiveness compared across FT profiles
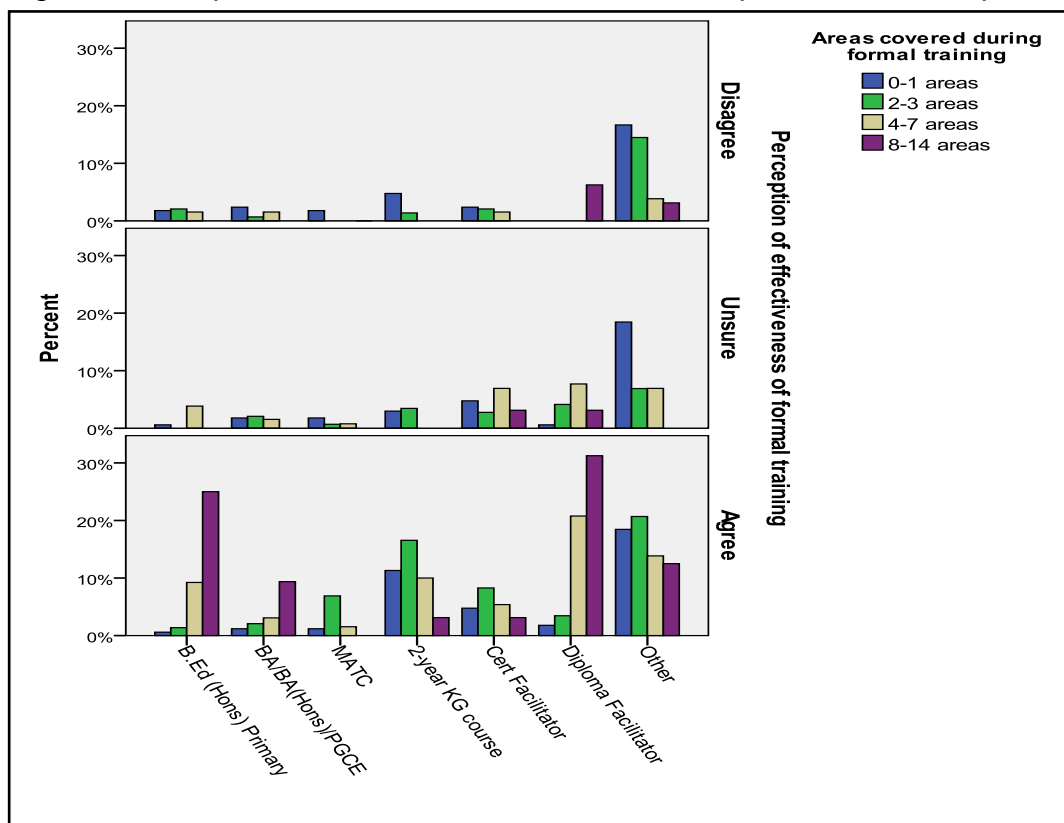
Figure V5. Preparation areas, FT effectiveness compared across age groups
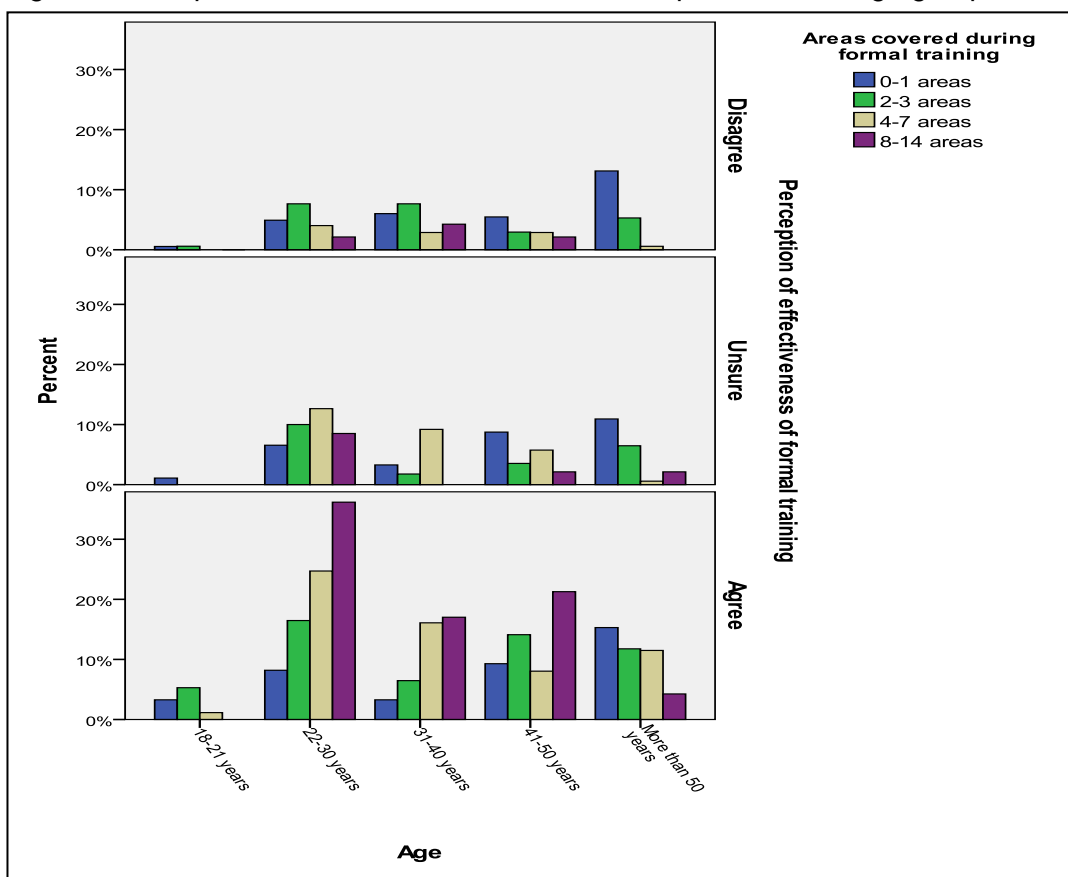
Table V8. Professionals' perception of preparation to teach phonological awareness

Phonological awareness		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	44	34.4%	44	34.4%	40	31.3%	128
Teachers	Count/%age	16	7.2%	50	22.6%	155	70.1%	221
LSAs	Count/%age	28	23.5%	42	35.3%	49	41.2%	119
Total	Count/%age	88	18.8%	136	29.1%	244	52.1%	468

$\chi 2 = 66.81; v = 4; p < 0.0005$

Table V9. Professionals' perception of preparation to teach phonemic skills:

Phonemic awareness		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	45	35.7%	42	33.3%	39	31.0%	126
Teachers	Count/%age	15	7.0%	53	24.8%	146	68.2%	214
LSAs	Count/%age	29	25.0%	51	44.0%	36	31.0%	116
Total	Count/%age	89	19.5%	146	32.0%	221	48.5%	456

$\chi 2 = 77.12; v = 4; p < 0.0005$

Table V10. Professionals' perception of preparation to teach phonic skills

Phonic skills		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	35	22.6%	47	30.3%	73	47.1%	155
Teachers	Count/%age	15	6.5%	28	12.1%	188	81.4%	231
LSAs	Count/%age	15	12.2%	41	33.3%	67	54.5%	123
Total	Count/%age	65	12.8%	116	22.8%	328	64.4%	509

$\chi 2 = 59.66; v = 4; p < 0.0005$

Table V11. Professionals' perception of preparation to teach decoding skills

Decoding skills		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	49	45.8%	43	40.2%	15	14.0%	107
Teachers	Count/%age	18	8.0%	43	19.1%	164	72.9%	225
LSAs	Count/%age	30	25.9%	47	40.5%	39	33.6%	116
Total	Count/%age	97	21.7%	133	29.7%	218	48.7%	447

$\chi 2 = 125.08; v = 4; p < 0.0005$

Table V12. Professionals' perception of preparation to teach onset and rime

Onset and rime		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	42	34.1%	45	36.6%	36	29.3%	123
Teachers	Count/%age	18	8.3%	84	38.7%	115	53.0%	217
LSAs	Count/%age	28	25.7%	47	43.1%	34	31.2%	109
Total	Count/%age	88	19.6%	176	39.2%	185	41.2%	449

$\chi 2 = 44.37; v = 4; p < 0.0005$

Table V13. Professionals' perception of preparation to teach syllabication skills

Syllabication Skills		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	37	33.9%	34	31.2%	38	34.9%	109
Teachers	Count/%age	17	7.8%	44	20.3%	156	71.9%	217
LSAs	Count/%age	20	16.4%	31	25.4%	71	58.2%	122
Total	Count/%age	74	16.5%	109	24.3%	265	59.2%	448

$\chi 2 = 50.43; v = 4; p < 0.0005$

Table V14. Professionals' perception of preparation to teach Whole Word Approach

Whole Word Approach		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	23	16.9%	17	12.5%	96	70.6%	136
Teachers	Count/%age	2	0.9%	20	8.7%	208	90.4%	230
LSAs	Count/%age	8	6.3%	21	16.4%	99	77.3%	128
Total	Count/%age	33	6.7%	58	11.7%	403	81.6%	494

$\chi 2 = 41.74; v = 4; p < 0.0005$

Table V15. Professionals' perception of preparation to address rule learning

Rule Learning		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	37	36.6%	40	39.6%	24	23.8%	101
Teachers	Count/%age	35	18.1%	84	43.5%	74	38.3%	193
LSAs	Count/%age	21	19.1%	56	50.9%	33	30.0%	110
Total	Count/%age	93	23.0%	180	44.6%	131	32.4%	404

$\chi 2 = 17.09; v = 4; p = 0.002$

Table V16. Professionals' perception of preparation to use paired reading

Paired reading		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	33	31.7%	52	50.0%	19	18.3%	104
Teachers	Count/%age	11	5.0%	63	28.8%	145	66.2%	210
LSAs	Count/%age	19	16.0%	36	30.3%	64	53.8%	119
Total	Count/%age	63	14.3%	151	34.2%	228	51.6%	442

$\chi 2 = 77.23; v = 4; p < 0.0005$

Table V17. Professionals' perception of preparation to use LEA

LEA		Disagree		Unsure		Agree		Total (100%)
KGAs	Count/%age	33	25.6%	36	27.9%	60	46.5%	129
Teachers	Count/%age	24	11.8%	84	41.2%	96	47.1%	204
LSAs	Count/%age	25	22.5%	48	43.2%	38	34.2%	111
Total	Count/%age	82	18.5%	168	37.8%	194	43.7%	444

$\chi 2 = 17.34; v = 4; p = 0.002$

Table V18. Perception of preparation to teaching early literacy skills

Area of Literacy	KGAs	Teachers	LSAs	p-value
Whole Word Approach	70.6%	90.4%	77.3%	<0.000
Phonic Skills	47.1%	81.4%	54.5%	<0.000
Phonological Awareness	31.3%	70.1%	41.2%	<0.000
Phonemic Awareness	31.0%	68.2%	31.0%	<0.000
Decoding Skills	14.0%	72.9%	33.6%	<0.000
Onset and Rime	29.3%	53.0%	31.2%	<0.000
Syllabication skills	34.9%	71.9%	58.2%	<0.000
Paired reading	18.3%	66.2%	53.8%	<0.000
Language Experience	46.5%	47.1%	34.2%	0.002
Rule Learning	23.8%	38.3%	30.0%	0.002

Table V19. Mean score perception of preparation per areas of literacy skills

Perception of Preparation	Teaching Post	Mean	Std. Deviation
Phonological awareness	KGAs	1.97	0.813
	Teachers	**2.63**	0.616
	LSAs	2.18	0.788
	Total	2.33	0.774
Phonemic skills	KGAs	1.95	0.818
	Teachers	**2.61**	0.616
	LSAs	2.06	0.749
	Total	2.29	0.773
Phonic skills	KGAs	2.25	0.801
	Teachers	**2.75**	0.565
	LSAs	2.42	0.701
	Total	2.52	0.711
Decoding skills	KGAs	1.68	0.708
	Teachers	**2.65**	0.624
	LSAs	2.08	0.771
	Total	2.27	0.795
Onset and rime	KGAs	1.95	0.798
	Teachers	**2.45**	0.644
	LSAs	2.06	0.756
	Total	2.22	0.750
Syllabication skills	KGAs	2.01	0.833
	Teachers	**2.64**	0.623
	LSAs	2.42	0.759
	Total	2.43	0.759
Whole word approach	KGAs	2.54	0.769
	Teachers	**2.90**	0.334
	LSAs	2.71	0.577
	Total	2.75	0.568
Rule learning	KGAs	1.87	0.770
	Teachers	**2.20**	0.726
	LSAs	2.11	0.695
	Total	2.09	0.740
Paired reading	KGAs	1.87	0.698
	Teachers	**2.61**	0.583
	LSAs	2.38	0.748
	Total	2.37	0.721
Language experience approach	KGAs	2.21	0.826
	Teachers	**2.35**	0.683
	LSAs	2.12	0.748
	Total	2.25	0.748

Table V20. Differences in professionals' perception of preparation

Perception of Preparation	Teaching Post		Difference	P-value
Phonological Awareness	KGAs	Teachers	0.660	<0.0005
	KGAs	LSAs	0.208	*0.0620*
	Teachers	LSAs	0.452	<0.0005
Phonemic Skills	KGAs	Teachers	0.660	<0.0005
	KGAs	LSAs	0.108	*0.4660*
	Teachers	LSAs	0.552	<0.0005
Phonic Skills	KGAs	Teachers	0.504	<0.0005
	KGAs	LSAs	0.178	*0.0770*
	Teachers	LSAs	0.326	<0.0005
Decoding Skills	KGAs	Teachers	0.967	<0.0005
	KGAs	LSAs	0.395	<0.0005
	Teachers	LSAs	0.571	<0.0005
Onset and Rime	KGAs	Teachers	0.496	<0.0005
	KGAs	LSAs	0.104	*0.5140*
	Teachers	LSAs	0.392	<0.0005
Syllabication	KGAs	Teachers	0.631	<0.0005
	KGAs	LSAs	0.409	<0.0005
	Teachers	LSAs	0.223	0.0170
Whole Word Approach	KGAs	Teachers	0.359	<0.0005
	KGAs	LSAs	0.174	0.0270
	Teachers	LSAs	0.185	0.0070
Rule Learning	KGAs	Teachers	0.331	0.0010
	KGAs	LSAs	0.238	0.0480
	Teachers	LSAs	0.093	*0.5350*
Paired Reading	KGAs	Teachers	0.746	<0.0005
	KGAs	LSAs	0.513	<0.0005
	Teachers	LSAs	0.234	0.0050
Language Experience	KGAs	Teachers	0.144	*0.1990*
	KGAs	LSAs	0.092	*0.6040*
	Teachers	LSAs	0.236	0.0200

Figure V6. Differences in professionals' perceptions of adequate preparation
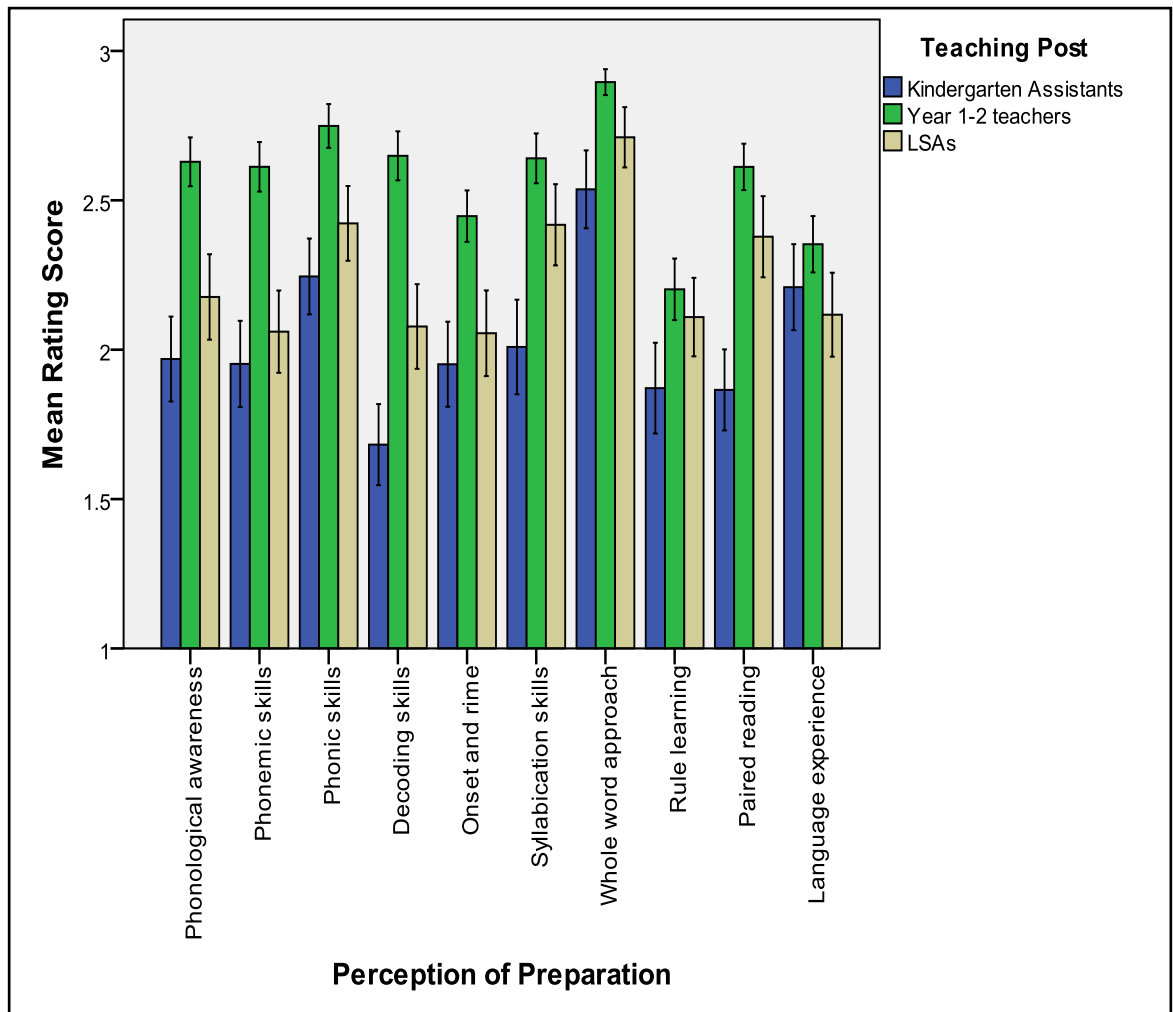
Table V21. Comparing perceptions: effectiveness of FT & adequate preparation

Aspects of literacy	Perception of adequate preparation	Perception of effective FT	Significance
Phonological awareness	**64.4%**	**53.2%**	**0.0036**
Phonemic Awareness	**62.7%**	**53.2%**	**0.0177**
Phonics Skills	59.7%	53.2%	0.0618
Decoding Skills	**61.1%**	**53.2%**	**0.0492**
Onset and rime	56.2%	53.2%	0.4818
Syllabication Skills	55.7%	53.2%	0.5035
WWA	55.3%	53.2%	0.5203
Rule learning	59.2%	53.2%	0.2217
Paired reading	54.1%	53.2%	0.8188
LEA	**61.0%**	**53.2%**	**0.0598**

Table V22. Comparing perceptions: ineffectiveness of FT & inadequate preparation

Aspects of literacy	Perception of inadequate preparation	Perception of ineffective FT	Significance
Phonological awareness	**38.4%**	**20.7%**	**0.0003**
Phonemic Awareness	**39.3%**	**20.7%**	**0.0002**
Phonics Skills	**39.3%**	**20.7%**	**0.0010**
Decoding Skills	**37.4%**	**20.7%**	**0.0004**
Onset and rime	**40.2%**	**20.7%**	**0.0001**
Syllabication Skills	**37.7%**	**20.7%**	**0.0014**
WWA	31.0%	20.7%	0.8560
Rule learning	22.7%	20.7%	0.6673
Paired reading	23.3%	20.7%	0.6604
LEA	**37.7%**	**20.7%**	**0.0009**

Table V23. Comparing perceptions: ineffectiveness of FT & adequate preparation

Aspects of literacy	Perception of adequate preparation	Perception of ineffective FT	Significance
Phonological Awareness	**15.0%**	**20.7%**	**0.0061**
Phonemic Awareness	16.3%	20.7%	0.1685
Phonics Skills	17.6%	20.7%	0.2699
Decoding Skills	17.8%	20.7%	0.3684
Onset and rime	18.5%	20.7%	0.5218
Syllabication Skills	17.6%	20.7%	0.2992
WWA	19.2%	20.7%	0.5680
Rule learning	16.8%	20.7%	0.3226
Paired reading	16.7%	20.7%	0.2011
LEA	**13.0%**	**20.7%**	**0.0198**

Table V24. Comparing perceptions: effectiveness of FT & inadequate preparation

Aspects of literacy	Perception of inadequate preparation	Perception of effective FT	Significance
Phonological Awareness	**23.3%**	**53.2%**	**<0.0005**
Phonemic Awareness	**25.0%**	**53.2%**	**<0.0005**
Phonics Skills	**23.0%**	**53.2%**	**<0.0005**
Decoding Skills	**30.8%**	**53.2%**	**0.0001**
Onset and rime	**30.5%**	**53.2%**	**0.0001**
Syllabication Skills	**29.0%**	**53.2%**	**0.0002**
WWA	**27.6%**	**53.2%**	**0.0072**
Rule learning	42.0%	53.2%	0.0502
Paired reading	**35.7%**	**53.2%**	**0.0125**
LEA	**27.3%**	**53.2%**	**<0.0005**

Table V25. FT perception and preparedness to teach phonological awareness

Phonological Awareness		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	33	38.4%	33	38.4%	20	23.3%	86	100%
Unsure	Count/ %age	24	18.8%	41	32.0%	63	49.2%	128	100%
Agree	Count/ %age	35	15.0%	48	20.6%	150	64.4%	233	100%
Total	Count/ %age	92	20.6%	122	27.3%	233	52.1%	447	100%

$\chi^2 = 46.35$; $v = 4$; $p < 0.0005$

Table V26. FT perception and preparedness to teach phonemic awareness

Phonemic Awareness		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	33	39.3%	30	35.7%	21	25.0%	84	100%
Unsure	Count/ %age	25	17.6%	45	31.7%	72	50.7%	142	100%
Agree	Count/ %age	34	16.3%	44	21.1%	131	62.7%	209	100%
Total	Count/ %age	92	21.1%	119	27.4%	224	51.5%	435	100%

$\chi2 = 38.96$; $v = 4$; $p < 0.0005$

Table V27. FT perception and preparedness to teach phonics skills compared

Phonics Skills		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	24	39.3%	23	37.7%	14	23.0%	61	100%
Unsure	Count/ %age	25	22.7%	35	31.8%	50	45.5%	110	100%
Agree	Count/ %age	55	17.6%	71	22.7%	187	59.7%	313	100%
Total	Count/ %age	104	21.5%	129	26.7%	251	51.9%	484	100%

$\chi^2 = 31.56$; $v = 4$; $p < 0.0005$

Table V28. FT perception and preparedness to teach to teach decoding skills

Decoding Skills		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	34	37.4%	29	31.9%	28	30.8%	91	100%
Unsure	Count/ %age	21	16.3%	43	33.3%	65	50.4%	129	100%
Agree	Count/ %age	37	17.8%	44	21.2%	127	61.1%	208	100%
Total	Count/ %age	92	21.5%	116	27.1%	220	51.4%	428	100%

$\chi^2 = 30.28$; $v = 4$; $p < 0.0005$

Table V29. FT perceptions and preparedness to teach onset and time

Onset and rime		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	33	40.2%	24	29.3%	25	30.5%	82	100%
Unsure	Count/ %age	31	18.2%	50	29.4%	89	52.4%	170	100%
Agree	Count/ %age	33	18.5%	45	25.3%	100	56.2%	178	100%
Total	Count/ %age	97	22.6%	119	27.7%	214	49.8%	430	100%

$\chi2 = 22.51$; $v = 4$; $p < 0.0005$

Table V30. FT perceptions and preparedness to teach syllabication skills

Syllabication skills		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	26	37.7%	23	33.3%	20	29.0%	69	100%
Unsure	Count/ %age	21	20.4%	29	28.2%	53	51.5%	103	100%
Agree	Count/ %age	45	17.6%	68	26.7%	142	55.7%	255	100%
Total	Count/ %age	92	21.5%	120	28.1%	215	50.4%	427	100%

$\chi 2 = 18.78; v = 4; p = 0.001$

Table V31. FT perceptions and preparedness to teach whole word approach

WWA		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	9	31.0%	12	41.4%	8	27.6%	29	100%
Unsure	Count/ %age	15	27.3%	20	36.4%	20	36.4%	55	100%
Agree	Count/ %age	74	19.2%	98	25.5%	213	55.3%	385	100%
Total	Count/ %age	98	20.9%	130	27.7%	241	51.4%	469	100%

$\chi 2 = 13.94; v = 4; p = 0.008$

Table V32. FT perceptions and preparedness to teach rule learning

Rule learning		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	20	22.7%	31	35.2%	37	42.0%	88	100%
Unsure	Count/ %age	40	23.0%	50	28.7%	84	48.3%	174	100%
Agree	Count/ %age	21	16.8%	30	24.0%	74	59.2%	125	100%
Total	Count/ %age	81	20.9%	111	28.7%	195	50.4%	387	100%

$\chi 2 = 7.073; v = 4; p = 0.132$

Table V33. FT perceptions and preparedness to implement paired reading

Paired reading		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	13	23.2%	23	41.1%	20	35.7%	56	100%
Unsure	Count/ %age	41	28.5%	33	22.9%	70	48.6%	144	100%
Agree	Count/ %age	37	16.7%	65	29.3%	120	54.1%	222	100%
Total	Count/ %age	91	21.6%	121	28.7%	210	49.8%	422	100%

$\chi 2 = 13.50; v = 4; p = 0.009$

Table V34. FT perceptions and preparedness to implement LEA compared

Language Experience Approach		Perception of Formal Training						Total	
		Disagree		Unsure		Agree			
Disagree	Count/ %age	29	37.7%	27	35.1%	21	27.3%	77	100%
Unsure	Count/ %age	42	25.9%	45	27.8%	75	46.3%	162	100%
Agree	Count/ %age	24	13.0%	48	25.9%	113	61.1%	185	100%
Total	Count/ %age	95	22.4%	120	28.3%	209	49.3%	424	100%

$\chi 2 = 30.95; v = 4; p < 0.0005$

Table V35. FT perceptions compared with areas of preparation during FT

Preparation during FT		Effectiveness of formal training			Total
		Disagree	Unsure	Agree	
Reading Theories	Count	7	6	20	33
	%age	21.2%	18.2%	60.6%	100.0%
Top-down	Count	3	5	11	19
	%age	15.8%	26.3%	57.9%	100.0%
Interactionist	Count	2	6	9	17
	%age	11.8%	35.3%	52.9%	100.0%
Phonics	Count	18	19	43	80
	%age	22.5%	23.8%	53.8%	100.0%
Multi Sensory	Count	45	58	137	240
	%age	18.8%	24.2%	57.1%	100.0%
Reading Difficulties	Count	42	60	116	218
	%age	19.3%	27.5%	53.2%	100.0%
Learning Support	Count	50	68	131	249
	%age	20.1%	27.3%	52.6%	100.0%
Other	Count	13	10	25	48
	%age	27.1%	20.8%	52.1%	100.0%
NMC	Count	42	47	93	182
	%age	23.1%	25.8%	51.1%	100.0%
Bottom-Up	Count	7	11	26	44
	%age	15.9%	25.0%	59.1%	100.0%
Interconnectionist	Count	2	8	10	20
	%age	10.0%	40.0%	50.0%	100.0%
Whole Word	Count	38	48	91	177
	%age	21.5%	27.1%	51.4%	100.0%
Language Experience	Count	19	30	41	90
	%age	21.1%	33.3%	45.6%	100.0%
Paired Reading	Count	35	47	86	168
	%age	20.8%	28.0%	51.2%	100.0%
Strategies for Reading	Count	44	52	106	202
	%age	21.8%	25.7%	52.5%	100.0%

$\chi^2 = 13.792, \ v = 28, \ p = 0.989$

Table V36. Effectiveness of personal to present ITT across FT profiles

Comparison of perceived effectiveness of own FT with present ITT preparation			Disagree	Unsure	Agree	Total
B.Ed. Graduates	Present ITT	Count	11	9	15	35
		%age	31.4%	25.7%	**42.9%**	100.0%
	Own FT	Count	8	6	23	37
		%age	21.6%	16.2%	**62.2%**	100.0%
BA–PGCE	Present ITT	Count	1	19	8	28
		%age	3.6%	67.9%	**28.6%**	100.0%
	Own FT	Count	7	8	12	27
		%age	25.9%	29.6%	**44.4%**	100.0%
MATC	Present ITT	Count	3	9	9	21
		%age	14.3%	42.9%	**42.9%**	100.0%
	Own FT	Count	3	5	14	22
		%age	13.6%	22.7%	**63.6%**	100.0%
2-year KG course	Present ITT	Count	6	20	30	56
		%age	10.7%	35.7%	**53.6%**	100.0%
	Own FT	Count	10	10	57	77
		%age	13.0%	13.0%	**74.0%**	100.0%
Cert. LSA	Present ITT	Count	3	19	25	47
		%age	6.4%	40.4%	**53.2%**	100.0%
	Own FT	Count	9	22	28	59
		%age	15.3%	37.3%	**47.5%**	100.0%
Diploma-LSA	Present ITT	Count	1	30	30	61
		%age	1.6%	49.2%	**49.2%**	100.0%
	Own FT	Count	2	18	45	65
		%age	3.1%	27.7%	**69.2%**	100.0%
Other	Present ITT	Count	18	76	64	158
		%age	11.4%	48.1%	**40.5%**	100.0%
	Own FT	Count	55	50	83	188
		%age	29.3%	26.6%	**44.1%**	100.0%

Table V37. Number of classroom practices identified as compared by profession

# of classroom practices identified		0 – 4	5 - 9	10 - 12	13 - 16	TOTAL
KGAs	Count	218	62	5	2	287
	%age	76.0%	21.6%	1.7%	0.7%	100.0%
LSAs	Count	82	53	17	9	161
	%age	50.9%	32.9%	10.6%	5.6%	100.0%
Year 1 teachers	Count	17	59	39	24	139
	%age	12.2%	42.4%	28.1%	17.3%	100.0%
Year 2 teachers	Count	14	50	34	16	114
	%age	12.3%	43.9%	29.8%	14.0%	100.0%
Total	Count	331	224	95	51	701
	%age	47.2%	32.0%	13.6%	7.3%	100.0%

$\chi^2 = 254.1, \ v = 9, \ p < 0.0005$

Figure V7. Number of classroom practices identified by professionals
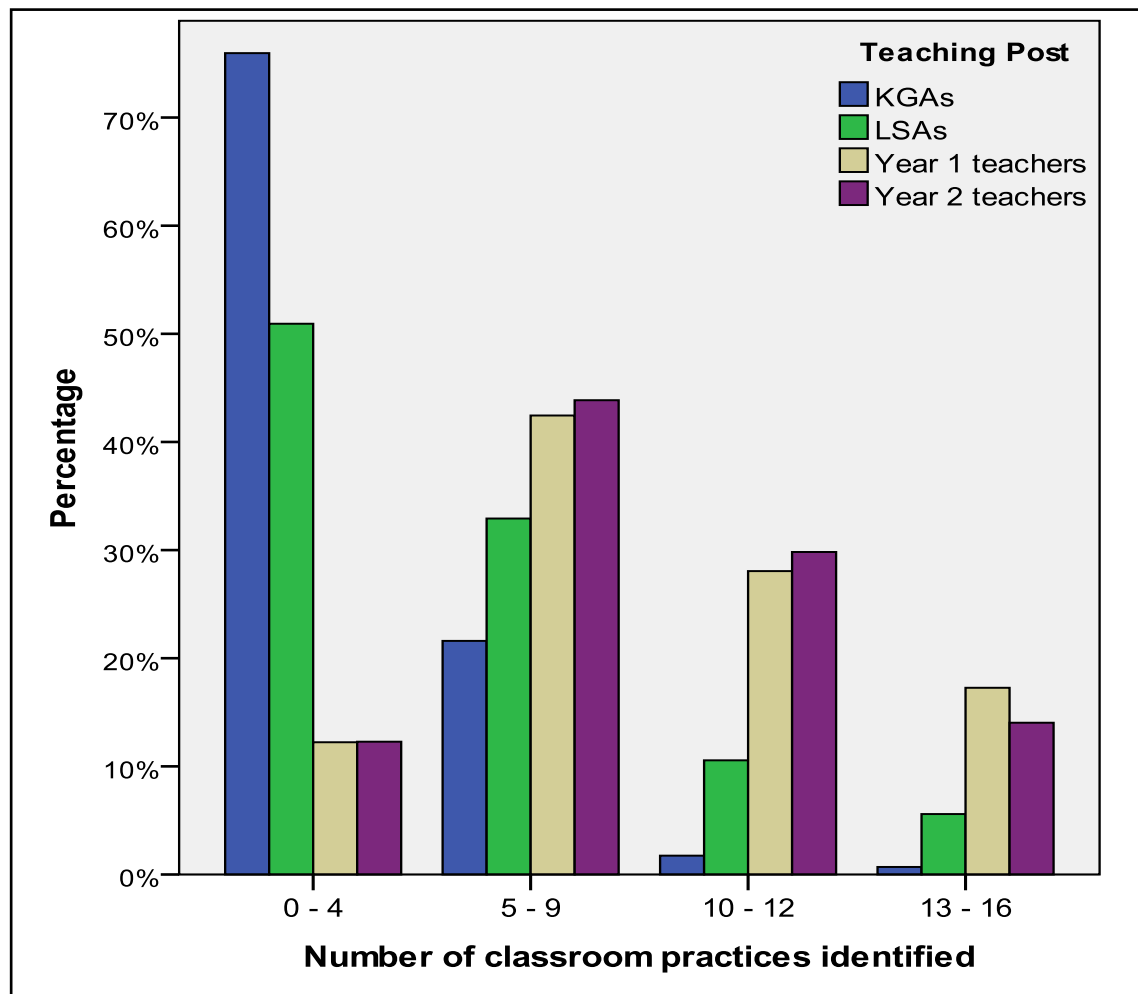
$\chi^2 = 254.1, \ v = 9, \ p < 0.0005$

Table V38. Number of classroom practices identified compared to FT profiles

Number of classroom		0 – 4	5 – 9	10 - 12	13 - 16	TOTAL
Count	Count	2	20	8	7	37
	%age	5.4%	54.1%	21.6%	18.9%	100.0%
Count	Count	7	11	7	7	32
	%age	21.9%	34.4%	21.9%	21.9%	100.0%
Count	Count	7	11	4	4	26
	%age	26.9%	42.3%	15.4%	15.4%	100.0%
Count	Count	59	22	2	2	85
	%age	69.4%	25.9%	2.4%	2.4%	100.0%
Count	Count	34	20	4	2	60
	%age	56.7%	33.3%	6.7%	3.3%	100.0%
Count	Count	25	20	16	7	68
	%age	36.8%	29.4%	23.5%	10.3%	100.0%
Count	Count	150	68	17	5	240
	%age	62.5%	28.3%	7.1%	2.1%	100.0%
Count	Count	284	172	58	34	548
	%age	51.8%	31.4%	10.6%	6.2%	100.0%

$\chi^2 = 112.1$, $v = 18$, $p < 0.0005$

Figure V8. Number of classroom practices identified according to FT profiles
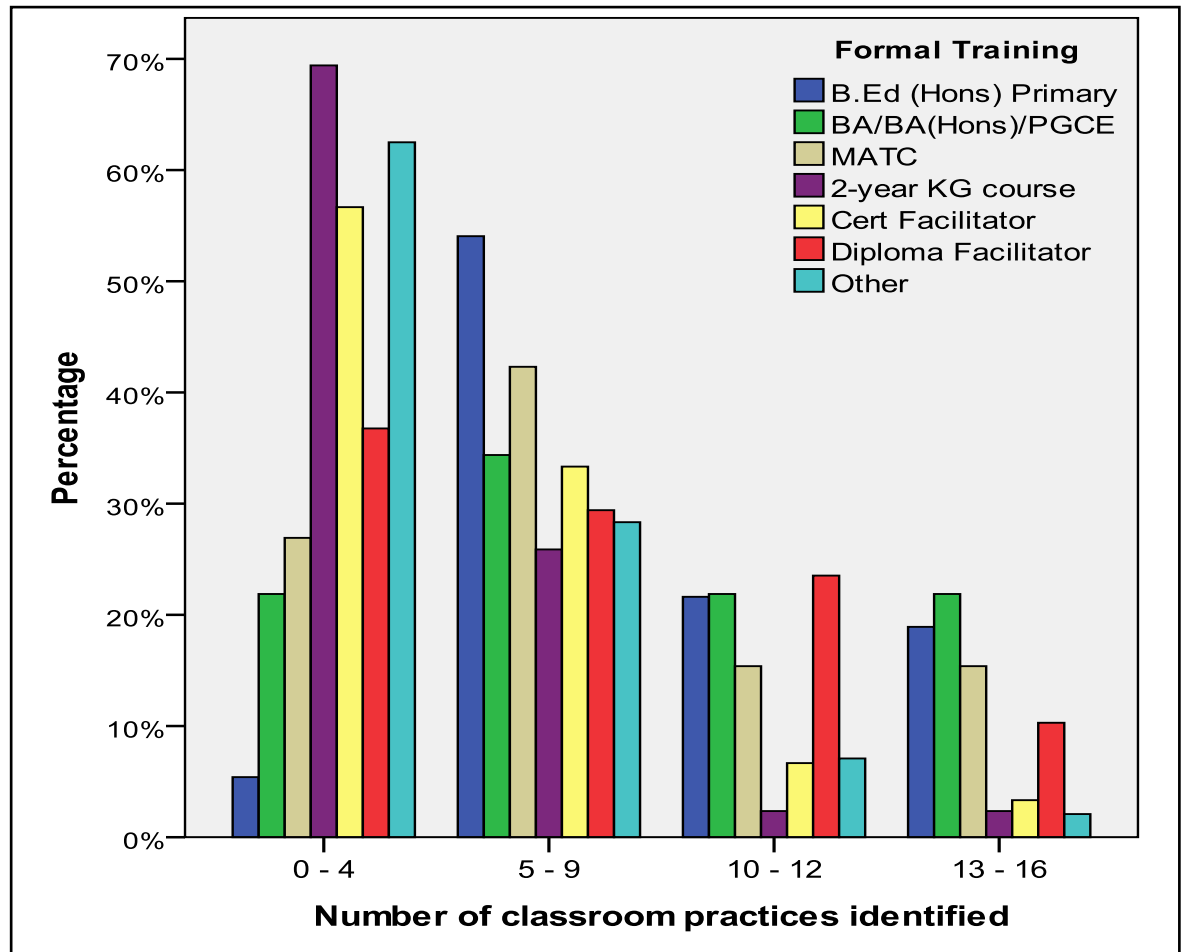
$\chi^2 = 112.1$, $v = 18$, $p < 0.0005$

Table V39. Number of classroom practices identified compared to age groups

Age Group		Number of classroom practices identified				
		0 – 4	5 - 9	10 - 12	13 - 16	Total
18-21 years	Count	18	8	0	0	26
	%age	69.2%	30.8%	0.0%	0.0%	100.0%
22-30 years	Count	78	68	36	18	200
	%age	39.0%	34.0%	18.0%	9.0%	100.0%
31-40 years	Count	39	47	25	14	125
	%age	31.2%	37.6%	20.0%	11.2%	100.0%
41-50 years	Count	67	41	18	10	136
	%age	49.3%	30.1%	13.2%	7.4%	100.0%
Over 50 years	Count	110	52	12	8	182
	%age	60.4%	28.6%	6.6%	4.4%	100.0%
Total	Count	312	216	91	50	669
	%age	46.6%	32.3%	13.6%	7.5%	100.0%

$\chi^2 = 45.56,\ v = 12,\ p < 0.0005$

Figure V9. Number of classroom practices identified according to age groups
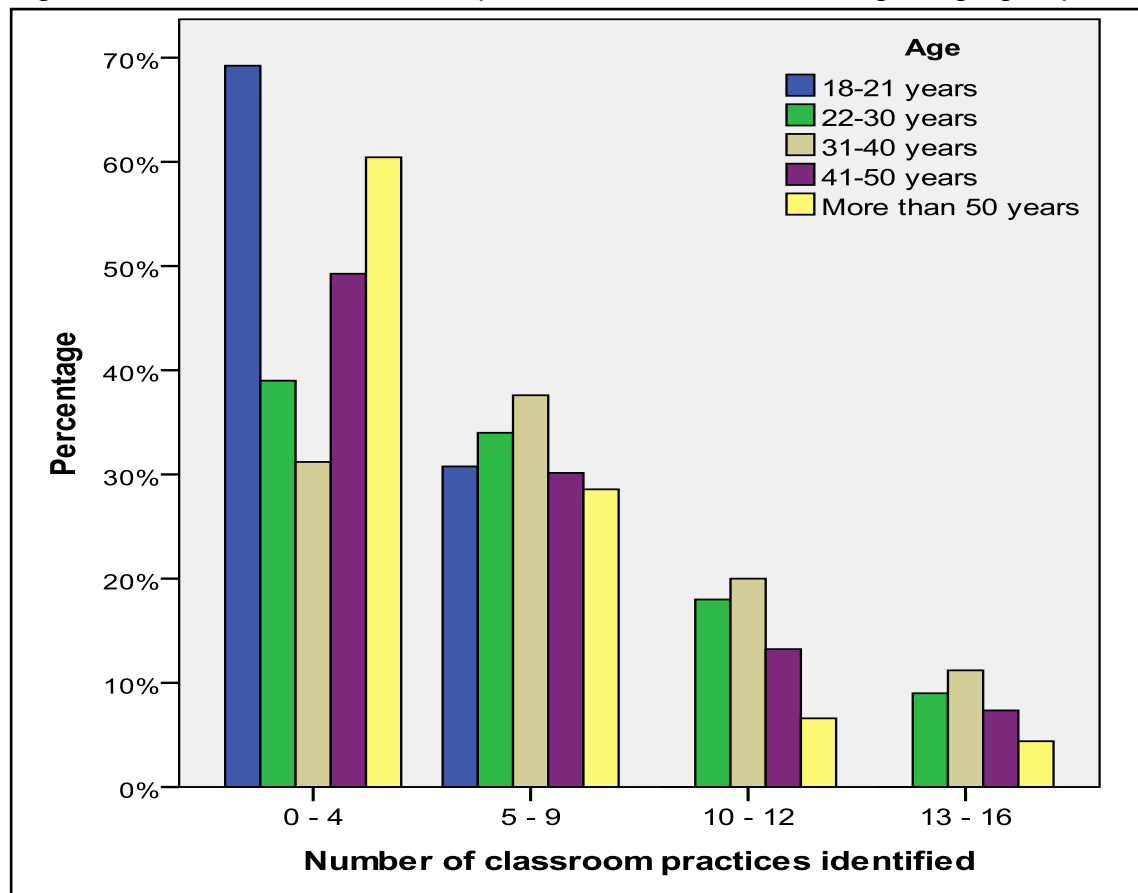
$\chi^2 = 45.56,\ v = 12,\ p < 0.0005$

Table V40. Early literacy techniques used by respondents during teaching

Early literacy techniques	Frequency	Percentage
Letter sound correspondence	446	63.6%
Phonics	387	55.2%
Letter names	352	50.2%
Clue pictures	348	49.6%
Whole word approach	318	45.5%
Feeling letters	277	39.5%
Phonological awareness	255	36.4%
Language experience	241	34.4%
Phonemic awareness	228	32.5%
Spelling	220	31.4%
Decoding skills	206	29.4%
Paired reading	199	28.4%
Syllabication	195	27.8%
Onset and rime	169	24.1%
Synthetic phonics	92	13.1%
Rule learning	70	10.0%

Table V41. Classroom practices compared across professions

Classroom Practices		KGAs		LSAs		Year 1 Teachers		Year 2 Teacher	
Phonological awareness	Count/ %age	35	15.2%	49	35.8%	102	75.0%	69	60.5%
Phonics	Count/ %age	89	38.7%	87	63.5%	116	85.3%	95	83.3%
Syllabication	Count/ %age	19	8.3%	54	39.4%	61	44.9%	61	53.5%
Letter sound correspondence	Count/ %age	147	63.9%	90	65.7%	117	86.0%	92	80.7%
Feeling letters	Count/ %age	108	47.0%	69	50.4%	65	47.8%	35	30.7%
Onset and rime	Count/ %age	27	11.7%	27	19.7%	58	42.6%	57	50.0%
WWA	Count/ %age	58	25.2%	70	51.1%	108	79.4%	82	71.9%
Paired reading	Count/ %age	11	4.8%	50	36.5%	68	50.0%	70	61.4%
Phonemic awareness	Count/ %age	29	12.6%	48	35.0%	80	58.8%	71	62.3%
Synthetic phonics	Count/ %age	7	3.0%	11	8.0%	45	33.1%	29	25.4%
Decoding skills	Count/ %age	11	4.8%	38	27.7%	90	66.2%	67	58.8%
Spelling	Count/ %age	21	9.1%	53	38.7%	82	60.3%	64	56.1%
Clue pictures	Count/ %age	126	54.8%	81	59.1%	90	66.2%	51	44.7%
Letter names	Count/ %age	121	52.6%	82	59.9%	82	60.3%	67	58.8%
Language experience	Count/ %age	93	40.4%	32	23.4%	60	44.1%	56	49.1%
Rule learning	Count/ %age	6	2.6%	19	13.9%	25	18.4%	20	17.5%

Figure V10. Classroom practice compared across teaching posts
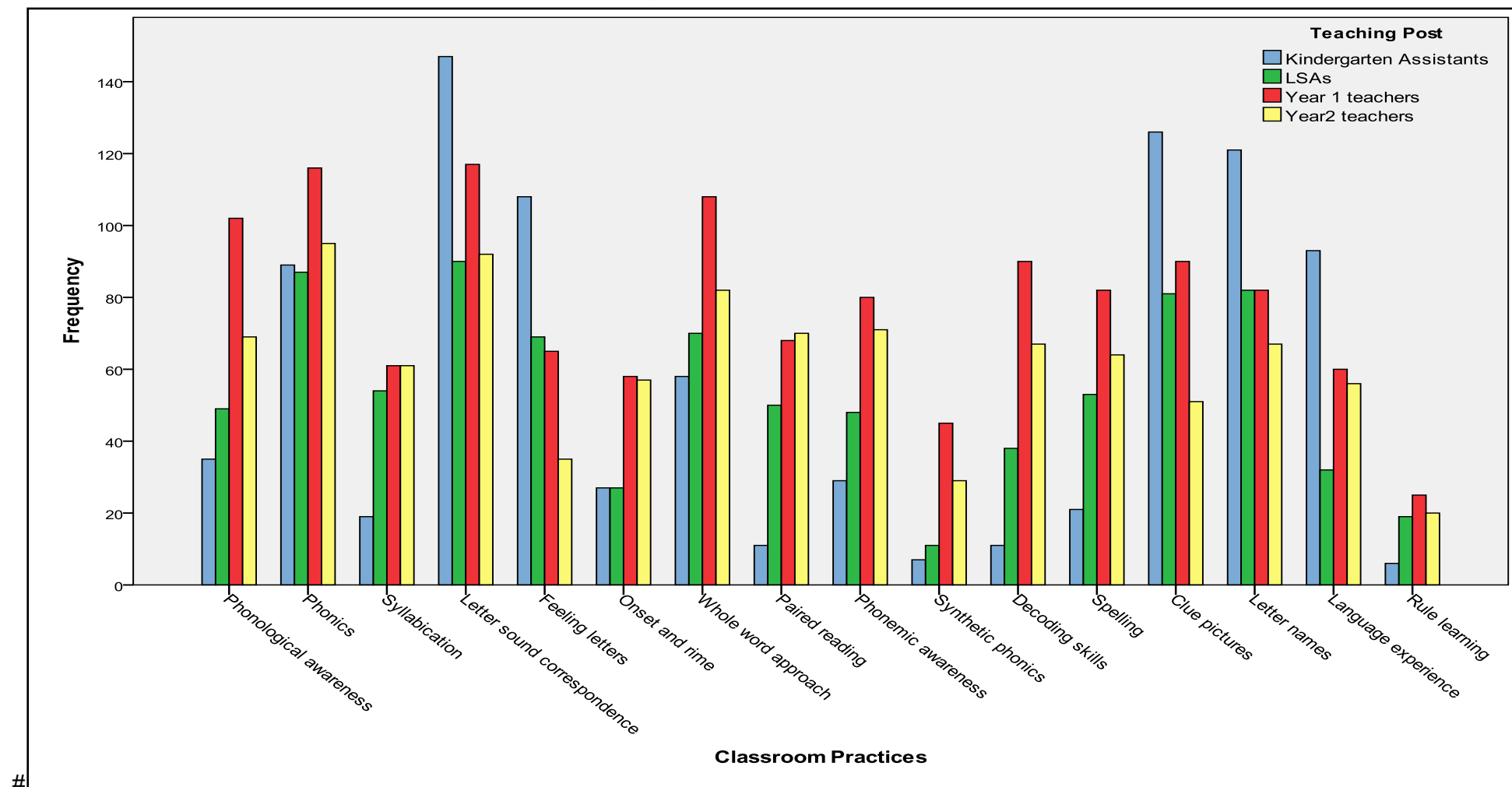
Table V42. Classroom practices compared across formal training profiles

Classroom practices	FT	B.Ed. (Hons) Primary	BA-PGCE	MATC	2-year KG course	Certificate-LSA	Diploma-LSA	Other
Phonological awareness	Count	24	20	13	16	13	35	50
	%age	**64.9%**	**64.5%**	**50.0%**	21.1%	25.0%	**54.7%**	25.0%
Phonics	Count	32	27	20	32	33	43	95
	%age	**86.5%**	**87.1%**	**76.9%**	42.1%	63.5%	**67.2%**	47.5%
Syllabication	Count	14	21	14	9	17	24	43
	%age	37.8%	**67.7%**	53.8%	11.8%	32.7%	37.5%	21.5%
Letter sound correspondence	Count	30	24	22	40	29	47	141
	%age	**81.1%**	**77.4%**	**84.6%**	52.6%	55.8%	**73.4%**	70.5%
Feeling letters	Count	15	11	7	32	24	37	88
	%age	**40.5%**	35.5%	26.9%	42.1%	46.2%	**57.8%**	44.0%
Onset and rime	Count	17	16	8	8	11	19	34
	%age	**45.9%**	51.6%	**30.8%**	10.5%	21.2%	29.7%	17.0%
Whole word approach	Count	33	22	18	21	21	42	76
	%age	89.2%	71.0%	69.2%	**27.6%**	**40.4%**	65.6%	38.0%
Paired reading	Count	24	15	11	8	16	27	41
	%age	**64.9%**	48.4%	42.3%	10.5%	30.8%	42.2%	20.5%
Phonemic awareness	Count	25	16	10	13	13	29	50
	%age	**67.6%**	51.6%	38.5%	17.1%	25.0%	45.3%	25.0%
Synthetic phonics	Count	13	10	6	5	4	8	18
	%age	**35.1%**	**32.3%**	23.1%	6.6%	7.7%	12.5%	9.0%
Decoding skills	Count	29	11	13	5	12	25	41
	%age	**78.4%**	35.5%	50.0%	6.6%	23.1%	39.1%	20.5%
Spelling	Count	26	20	13	10	20	28	39
	%age	**70.3%**	**64.5%**	50.0%	13.2%	38.5%	43.8%	19.5%
Clue pictures	Count	20	21	15	44	26	43	101
	%age	54.1%	**67.7%**	57.7%	57.9%	50.0%	**67.2%**	50.5%
Letter names	Count	21	20	16	37	35	39	107
	%age	56.8%	**64.5%**	61.5%	48.7%	**67.3%**	**60.9%**	53.5%
Language experience	Count	9	13	15	37	9	21	79
	%age	24.3%	41.9%	57.7%	48.7%	17.3%	32.8%	39.5%
Rule learning	Count	6	7	2	7	3	9	13
	%age	16.2%	22.6%	7.7%	9.2%	5.8%	14.1%	6.5%

Table V43. Classroom practices compared across age group

Classroom Practices		18-21 years	22-30 years	31-40 years	41-50 years	> 50 years
Phonological awareness	Count	1	89	57	47	48
	%age	5.6%	48.1%	49.1%	40.2%	31.2%
Phonics	Count	4	126	84	66	92
	%age	22.2%	68.1%	72.4%	56.4%	59.7%
Syllabication	Count	5	61	49	41	30
	%age	27.8%	33.0%	42.2%	35.0%	19.5%
Letter sound correspondence	Count	7	129	87	90	118
	%age	38.9%	69.7%	75.0%	76.9%	76.6%
Feeling letters	Count	8	90	47	56	68
	%age	44.4%	48.6%	40.5%	47.9%	44.2%
Onset and rime	Count	1	57	40	35	31
	%age	5.6%	30.8%	34.5%	29.9%	20.1%
Whole word approach	Count	4	101	80	57	64
	%age	22.2%	54.6%	69.0%	48.7%	41.6%
Paired reading	Count	0	68	54	35	30
	%age	0.0%	36.8%	46.6%	29.9%	19.5%
Phonemic awareness	Count	0	83	51	42	42
	%age	0.0%	44.9%	44.0%	35.9%	27.3%
Synthetic phonics	Count	0	32	27	15	16
	%age	0.0%	17.3%	23.3%	12.8%	10.4%
Decoding skills	Count	0	77	57	33	30
	%age	0.0%	41.6%	49.1%	28.2%	19.5%
Spelling	Count	5	78	54	36	40
	%age	27.8%	42.2%	46.6%	30.8%	26.0%
Clue pictures	Count	13	98	78	68	77
	%age	72.2%	53.0%	67.2%	58.1%	50.0%
Letter names	Count	8	98	72	80	79
	%age	44.4%	53.0%	62.1%	68.4%	51.3%
Language experience	Count	6	61	50	48	68
	%age	33.3%	33.0%	43.1%	41.0%	44.2%
Rule learning	Count	2	23	17	19	7
	%age	11.1%	12.4%	14.7%	16.2%	4.5%

Figure V11. Classroom practices compared across age groups
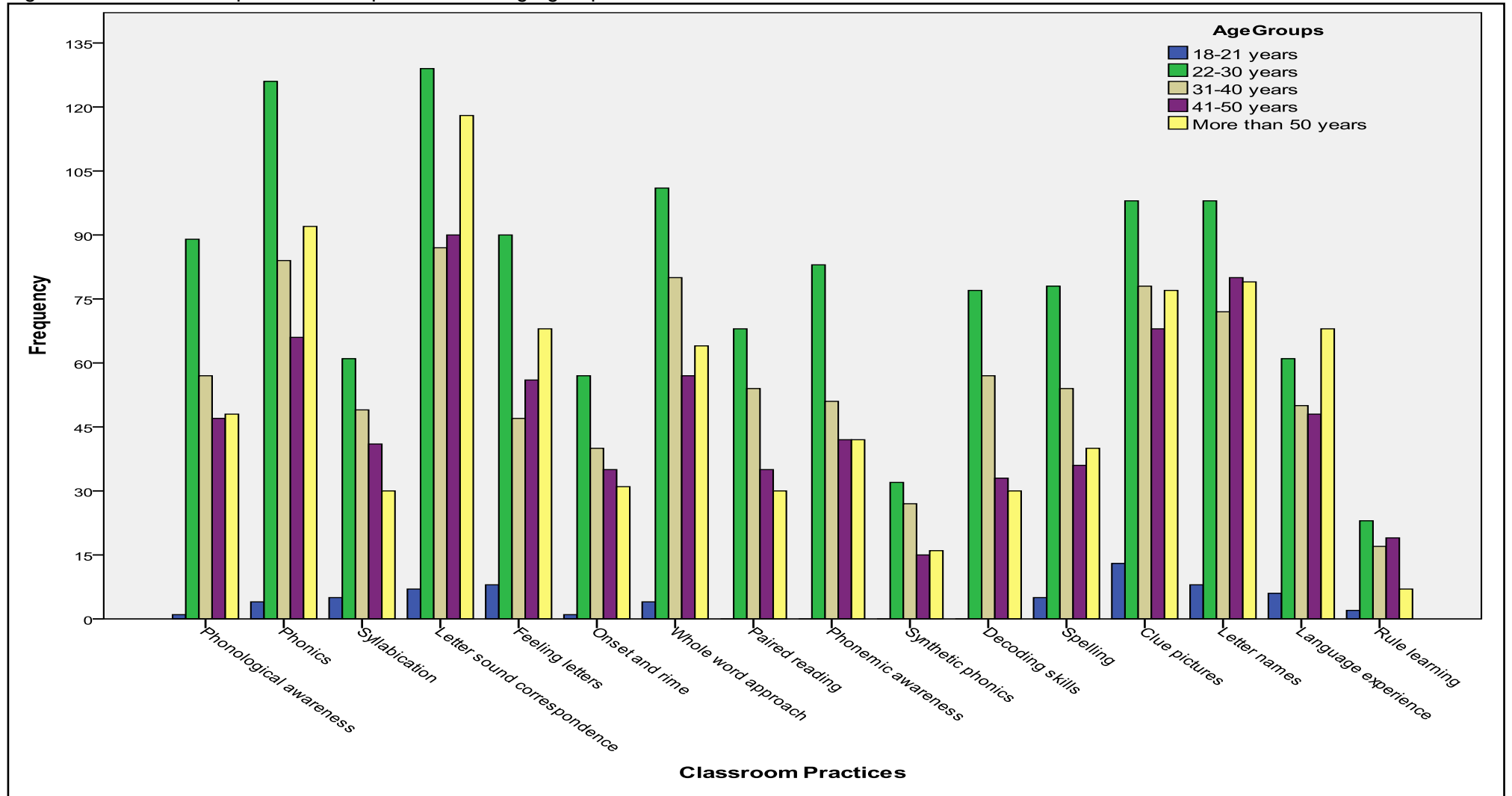
Table V44. Phonological awareness: perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - Phonology				Total	
		Practiced		Not Practiced			
Disagree	Count/ %age	10	3.9%	80	17.9%	90	12.8%
Unsure	Count/ %age	45	17.6%	93	20.9%	138	19.7%
Agree	Count/ %age	189	74.1%	57	12.8%	246	35.1%
Not answered	Count/ %age	11	4.3%	216	48.4%	227	32.4%
Total	Count/ %age	255	100.0%	446	100.0%	701	100.0%

$\chi^2 = 297.12,\ v = 3,\ p < 0.0005$

Table V45. Phonemic awareness: perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice – Phonemic				Total	
		Practiced		Not Practiced			
Disagree	Count/ %age	8	3.5%	81	17.1%	89	12.7%
Unsure	Count/ %age	46	20.2%	102	21.6%	148	21.1%
Agree	Count/ %age	155	68.0%	69	14.6%	224	32.0%
Not answered	Count/ %age	19	8.3%	221	46.7%	240	34.2%
Total	Count/ %age	228	100.0%	473	100.0%	701	100.0%

$\chi^2 = 226.09,\ v = 3,\ p < 0.0005$

Table V46. Phonics skills: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - Phonics Skills					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	13	3.4%	53	16.9%	66	9.4%
Unsure	Count/ %age	58	15.0%	59	18.8%	117	16.7%
Agree	Count/ %age	280	72.4%	51	16.2%	331	47.2%
Not answered	Count/ %age	36	9.3%	151	48.1%	187	26.7%
Total	Count/ %age	387	100.0%	314	100.0%	701	100.0%

$\chi^2 = 248.49,\ v = 3,\ p < 0.0005$

Table V47. Synthetic phonics: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - Synthetic Phonics					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	1	1.1%	65	10.7%	66	9.4%
Unsure	Count/ %age	9	9.8%	108	17.7%	117	16.7%
Agree	Count/ %age	77	83.7%	254	41.7%	331	47.2%
Not answered	Count/ %age	5	5.4%	182	29.9%	187	26.7%
Total	Count/ %age	92	100.0%	609	100.0%	701	100.0%

$\chi^2 = 55.58,\ v = 3,\ p < 0.0005$

Table V48. Decoding skills: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - Decoding Skills					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	4	1.9%	93	18.8%	97	13.8%
Unsure	Count/ %age	27	13.1%	109	22.0%	136	19.4%
Agree	Count/ %age	164	79.6%	56	11.3%	220	31.4%
Not answered	Count/ %age	11	5.3%	237	47.9%	248	35.4%
Total	Count/ %age	206	100.0%	495	100.0%	701	100.0%

$\chi^2 = 326.40, \ v = 3, \ p < 0.0005$

Table V49. Onset and rime: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice – onset and rime					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	3	1.8%	85	16.0%	88	12.6%
Unsure	Count/ %age	27	16.0%	150	28.2%	177	25.2%
Agree	Count/ %age	117	69.2%	73	13.7%	190	27.1%
Not answered	Count/ %age	22	13.0%	224	42.1%	246	35.1%
Total	Count/ %age	169	100.0%	532	100.0%	701	100.0%

$\chi^2 = 204.92, \ v = 3, \ p < 0.0005$

Table V50. Syllabication: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - Syllabication					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	5	2.6%	69	13.6%	74	10.6%
Unsure	Count/ %age	33	16.9%	78	15.4%	111	15.8%
Agree	Count/ %age	145	74.4%	123	24.3%	268	38.2%
Not answered	Count/ %age	12	6.2%	236	46.6%	248	35.4%
Total	Count/ %age	195	100.0%	506	100.0%	701	100.0%

$\chi^2 = 173.99, \ v = 3, \ p < 0.0005$

Table V51. Whole Word Approach: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - WWA					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	3	0.9%	30	7.8%	33	4.7%
Unsure	Count/ %age	20	6.3%	39	10.2%	59	8.4%
Agree	Count/ %age	270	84.9%	138	36.0%	408	58.2%
Not answered	Count/ %age	25	7.9%	176	46.0%	201	28.7%
Total	Count/ %age	318	100.0%	383	100.0%	701	100.0%

$\chi^2 = 179.87, \ v = 3, \ p < 0.0005$

Table V52. Rule Learning: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice – rule learning					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	2	2.9%	91	14.4%	93	13.3%
Unsure	Count/ %age	11	15.7%	170	26.9%	181	25.8%
Agree	Count/ %age	48	68.6%	87	13.8%	135	19.3%
Not answered	Count/ %age	9	12.9%	283	44.8%	292	41.7%
Total	Count/ %age	70	100.0%	631	100.0%	701	100.0%

$\chi^2 = 123.11,\ v = 3,\ p < 0.0005$

Table V53. Paired Reading: Perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice – Paired reading					
		Practiced		Not Practiced		Total	
Disagree	Count/ %age	3	1.5%	60	12.0%	63	9.0%
Unsure	Count/ %age	21	10.6%	130	25.9%	151	21.5%
Agree	Count/ %age	161	80.9%	72	14.3%	233	33.2%
Not answered	Count/ %age	14	7.0%	240	47.8%	254	36.2%
Total	Count/ %age	199	100.0%	502	100.0%	701	100.0%

$\chi^2 = 288.22,\ v = 3,\ p < 0.0005$

Table V54. LEA: perceived preparation and classroom practice

Perception of adequate Preparation		Classroom Practice - LEA				Total	
		Practiced		Not Practiced			
Disagree	Count/ %age	19	7.9%	63	13.7%	82	11.7%
Unsure	Count/ %age	41	17.0%	127	27.6%	168	24.0%
Agree	Count/ %age	124	51.5%	75	16.3%	199	28.4%
Not answered	Count/ %age	57	23.7%	195	42.4%	252	35.9%
Total	Count/ %age	241	100.0%	460	100.0%	701	100.0%

$\chi^2 = 96.25,\ v = 3,\ p < 0.0005$

Table V55. Comparing perceived adequate perception & classroom practices

Aspects of Early Literacy Skills	Perceived adequate preparation; used in class	Perceived adequate preparation; not used in class	Statistical Difference
Phonological Awareness	74.1%	12.8%	<0.0005
Phonemic Awareness	68.0%	14.6%	<0.0005
Phonics Skills	72.4%	16.2%	<0.0005
Synthetic Phonics	83.7%	41.7%	<0.0005
Decoding Skills	79.6%	11.3%	<0.0005
Onset and rime	69.2%	13.7%	<0.0005
Syllabication	74.4%	24.3%	<0.0005
Whole Word Approach	84.9%	36.0%	<0.0005
Rule Learning	68.6%	13.8%	<0.0005
Paired reading	80.9%	14.3%	<0.0005
LEA	51.5%	16.3%	<0.0005

Table V56. Comparing perceived inadequate preparation & classroom practices

Aspects of Early Literacy Skills	Perceived inadequate preparation; used in class	Perceived inadequate preparation; not used in class	Statistical Difference
Phonological Awareness	3.9%	17.9%	0.0030
Phonemic Awareness	3.5%	17.1%	0.0032
Phonics Skills	3.4%	16.9%	0.0114
Synthetic Phonics	1.1%	10.7%	0.0208
Decoding Skills	1.9%	18.8%	0.0002
Onset and rime	1.8%	16.0%	0.0011
Syllabication	2.6%	13.6%	0.0154
Whole Word Approach	0.9%	7.8%	**0.1742**
Rule Learning	2.9%	14.4%	0.0058
Paired reading	1.5%	12.0%	0.0204
LEA	7.9%	13.7%	**0.2332**

Table V57. Comparing classroom practices and perceived preparation

Aspects of Early Literacy Skills	Perceived adequate preparation; used in class	Unsure about adequate preparation; used in class	Statistical Difference
Phonological Awareness	74.1%	17.6%	<0.0005
Phonemic Awareness	68.0%	20.2%	<0.0005
Phonics Skills	72.4%	15.0%	<0.0005
Synthetic Phonics	83.7%	9.8%	<0.0005
Decoding Skills	79.6%	13.1%	<0.0005
Onset and rime	69.2%	16.0%	<0.0005
Syllabication	74.4%	16.9%	<0.0005
Whole Word Approach	84.9%	6.3%	<0.0005
Rule Learning	68.6%	15.7%	<0.0005
Paired reading	80.9%	10.6%	<0.0005
LEA	51.5%	17.0%	<0.0005

Table V58. Insecurity about preparation compared to classroom practices

Aspects of Early Literacy Skills	Unsure about adequate preparation; used in class	Unsure about adequate preparation; not used in class	Statistical Difference
Phonological Awareness	17.6%	20.9%	0.4875
Phonemic Awareness	20.2%	21.6%	0.7673
Phonics Skills	15.0%	18.8%	0.4388
Synthetic Phonics	9.8%	17.7%	0.0807
Decoding Skills	13.1%	22.0%	0.0547
Onset and rime	**16.0%**	**28.2%**	**0.0060**
Syllabication	16.9%	15.4%	0.7617
Whole Word Approach	6.3%	10.2%	0.4429
Rule Learning	**15.7%**	**26.9%**	**0.0096**
Paired reading	**10.6%**	**25.9%**	**0.0007**
LEA	**17.0%**	**27.6%**	**0.0202**

Table V59. Sources of awareness to MSA to early literacy

Awareness of MSA	N	%age	Awareness of MSA	N	%age
FT	243	42.2	Internet	154	26.7%
Workplace	258	44.8	Not yet familiar	138	23.9%
CPD	142	24.7	Colleagues	129	22.4%
In-service	172	29.9	Others	40	6.94%

Table V60. Sources of awareness to MSA to early literacy by FT profiles

Sources of awareness to MSA according to FT Profile	B.Ed. (Hons) Primary	BA-PGCE	MATC	2-year KG course	Certificate LSA	Diploma LSA	Other
FT	16	13	1	33	19	50	40
CPD	10	11	9	16	14	21	35
Workplace	13	8	14	34	27	25	83
Still need to be familiarized	8	7	7	15	13	6	66
In-service	6	13	10	19	11	7	72
Internet	10	7	5	14	14	13	45
Colleagues	4	6	8	11	13	10	46
Others	0	5	1	5	4	5	12

Table V61. Words that come to mind - MST to teaching early literacy

Terms used	Frequency	Percentage
Visual	352	50.2
Kinaesthetic	330	47.1
Auditory	290	41.4
Oral/Verbal	122	17.4
Action/Movement	112	16.0
Use of all senses	79	11.3
Look and say	77	11.0
Sand/Water play	62	8.84
Crafts and games	60	8.56
Olfactory/Smell	60	8.56
ICT	52	7.42
Handwriting	50	7.13
Inclusive/Success	46	6.56
Phonics	45	6.42
Story telling	44	6.28
Taste	42	5.99
Books	41	5.85
Rhyming	38	5.42
Reading activities	37	5.28
Decoding	37	5.28
Music	36	5.14
Art	34	4.85
Letters	30	4.28
Drama/Creativity	30	4.28
Fun	28	3.99
Memory skills	27	3.85
Resources	23	3.28
SpLD	22	3.14
Differentiation	22	3.14
Alphabet resources	21	3.00
Spelling	15	2.14
Language games	12	1.71

Figure V12. Words that come to mind
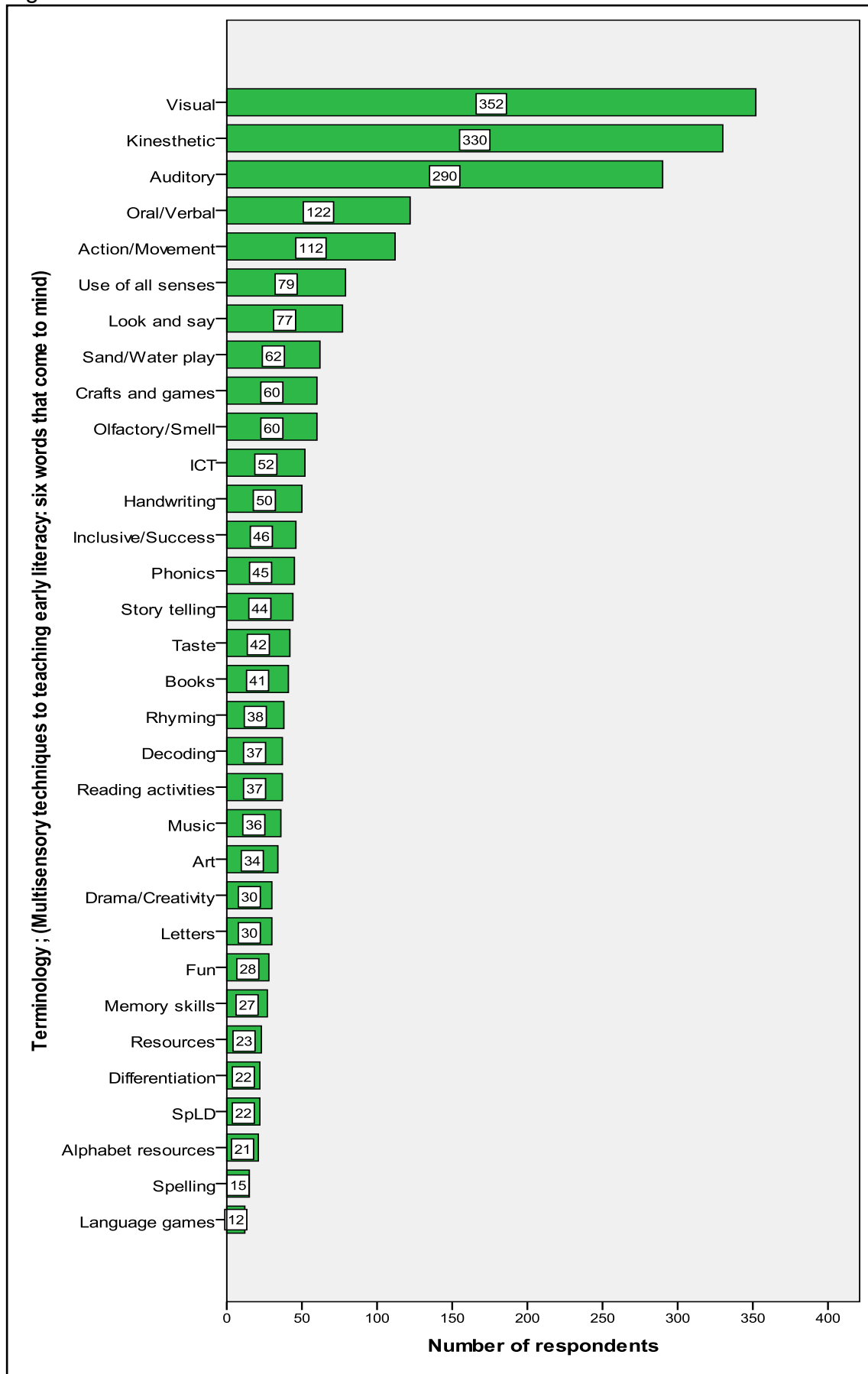
Table V62. Comparing levels of correctness of SMSLI definitions

SMSLI Definition	Frequency	Percentage	Difference
Generic Definition	245	34.95	p=0.0529
Incorrect Definition	211	30.10	
Generic Definition	245	34.95	p<0.0005
Partially correct Definition	69	9.84	
Generic Definition	245	34.95	p<0.0005
Almost/correct Definition	8	1.14	
Incorrect Definition	211	30.10	p<0.0005
Partially correct Definition	69	9.84	
Incorrect Definition	211	30.10	p<0.0005
Almost/correct Definition	8	1.14	
Partially correct Definition	69	9.84	p<0.0005
Almost/correct Definition	8	1.14	

Table V63. 'Use of all senses' SMSLI definitions

	'Use of all senses' definition
r6	Teaching strategies and material that stimulate the learning of literacy by enabling students to use some or all of their senses
r166	Techniques by which you make use of various senses such as: auditory - sound of the letter (phonics) - a letter has a sound, Visual - see the letter, as letter has a name, feel - design the letter - draw in the air preparation for writing
r358	Helping children learn through more than one of the senses using sight, hearing, looking at pictures, listening to what teacher says, using sand to feel the letter (sounds), using sandpaper to feel the letter (sound)
r493	When language training achieves harmonious interaction of all the senses - when the learner sees, hears, speaks and writes simultaneously. MST encourage the various paths of a child's sensorimotor system to support each other in making permanent
r579	Offering visual verbal and auditory presentation of letters/blends. Reinforced with the help of songs actions acting out and feeling the letters with the use of various tactile tools such as sand paint rough textures etc…
r623	Children need to be involved in literacy by using various activities/games/opportunities/and resources. Visual auditory, feeling skills need to be included in literacy approach.
r680	To experience learning through more than one of the senses. LSA has to be creative to involve not only hearing and sight but also use of touch and movement

Table V64. Incorrect SMSLI definitions

	Incorrect definitions
r67	Using different types of media to teach them literacy such as by story telling and by sand for pre-writing skills, educational videos and rhymes as they enhance their senses as well
r120	Presenting items to children and describing them. Telling children to touch and feel while describing the texture & form. Comparing texture of items and form.
r146	Exposure to books from early childhood. Also, books should have different textures and colours in them to attract more children.
r347	Singing and nursery rhymes (Language development). Story telling discussion and new words free play communication between children going through books and finding letters which have a meaning.
r482	Helping children to understand the letters through various materials, making it fun to learn for young children.
r520	MST make learning fun and possible when used creatively and according to the students' needs and ability. Planning ahead is crucial.
r676	Highly effective. You are targeting all possible learning styles and encourage boys to learn through enjoyable activities.
r683	A kinaesthetic approach where the child is feeling drawing seeing hearing a letter or sound (e.g. writing with finger in wet sand marble tracker tray, washing up bottle with water in to write letters).
r700	With MST, I think that by using various ways of teaching literacy you will meet all students' needs and that will motivate them more to learn.

Table V65. Partially correct SMSLI definitions

	Partially correct definition
r8	Multisensory techniques allows for success as they are tailor-made according to the child's strengths and weaknesses. The child uses simultaneously eyes-ears-hands-lips when learning, which are the pathways to the brain. 'Bibien Miftuħa' (Open Doors) is a good example.
r208	Use of both phonics and look-and-say methods as part of a language acquisition programme. Paired reading techniques and literacy hour.
r369	MST are one dimension of the practices and approaches useful with students who have problems with language learning, including reading and writing.
r573	MST are a passage that leads children to a better understanding of reading. **They** help children grasp reading techniques and at the same time they motivate and encourage children to read.
r607	MST help a child grasp word recognition leading to early reading success. Some children have different needs and difficulties. So, when using all 5 senses, we are helping them in line with their different needs through different modalities.
r621	Helping children with learning difficulties to read and write, as for them reading is not in a natural way. There is a one-to-one intervention and usage of flashcards and pictures through a structured programme.

Table V66. Correct/mostly correct SMSLI definitions

	Correct/mostly correct definition
r151	Helping the child to see, recognize, repeat orally. Later, forming and joining letters to form words which would make sense to the child.
r203	An effective way to present and introduce literacy. This approach makes use of all senses where one can find different ways to break the code to reading. A structured programme with overlearning is important whilst also considering one's individual learning style.
r241	Use of all senses, overlearning and automaticity, highly structured, usually phonetically based, sequential and cumulative, memory skills, conceptualization.
r302	Different routes to break the code to reading. This was proven to be the most successful approach. These techniques respect individual learning and give opportunity to all individuals.
r310	Multisensory techniques provide the child with the structure needed and also with different ways of retaining information learned.
r551	The use of all senses (multisensory approach) gives children structure and metacognition. In enhances memory skills.
r564	Multisensory techniques to teaching literacy refer to the use of auditory, visual, and kinaesthetic, tactile pathways to reinforce learning through functions in the brain. Through this multisensory approach, students develop the skills to improve reading and writing as they learn the sound to symbol relationship.
r583	A holistic approach based on child-centredness. The importance of using different techniques to enhance children's understanding by exposing them to phonemic skills, phonics skills, decoding skills, onset and rime, syllabication skills, whole word approach, rule learning and language experience approach.

Table V67. Comparison of correctness of definitions across formal training profile

Definition		Use of all senses	Incorrect	Mostly correct	Partially correct	No answer	Total
B.Ed. Primary	Count	16	1	1	3	16	37
	%age	43.2%	2.7%	2.7%	8.1%	43.2%	100.0%
B.A.-PGCE	Count	11	16	0	0	5	32
	%age	34.4%	50.0%	0.0%	0.0%	15.6%	100.0%
MATC	Count	8	12	1	1	4	26
	%age	30.8%	46.2%	3.8%	3.8%	15.4%	100.0%
KG-course	Count	22	27	2	11	23	85
	%age	25.9%	31.8%	2.4%	12.9%	27.1%	100.0%
Certificate LSA	Count	30	12	1	7	10	60
	%age	50.0%	20.0%	1.7%	11.7%	16.7%	100.0%
Diploma LSA	Count	26	25	0	10	7	68
	%age	38.2%	36.8%	0.0%	14.7%	10.3%	100.0%
Other	Count	82	70	2	23	63	240
	%age	34.2%	29.2%	0.8%	9.6%	26.3%	100.0%
Total	Count	195	163	7	55	128	548
	%age	35.6%	29.7%	1.3%	10.0%	23.4%	100.0%

Figure V13. Comparison of correctness of definition across formal training profiles
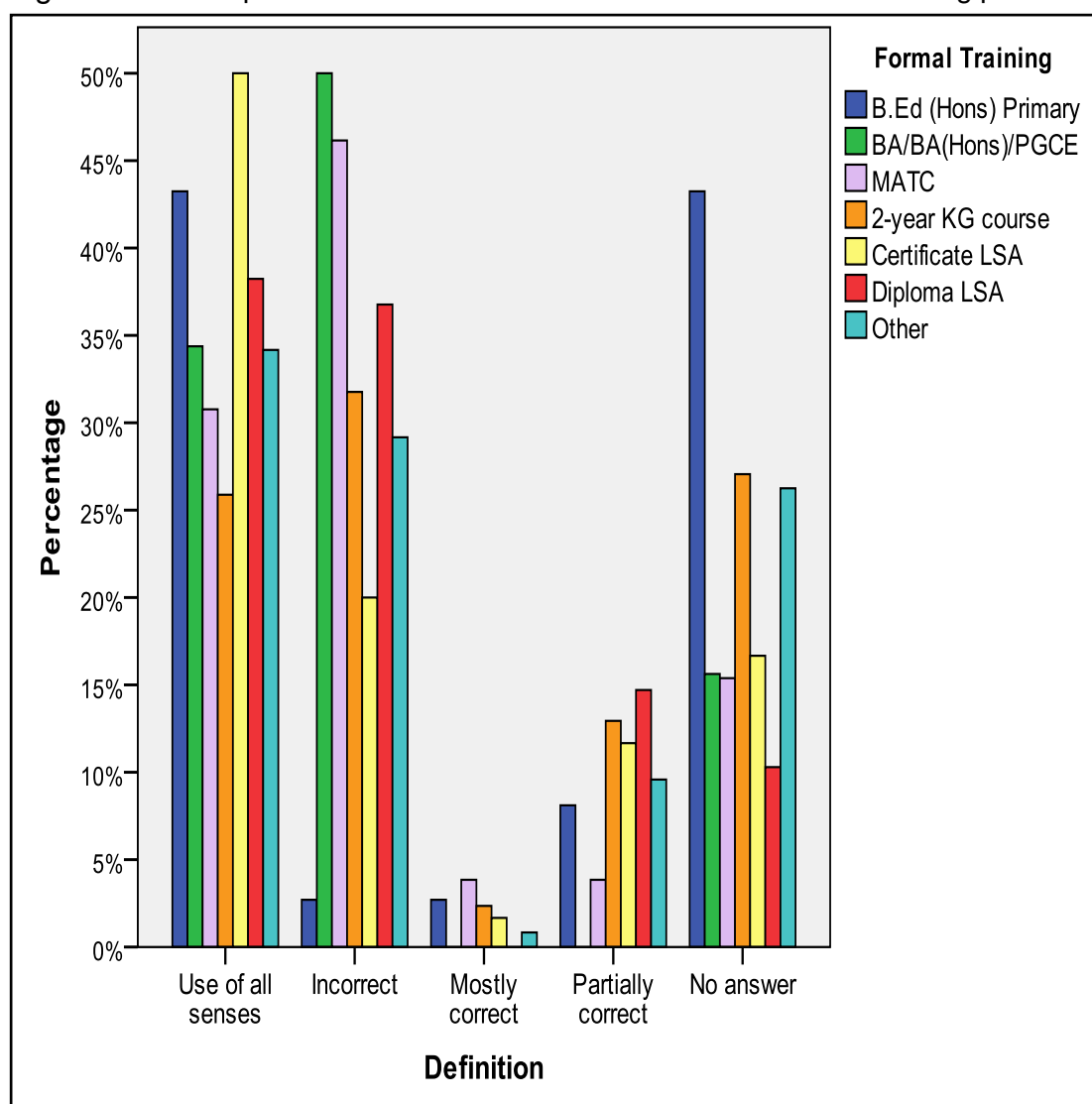
Table V68. Comparing MST preparation and formal training perceptions

Perception of Formal training		Perception of MST preparedness			
		Disagree	Unsure	Agree	Total
Disagree	Count	25	47	42	114
	Percentage	4.9%	9.2%	8.3%	22.4%
Unsure	Count	35	45	52	132
	Percentage	6.9%	8.8%	10.2%	25.9%
Agree	Count	109	84	70	263
	Percentage	21.4%	16.5%	13.8%	51.7%
Total	Count	169	176	164	509
	Percentage	33.2%	34.6%	32.2%	100.0%

$\chi^2 = 18.95$, $v = 4$, $p = 0.001$

Table V69. Perceived MST preparation compared across teaching posts

Perception of MST preparation		Disagree	Unsure	Agree	TOTAL
KGAs	Count	36	76	60	172
	Percentage	20.9%	44.2%	34.9%	100.0%
LSAs	Count	34	51	52	137
	Percentage	24.8%	37.2%	38.0%	100.0%
Year 1 teachers	Count	58	36	33	127
	Percentage	45.7%	28.3%	26.0%	100.0%
Year 2 teachers	Count	47	26	33	106
	Percentage	44.3%	24.5%	31.1%	100.0%
Total	Count	175	189	178	542
	Percentage	32.3%	34.9%	32.8%	100.0%

$\chi^2 = 33.57$, $v = 6$, $p < 0.0005$

Figure V14. Perception of preparation to address MSA in early literacy
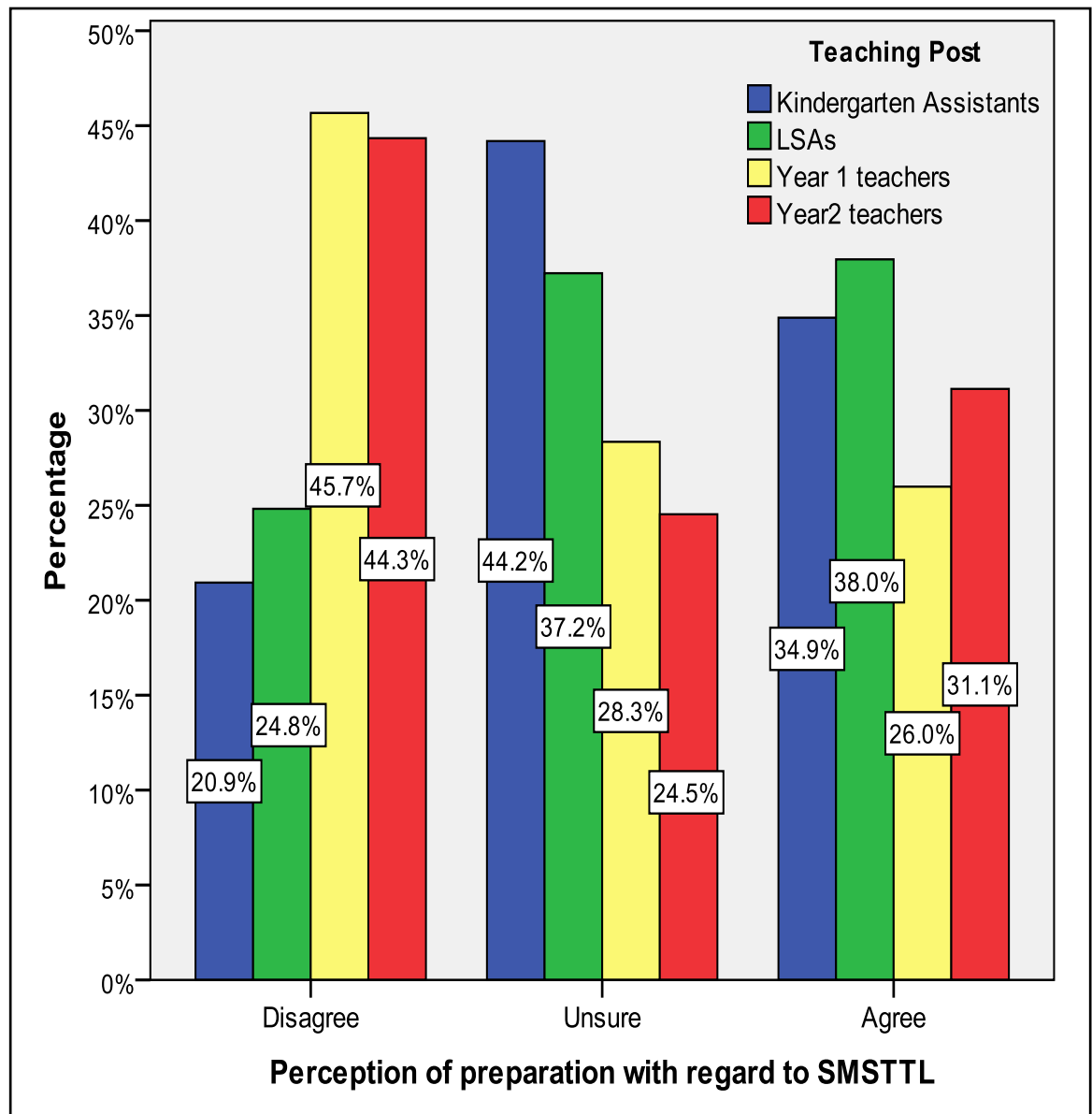
$\chi^2 = 33.57$, $v = 6$, $p < 0.0005$

Table V70. Perception of MSA preparation according to FT profile

Perception of adequacy to address multisensory approaches		Disagree	Unsure	Agree	Total
B.Ed. (Hons) Primary	Count	16	9	11	36
	%age	**44.4%**	25.0%	30.6%	100.0%
BA/BA(Hons)/ PGCE	Count	9	10	7	26
	%age	34.6%	38.5%	26.9%	100.0%
MATC	Count	9	7	6	22
	%age	40.9%	31.8%	27.3%	100.0%
2-year KG course	Count	13	24	21	58
	%age	**22.4%**	41.4%	36.2%	100.0%
Certificate LSAs	Count	13	17	19	49
	%age	26.5%	34.7%	**38.8%**	100.0%
Diploma-LSAs	Count	21	21	20	62
	%age	33.9%	33.9%	32.3%	100.0%
Other	Count	41	69	62	172
	%age	23.8%	40.1%	36.0%	100.0%
Total	Count	122	157	146	425
	%age	28.7%	36.9%	34.4%	100.0%

$\chi^2 = 11.46,\ v = 12,\ p = 0.490$

Table V71. Comparing MST and FT effectiveness across professions

Comparison of perceptions: MST versus Formal training		Disagree	Unsure	Agree	Total
KGAs' Perception of FT effectiveness	Count	50	51	112	213
	%age	23.5%	23.9%	52.6%	100.0
KGAs' Perception of MST effectiveness	Count	36	76	60	172
	%age	20.9%	44.2%	34.9%	100.0
Teachers' Perception of FT effectiveness	Count	54	59	119	232
	%age	23.3%	25.4%	51.3%	100.0
Teachers' Perception of MST effectiveness	Count	105	62	66	233
	%age	45.0%	26.4%	28.6%	100%
LSAs Perception of FT effectiveness	Count	18	44	83	145
	%age	12.4%	30.3%	57.2%	100.0
LSAs Perception of MST effectiveness	Count	34	51	52	137
	%age	24.8%	37.2%	38.0%	100.0
Total Perception of FT effectiveness	Count	122	154	314	590
	%age	20.7%	26.1%	53.2%	100.0
Total Perception of MST effectiveness	Count	175	189	178	542
	%age	32.3%	34.9%	32.8%	100.0

Figure V15. Comparing perception of FT effectiveness and MSA preparedness
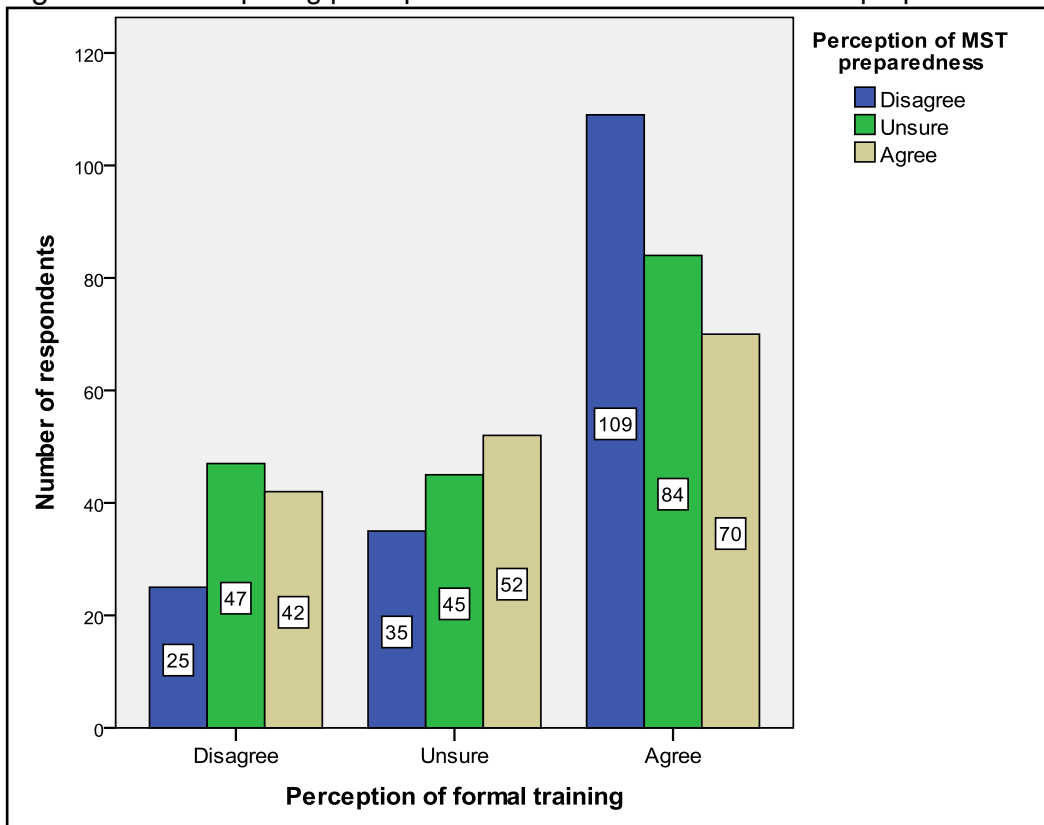
$$\chi^2 = 18.95, \ v = 4, \ p = 0.001$$

Figure V16. Comparative perceptions of effective FT and MSA preparedness
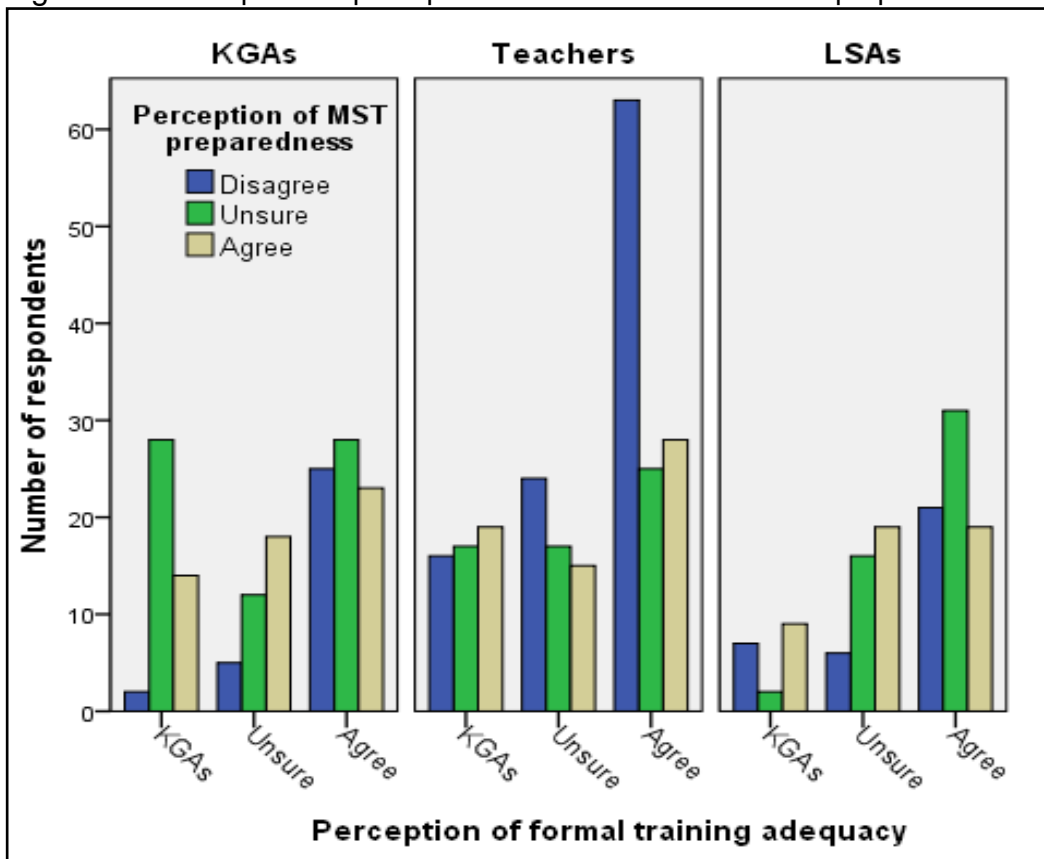
Table 72. Professionals' Perception: of MSA preparedness and FT effectiveness

MSA versus FT	Disagree	Unsure	Agree
KGAs Perception of Effective FT	23.5%	23.9%	52.6%
KGAs Perception of preparedness MSA	20.9%	44.2%	34.9%
Differences	*0.5429*	***<0.000***	***0.0006***
Teachers' Perception of Effective FT	23.3%	25.4%	51.3%
Teachers' Perception of preparedness MSA	45.0%	26.4%	28.6%
Differences	***<0.000***	*0.8057*	***<0.000***
LSAs Perception of Effective FT	12.4%	30.3%	57.2%
LSAs' Perception of preparedness MSA	24.8%	37.2%	38.0%
Differences	0.077	0.2214	**0.0014**
Total respondents' Perception of Effective	20.7%	26.1%	53.2%
Total respondents' Perception MSA	32.3%	34.9%	32.8%
Differences	***<0.000***	***0.0013***	***<0.000***

FT: $\chi^2 = 8.391$, $v = 4$, $p = 0.078$; MSA preparedness: $\chi^2 = 33.57$, $v = 6$, $p < 0.0005$

Table V73. Comparing FT effectiveness and MSA preparedness by FT profiles

Comparison across FT profiles		Disagree	Unsure	Agree	TOTAL
B.Ed. (Hons) Primary Perception FT	Count	8	6	23	37
	%age	21.6%	16.2%	62.2%	100.0%
B.Ed. (Hons) Primary Perception MSA	Count	16	9	11	36
	%age	44.4%	25.0%	30.6%	100.0%
BA- PGCE Perception FT	Count	7	8	12	27
	%age	25.9%	29.6%	44.4%	100.0%
BA- PGCE Perception MSA	Count	9	10	7	26
	%age	34.6%	38.5%	26.9%	100.0%
MATC Perception Formal	Count	3	5	14	22
	%age	13.6%	22.7%	63.6%	100.0%
MATC Perception MSA	Count	9	7	6	22
	%age	40.9%	31.8%	27.3%	100.0%
2-year KG course Perception FT	Count	10	10	57	77
	%age	13.0%	13.0%	74.0%	100.0%
2-year KG course Perception MSA	Count	13	24	21	58
	%age	22.4%	41.4%	36.2%	100.0%
Cert. LSA Perception FT	Count	9	22	28	59
	%age	15.3%	37.3%	47.5%	100.0%
Cert. LSA Perception MSA	Count	13	17	19	49
	%age	26.5%	34.7%	38.8%	100.0%
Diploma-LSA Perception FT	Count	2	18	45	65
	%age	3.1%	27.7%	69.2%	100.0%
Diploma-LSA Perception MSA	Count	21	21	20	62
	%age	33.9%	33.9%	32.3%	100.0%
Other Perception FT	Count	55	50	83	188
	%age	29.3%	26.6%	44.1%	100.0%
Other Perception MSA	Count	41	69	62	172
	%age	23.8%	40.1%	36.0%	100.0%
Total Perception FT	Count	94	119	262	475
	%age	19.8%	25.1%	55.2%	100.0%
Total Perception MSA	Count	122	157	146	425
	%age	28.7%	36.9%	34.4%	100.0%

$\chi^2 = 44.13$, $v = 12$, $p < 0.0005$ (FT) $\chi^2 = 11.46$, $v = 12$, $p = 0.490$ (MSA techniques)

Table V74. Comparing MST and FT effectiveness across age groups

Comparison across age groups		Disagree	Unsure	Agree	Total
18-21 years Perception FT	Count	2	2	17	21
	%age	9.5%	9.5%	81.0%	100.0%
18-21 years Perception MST	Count	6	6	5	17
	%age	35.3%	35.3%	29.4%	100.0%
22-30 years Perception FT	Count	30	55	103	188
	%age	16.0%	29.3%	54.8%	100.0%
22-30 years Perception MST	Count	60	69	54	183
	%age	32.8%	37.7%	29.5%	100.0%
31-40 years Perception FT	Count	31	25	53	109
	%age	28.4%	22.9%	48.6%	100.0%
31-40 years Perception MST	Count	37	33	37	107
	%age	34.6%	30.8%	34.6%	100.0%
41-50 years Perception FT	Count	21	33	65	119
	%age	17.6%	27.7%	54.6%	100.0%
41-50 years Perception MST	Count	37	28	32	97
	%age	38.1%	28.9%	33.0%	100.0%
> 50 years Perception FT	Count	34	33	70	137
	%age	24.8%	24.1%	51.1%	100.0%
> 50 years Perception MST	Count	28	48	40	116
	%age	24.1%	41.4%	34.5%	100.0%
Total Perception FT	Count	118	148	308	574
	%age	20.6%	25.8%	53.7%	100.0%
Total Perception MST	Count	168	184	168	520
	%age	32.3%	35.4%	32.3%	100.0%

$\chi^2 = 15.54, \; v = 8, \; p = 0.049$ (Formal Training) $\chi^2 = 7.74, \; v = 8, \; p = 0.460$ (MST)

Table V75. Differences between total correct scores of linguistic knowledge

SMSLI Definition	Frequency	Percentage	Difference
0 Correct	134	19.1	p<0.0005
1-23 correct	418	59.6	
0 correct	134	19.1	p=0.3052
24-48 correct	149	21.3	
1-24 correct	418	59.6	p<0.0005
24-48 correct	149	21.3	

Table V76. Statistical difference between bands of correct responses on knowledge

Correct Responses	Frequency	%age	Frequency	%age	Differences
0 and 9-16	134	19.1	184	26.2	0.0015
0 and 25-32	134	19.1	97	13.8	0.0076
0 and 33-40	134	19.1	45	6.4	p<0.0005
0 and 41-48	134	19.1	7	1.0	p<0.0005
1-8 and 9-16	106	15.1	184	26.2	p<0.0005
1-8 and 33-40	106	15.1	45	6.4	p<0.0005
1-8 and 41-48	106	15.1	7	1.0	p<0.0005
9-16 and 17-24	184	26.2	128	18.3	0.0004
9-16 and 25-32	184	26.2	97	13.8	p<0.0005
9-16 and 33-40	184	26.2	45	6.4	p<0.0005
9-16 and 41-48	184	26.2	7	1.0	p<0.0005
17-24 and 25-32	128	18.3	97	13.8	0.0219
17-24 and >33	128	18.3	52	7.4	p<0.0005
25-32 and >33	97	13.8	52	7.4	p<0.0005
33-40 and 41-48	45	6.4	7	1.0	p<0.0005

Table V77. Total mean Score of correct responses - comparing FT profiles

Formal Training	Sample Size	Mean Score	SD	P-value	95% Confidence Interval	
					Lower Bound	Upper Bound
B.Ed. (Hons)	37	19.11	10.343		15.66	22.56
B.A.-PGCE	32	19.03	11.831		14.77	23.30
MATC	26	14.42	10.874		10.03	18.82
KG-course	85	10.62	9.221	<0.0005	8.63	12.61
Certificate-LSA	60	13.55	10.375		10.87	16.23
Diploma LSA	68	20.26	10.632		17.69	22.84
Other	240	11.66	9.920		10.40	12.92

Table V78. Mean score compared with number of areas covered during FT

Number of themes	N	Mean Score	Standard Deviation	P-value	95% Confidence Interval	
					Lower Bound	Upper Bound
0-1 areas	276	9.70	9.502		8.57	10.83
2-3 areas	186	14.48	10.677	<0.0005	12.94	16.03
4-7 areas	187	19.06	10.740		17.51	20.61
8-14 areas	52	21.21	12.747		17.66	24.76

Table V79. Comparing respondents' mean correct with average possible scores

Description	Items	Middle	Actual Mean	P-value
Total Score	48	24.0	14.32	<0.0005
MSA examples	10	5.0	2.10	<0.0005
Maltese Phonemes	4	2.0	0.78	<0.0005
English Phonemes	4	2.0	0.63	<0.0005
Maltese Graphemes	4	2.0	0.34	<0.0005
English Graphemes	4	2.0	0.64	<0.0005
English Long Vowels	5	2.5	1.71	<0.0005
English Short Vowels	5	2.5	1.56	<0.0005
English Syllabication	6	3.0	2.67	<0.0005
Maltese Syllabication	6	**3.0**	**3.90**	<0.0005
Eżerċizzju	1	0.5	0.19	<0.0005

Table V80. Total mean score: exposure and non-exposure to MSA during FT

Exposure to MSA	Sample Size	Mean	SD	P-value	95% Confidence Interval	
					Lower Bound	Upper Bound
Not exposed during FT	417	12.42	10.976	<0.0005	11.37	13.48
Exposed during FT	284	17.11	11.025		15.82	18.39

Table V81. Total mean score: exposure and non-exposure to Adams' Model

Interconnectionist Model of reading	Sample Size	Mean	SD	P-value	95% Confidence Interval	
					Lower Bound	Upper Bound
Not exposed during FT	680	14.11	11.069	0.005	13.28	14.95
Exposed during FT	21	21.05	14.225		14.57	27.52

Table V82. Profile of correct responses of 10 SMSLI examples requested:

Total score for correct responses	Frequency	Percentage
Did not answer	136	19.40
0	196	27.96
1	69	9.84
2	57	8.13
3	50	7.13
4	52	7.42
5	42	5.99
6	33	4.71
7	29	4.14
8	19	2.71
9	13	1.85
10	5	0.71

Table V83. Differences across total mean scores of linguistic knowledge

Total Score	Frequency	%age	Total Score	Frequency	%age	Difference
No Answer	136	19.40	0	196	27.96	0.0002
0	196	27.96	1 -4	228	32.52	0.0634
1-4	228	32.52	5-6	75	10.70	<0.0005
1-4	228	32.52	7-10	66	9.42	<0.0005
5-6	75	10.70	7-10	66	9.42	0.4258

Table V84. Total score of SMSLI examples analyzed compared across profession

Number of correct examples	Response	KGAs	Teachers	LSAs	TOTAL
0 Examples 1 correct	Count	220	50	57	327
	%age	76.4%	20.2%	36.5%	47.3%
1-4 Examples correct	Count	53	111	62	226
	%age	18.4%	44.9%	39.7%	32.7%
5-7 Examples correct	Count	10	62	30	102
	%age	3.5%	25.1%	19.2%	14.8%
8-10 Examples correct	Count	5	24	7	36
	%age	1.7%	9.7%	4.5%	5.2%
Total	Count	288	247	156	691
	%age	100.0%	100.0%	100.0%	100.0%

$\chi 2 = 186.53; v = 6; p < 0.0005$

Figure V17. Correct examples analyzed compared across professions
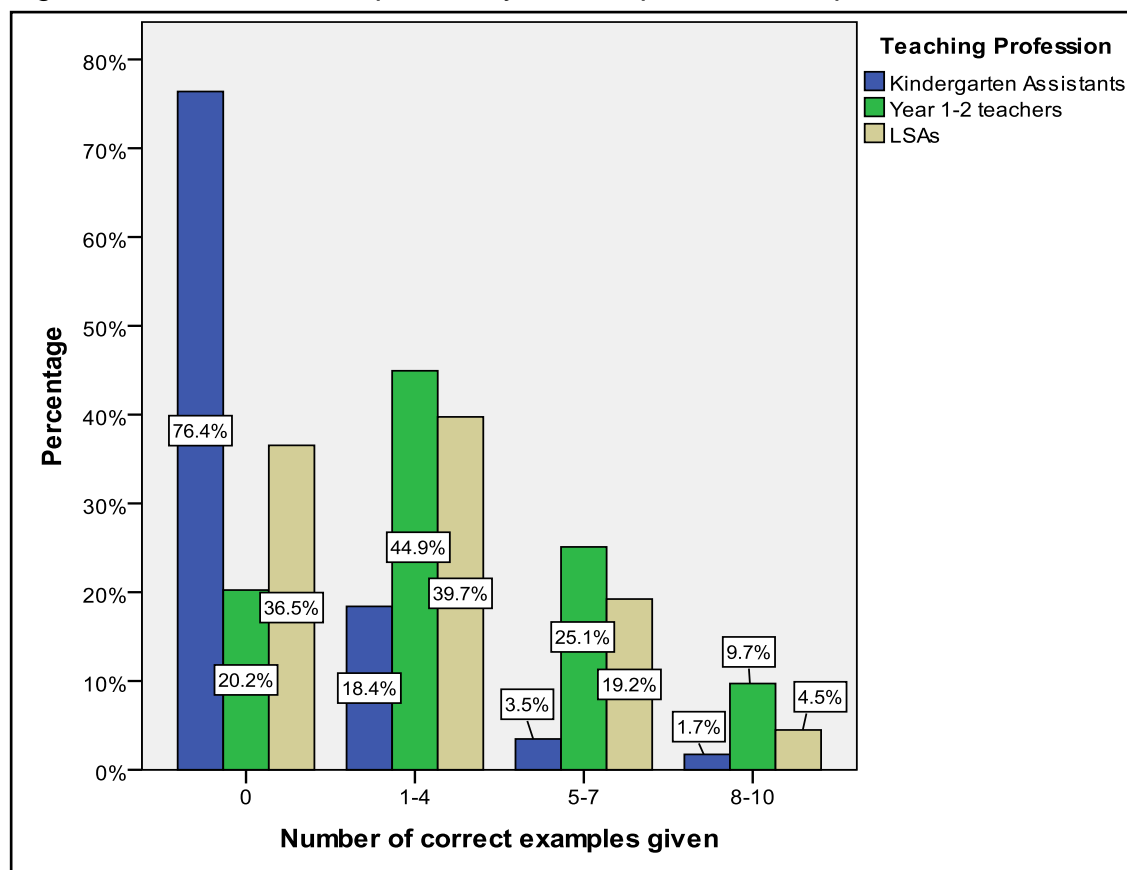
$$\chi^2 = 186.53; \; v = 6; \; p < 0.0005$$

Table V85. Total score of SMSLI examples analyzed compared across FT profile

Formal Training	Score	Number of correct examples given				
		0 correct	1-4 correct	5-7 correct	8-10 correct	Total
B.Ed (Hons)	Count	4	19	10	4	37
	%age	10.8%	51.4%	27.0%	10.8%	100.0%
B.A.-PGCE	Count	9	11	10	2	32
	%age	28.1%	34.4%	31.3%	6.3%	100.0%
MATC	Count	12	7	7	0	26
	%age	46.2%	26.9%	26.9%	.0%	100.0%
KG-course	Count	56	22	6	1	85
	%age	65.9%	25.9%	7.1%	1.2%	100.0%
Certificate-LSA	Count	25	21	12	2	60
	%age	41.7%	35.0%	20.0%	3.3%	100.0%
Diploma LSA	Count	14	31	16	7	68
	%age	20.6%	45.6%	23.5%	10.3%	100.0%
Other	Count	155	64	16	5	240
	%age	64.6%	26.7%	6.7%	2.1%	100.0%
Total	Count	275	175	77	21	548
	%age	50.2%	31.9%	14.1%	3.8%	100.0%

$$\chi 2 = 102.77; v = 18; p < 0.0005$$

Figure V18. Total score of correct examples analyzed compared across FT profile
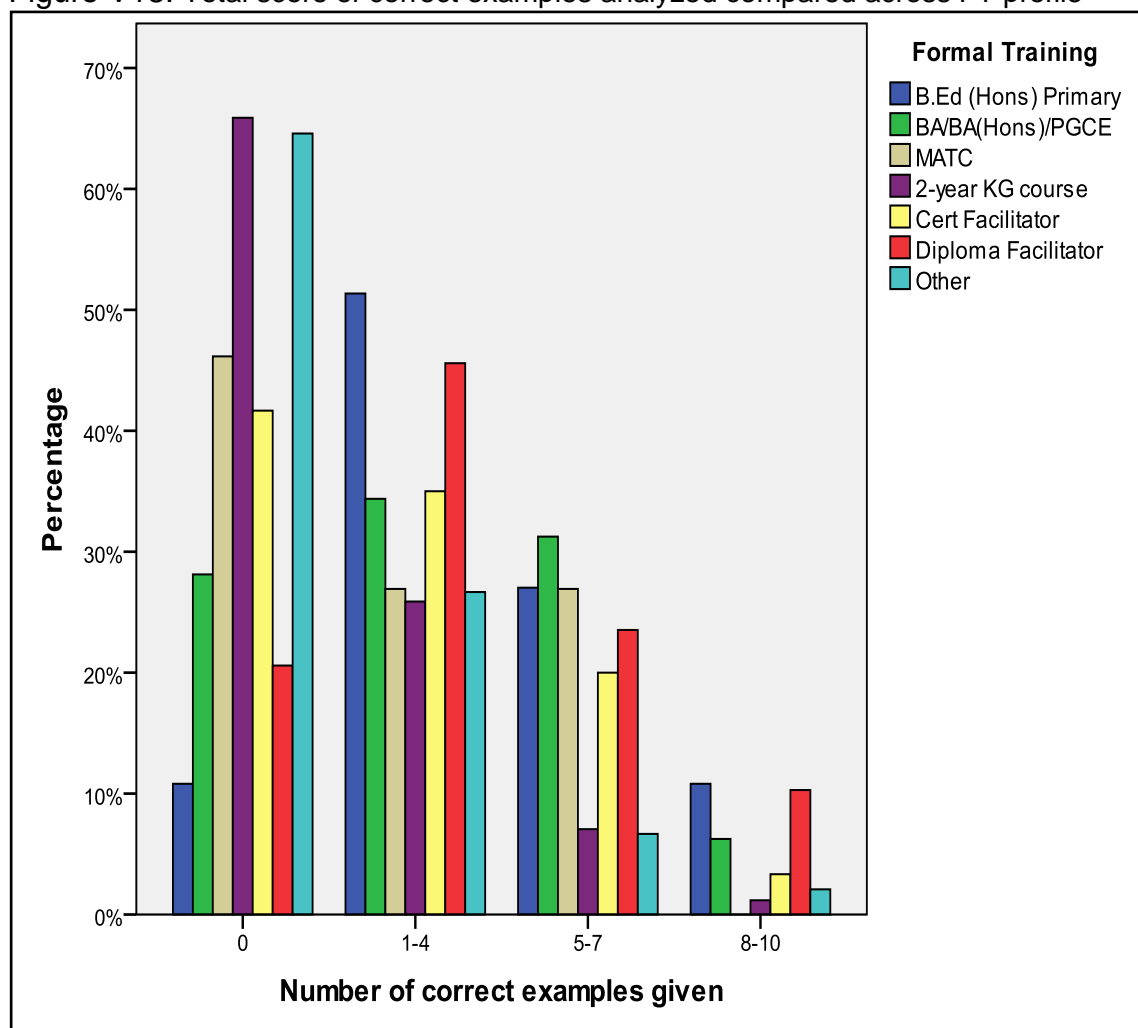
$\chi^2 = 102.77; \ v = 18; \ p < 0.0005$

Table V86. Comparing total ms of ten examples: MSA exposure and non-exposure

Exposure to MSA		0 score		1-4		5-7		8-10	
Dip. LSA	78.8	B.Ed. (Hons)	10.8	B.Ed. (Hons)	51.4	BA-PGCE	31.3	B.Ed. (Hons)	10.8
Cert. LSA	63.0	Dip. LSA	20.6	Dip. LSA	45.6	B.Ed. (Hons)	27.0	Dip. LSA	10.3
KGA	52.4	BA-PGCE	28.1	Cert. LSA	35.0	MATC	26.9	BA-PGCE	6.3
B.Ed. (Hons)	51.4	Cert. LSA	41.7	BA-PGCE	34.4	Dip. LSA	23.5	Cert. LSA	3.3
BA-PGCE	47.8	MATC	46.2	MATC	26.9	Cert. LSA	20.0	Other	2.1
Other	44.0	Other	64.6	Other	26.7	Other	6.7	KGA	1.2
MATC	19.0	KGA	65.9	KGA	25.9	KGA	7.1	MATC	0.0

Table V87. The ten SMSLI examples: Presentation of scores

Examples of SMSLI	Response	Correct	Incorrect	Not answered
Consonant Blend	Count	246	83	372
	Percentage	35.1%	11.8%	53.1%
Magic-E rule	Count	219	46	436
	Percentage	31.2%	6.6%	62.2%
Long and Short Vowels	Count	183	162	356
	Percentage	26.1%	23.1%	50.8%
Digraph	Count	178	36	487
	Percentage	25.4%	5.1%	69.5%
Onset and Rime	Count	124	85	492
	Percentage	17.7%	12.1%	70.2%
Phonics	Count	121	264	316
	Percentage	17.3%	37.7%	45.1%
Phonemic Awareness	Count	117	119	465
	Percentage	16.7%	17.0%	66.3%
Phoneme	Count	97	208	396
	Percentage	13.8%	29.7%	56.5%
Phonological Awareness	Count	92	157	452
	Percentage	13.1%	22.4%	64.5%
Grapheme	Count	66	141	494
	Percentage	9.4%	20.1%	70.5%

$\chi^2 = 656.08, \ v = 18, \ p < 0.0005$

Table V88. Rank ordered overview of early literacy knowledge examples

	Correct Example	%	Incorrect example	%	No Example	%
1	Grapheme	9.4	Phonics	37.7	Grapheme	70.5
2	Phonol. Aware.	13.1	Phoneme	29.7	Onset and rime	70.3
3	Phoneme	13.8	Long/short vowels	23.1	Digraph	69.5
4	Phonemic Aware.	16.7	Phonol. Aware.	22.4	Phonemic Aware.	66.3
5	Phonics	17.3	Grapheme	20.1	Phonol. Aware.	64.5
6	Onset and Rime	17.7	Phonemic Aware.	17.0	Magic E Rule	62.2
7	Digraph	25.4	Onset and rime	12.1	Phoneme	56.5
8	Long/short vowels	26.1	Consonant blend	11.8	Consonant Blend	53.1
9	Magic-E Rule	31.2	Magic E Rule	6.6	Long/short vowels	50.8
10	Consonant Blend	35.1	Digraph	5.1	Phonics	45.1

Figure V19. Ten examples of knowledge - frequency of type of responses.
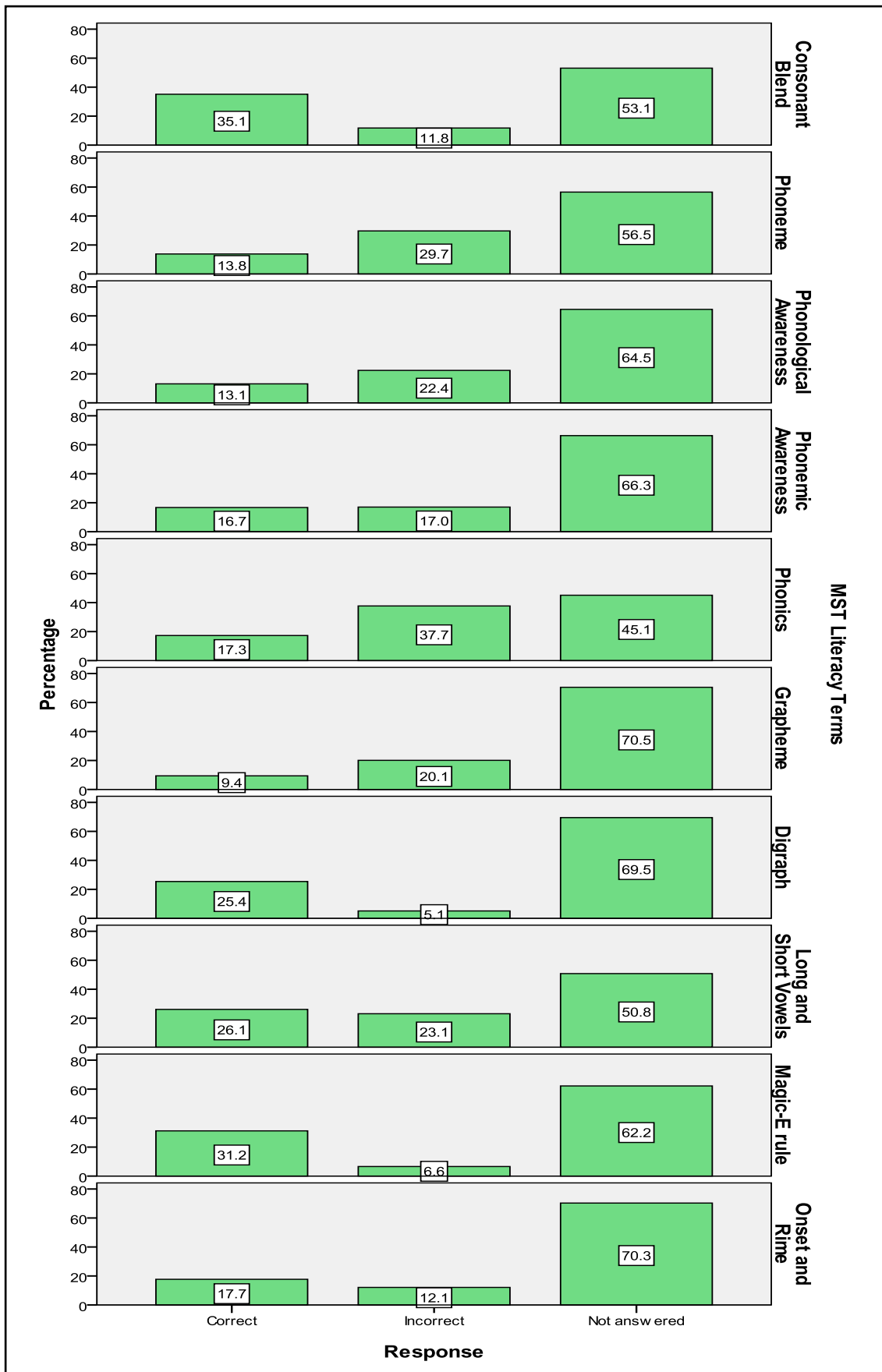
Figure V20. Percentage of correct scores of ten examples requested
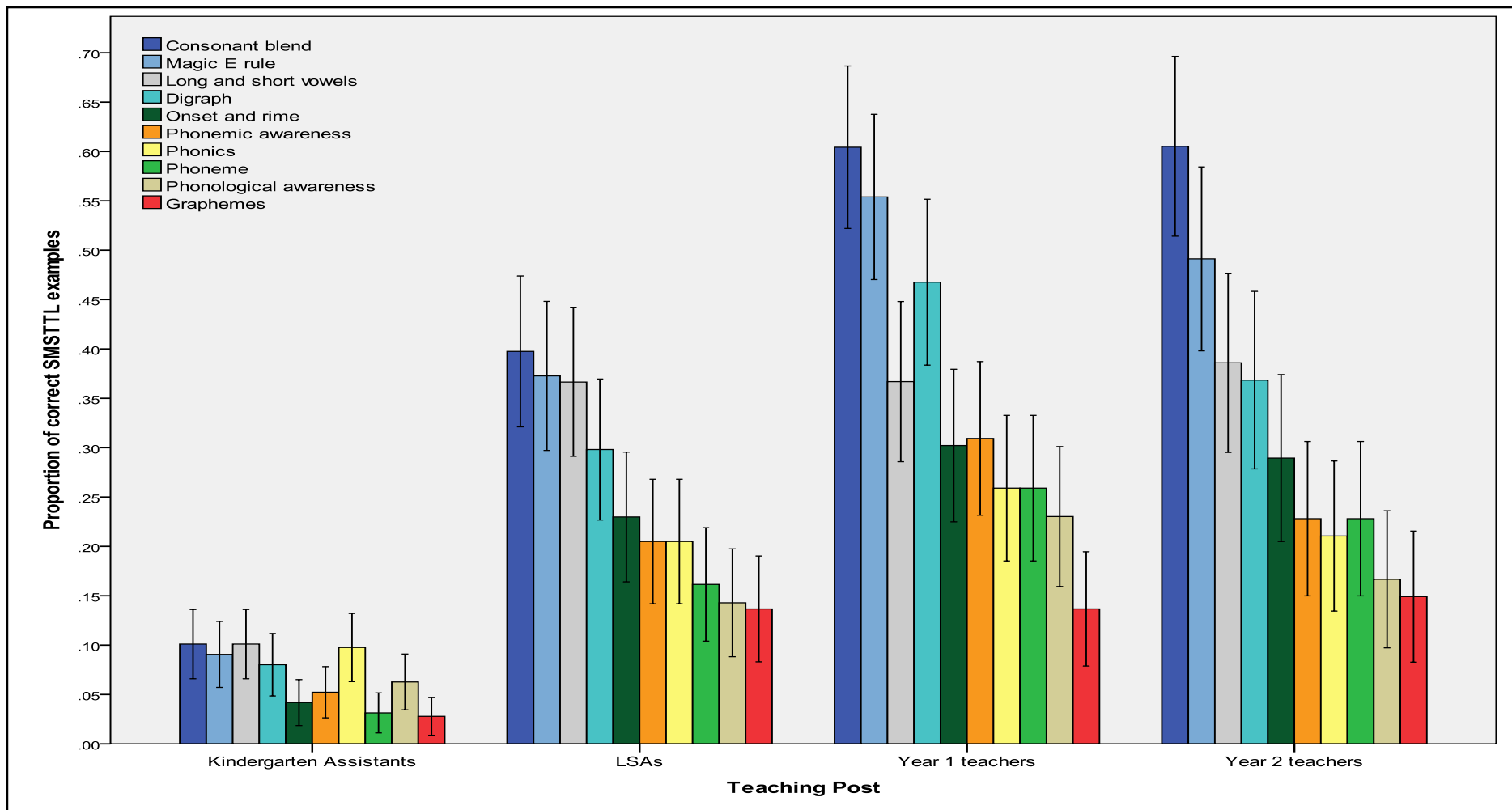
Figure V21. Percentage of correct scores compared across FT profiles
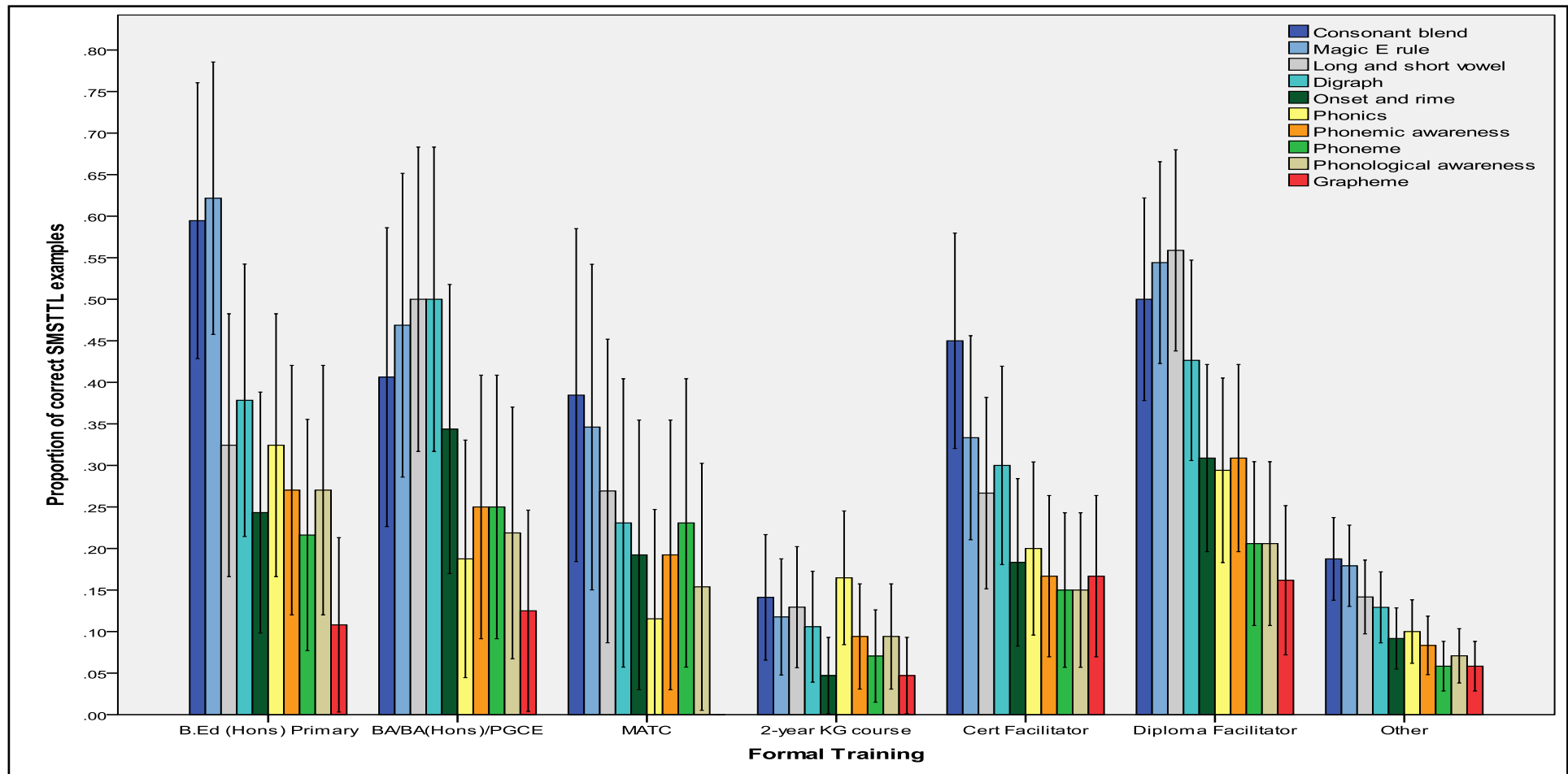
Table V89. Mean scores of linguistic knowledge as related to MSA exposure

Linguistic knowledge		N	Mean Score	Middle Score	SD	P-value	95% Conf. Interval	
							Lower Bound	Upper Bound
Ten Examples	Non-exposure	417	1.62	5	2.446	<0.0005	1.39	1.86
	Exposure	284	2.80	5	2.788		2.47	3.12
Phonemes	Non-exposure	417	1.18	4	2.296	0.003	0.96	1.40
	Exposure	284	1.73	4	2.511		1.43	2.02
Graphemes	Non-exposure	417	0.82	4	1.643	0.005	0.66	0.98
	Exposure	284	1.20	4	1.853		0.98	1.42
Short Vowel	Non-exposure	417	1.33	2.5	1.870	<0.0005	1.15	1.51
	Exposure	284	1.90	2.5	2.137		1.65	2.15
Long Vowel	Non-exposure	417	1.47	3	1.908	<0.0005	1.29	1.66
	Exposure	284	2.05	3	2.109		1.80	2.30
English Syllabication	Non-exposure	417	2.34	3	2.441	<0.0005	2.11	2.58
	Exposure	284	3.16	3	2.281		2.90	3.43
Maltese Syllabication	Non-exposure	417	3.65	3	2.324	<0.0005	3.43	3.88
	Exposure	284	4.27	3	1.823		4.06	4.49

Table V90. Formal Training profiles' mean score of knowledge of phonemes

Phonemes	Mean	SD	95% Confidence Interval		Minimum	Maximum
			Lower	Upper		
B.Ed (Hons)	2.16	2.478	1.34	2.99	0	6
B.A.-PGCE	2.06	2.711	1.08	3.04	0	7
MATC	1.69	2.680	0.61	2.77	0	7
KG-course	0.71	1.882	0.30	1.11	0	7
Certificate-LSA	1.20	2.192	0.63	1.77	0	8
Diploma LSA	2.32	2.970	1.60	3.04	0	8
Other	0.88	1.970	.63	1.13	0	8

$F = 6.399$, $v_1 = 6$, $v_2 = 541$, $p < 0.0005$

Figure V22. Maltese and English phonemes - mean correct scores
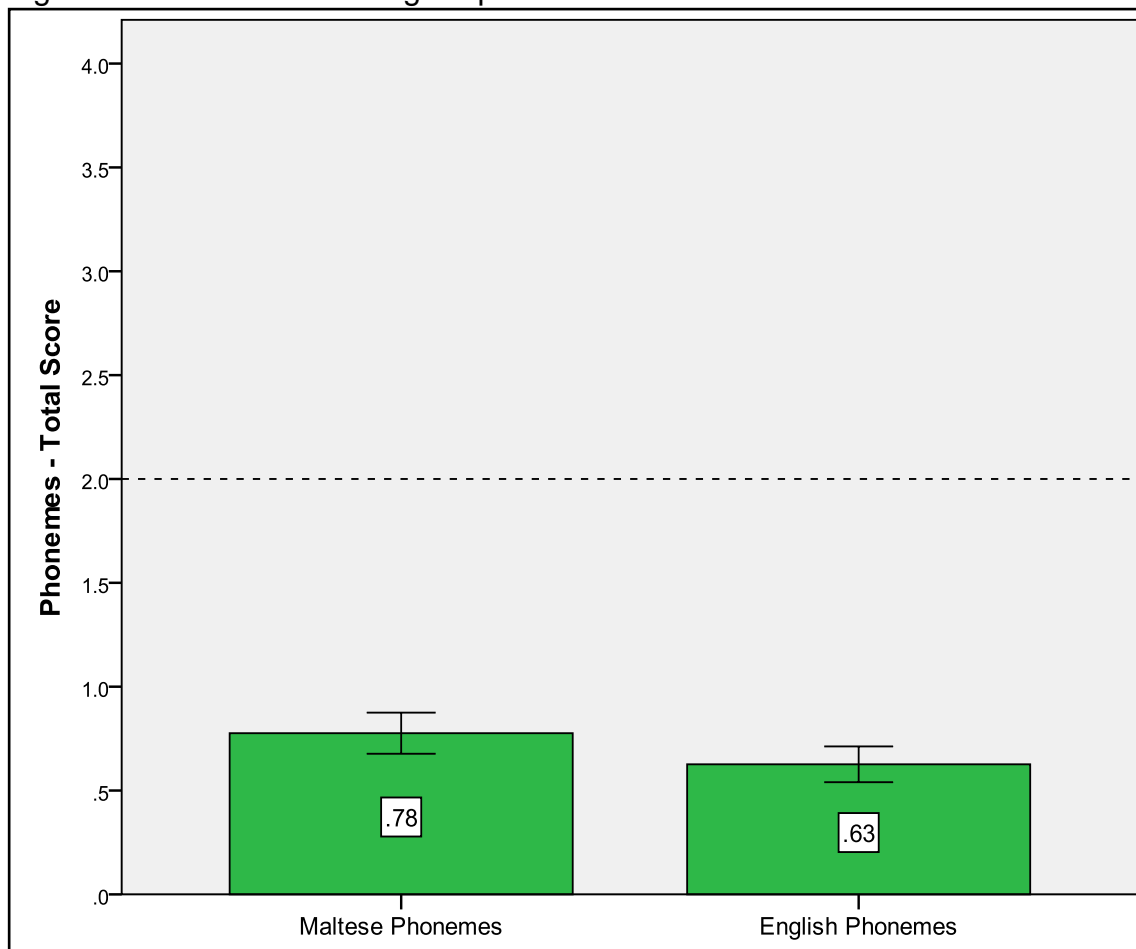
$$F = 5.023, \; v_1 = 1, \; v_2 = 1400, \; p = 0.025$$

Table V91. Maltese phonemes - mean score and MSA exposure

Maltese Phonemes			MSA -not exposed		Exposed to MSA	
Vaska	Correct	Count/%age	90	21.6%	92	32.4%
	Incorrect	Count/%age	18	4.3%	33	11.6%
	No Answer	Count/%age	309	74.1%	159	56.0%
Għasfur	Correct	Count/%age	68	16.3%	69	24.3%
	Incorrect	Count/%age	43	10.3%	59	20.8%
	No Answer	Count/%age	306	73.4%	156	54.9%
Sptar	Correct	Count/%age	79	18.9%	79	27.8%
	Incorrect	Count/%age	30	7.2%	47	16.5%
	No Answer	Count/%age	308	73.9%	158	55.6%
Ngħidlek	Correct	Count/%age	35	8.4%	32	11.3%
	Incorrect	Count/%age	74	17.7%	97	34.2%
	No Answer	Count/%age	308	73.9%	155	54.6%

Table V92. English phonemes - correct score compared with MSA exposure

English Phonemes			MSA -not exposed		Exposed to MSA	
Bridge	Correct	Count//%age	53	12.7%	43	15.1%
	Incorrect	Count /%age	63	15.1%	84	29.6%
	No Answer	Count /%age	301	72.2%	157	55.3%
Fox	Correct	Count /%age	16	3.8%	16	5.6%
	Incorrect	Count /%age	100	24.0%	110	38.7%
	No Answer	Count /%age	301	72.2%	158	55.6%
Sheep	Correct	Count /%age	79	18.9%	93	32.7%
	Incorrect	Count /%age	44	10.6%	42	14.8%
	No Answer	Count /%age	294	70.5%	149	52.5%
Through	Correct	Count /%age	73	17.5%	66	23.2%
	Incorrect	Count /%age	46	11.0%	62	21.8%
	No Answer	Count /%age	298	71.5%	156	54.9%

Table V93. Formal Training profiles' mean score of knowledge of graphemes

Graphemes	Mean	SD	95% Confidence Interval		Minimum	Maximum
			Lower Bound	Upper Bound		
B.Ed (Hons)	1.78	1.917	1.14	2.42	0	6
B.A.-PGCE	1.50	2.185	0.71	2.29	0	6
MATC	0.58	1.419	0.00	1.15	0	5
KG-course	0.49	1.419	0.19	0.80	0	8
Certificate-LSA	0.98	1.652	0.56	1.41	0	5
Diploma LSA	1.59	2.002	1.10	2.07	0	7
Other	0.59	1.429	0.41	0.77	0	7

$F = 7.177,\ v_1 = 6,\ v_2 = 541,\ p < 0.0005$

Table V94. Maltese Graphemes - mean score and MSA exposure

Maltese Graphemes			MSA -not exposed		Exposed to MSA	
Vaska	Correct	Count /%age	80	19.2%	81	28.5%
	Incorrect	Count /%age	13	3.1%	17	6.0%
	No Answer	Count /%age	324	77.7%	186	65.5%
Għasfur	Correct	Count /%age	61	14.6%	59	20.8%
	Incorrect	Count /%age	34	8.2%	43	15.1%
	No Answer	Count /%age	322	77.2%	182	64.1%
Sptar	Correct	Count /%age	76	18.2%	76	26.8%
	Incorrect	Count /%age	16	3.8%	21	7.4%
	No Answer	Count /%age	325	77.9%	187	65.8%
Ngħidlek	Correct	Count /%age	7	1.7%	8	2.8%
	Incorrect	Count /%age	88	21.1%	93	32.7%
	No Answer	Count /%age	322	77.2%	183	64.4%

Table V95. English Graphemes - mean score and MSA exposure

English Graphemes			MSA -not exposed		Exposed to MSA	
Bridge	Correct	Count /%age	7	1.7%	11	3.9%
	Incorrect	Count /%age	89	21.3%	93	32.7%
	No Answer	Count /%age	321	77.0%	180	63.4%
Fox	Correct	Count /%age	80	19.2%	75	26.4%
	Incorrect	Count /%age	14	3.4%	23	8.1%
	No Answer	Count /%age	323	77.5%	186	65.5%
Sheep	Correct	Count /%age	18	4.3%	17	6.0%
	Incorrect	Count /%age	79	18.9%	88	31.0%
	No Answer	Count /%age	320	76.7%	179	63.0%
Through	Correct	Count /%age	14	3.4%	14	4.9%
	Incorrect	Count /%age	83	19.9%	92	32.4%
	No Answer	Count /%age	320	76.7%	178	62.7%

Figure V23. Maltese and English graphemes - mean correct scores
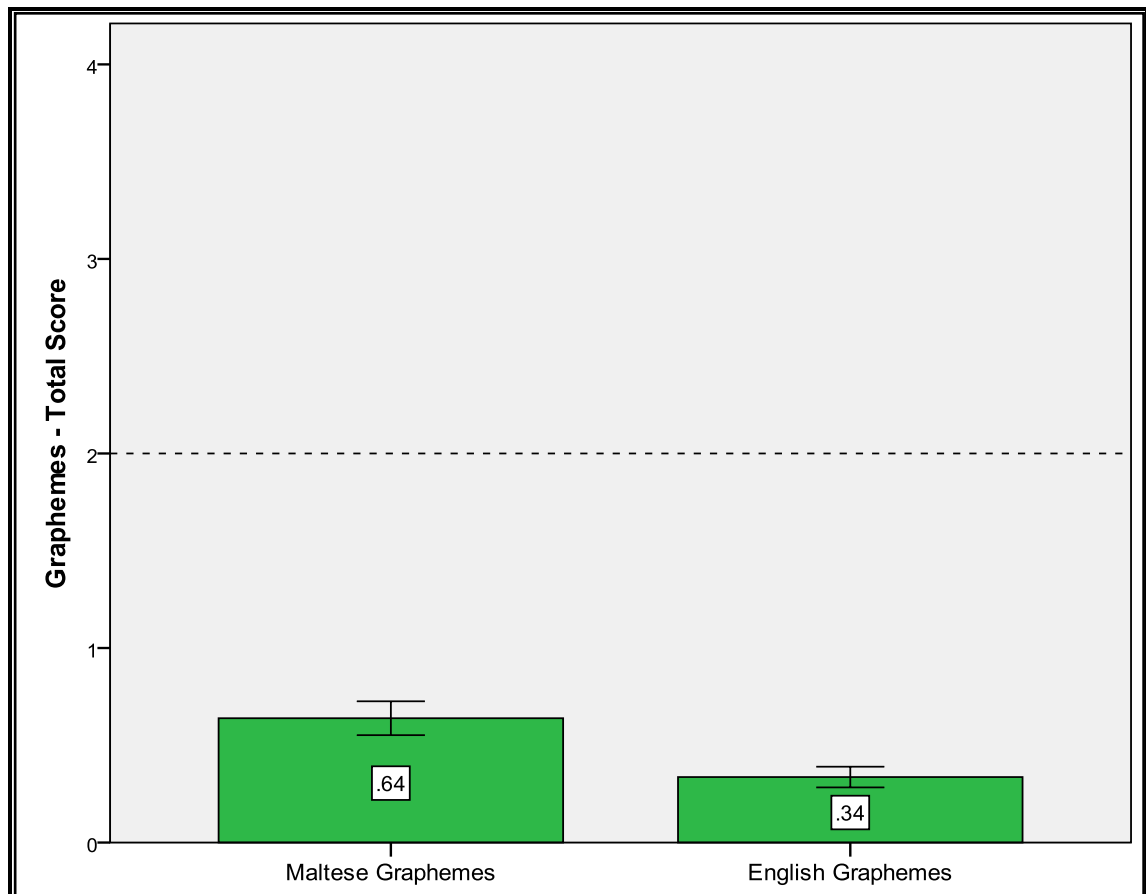
$F = 33.89$, $v_1 = 1$, $v_2 = 1400$, $p < 0.0005$

Figure V24: Comparing knowledge of phonemes/graphemes across languages
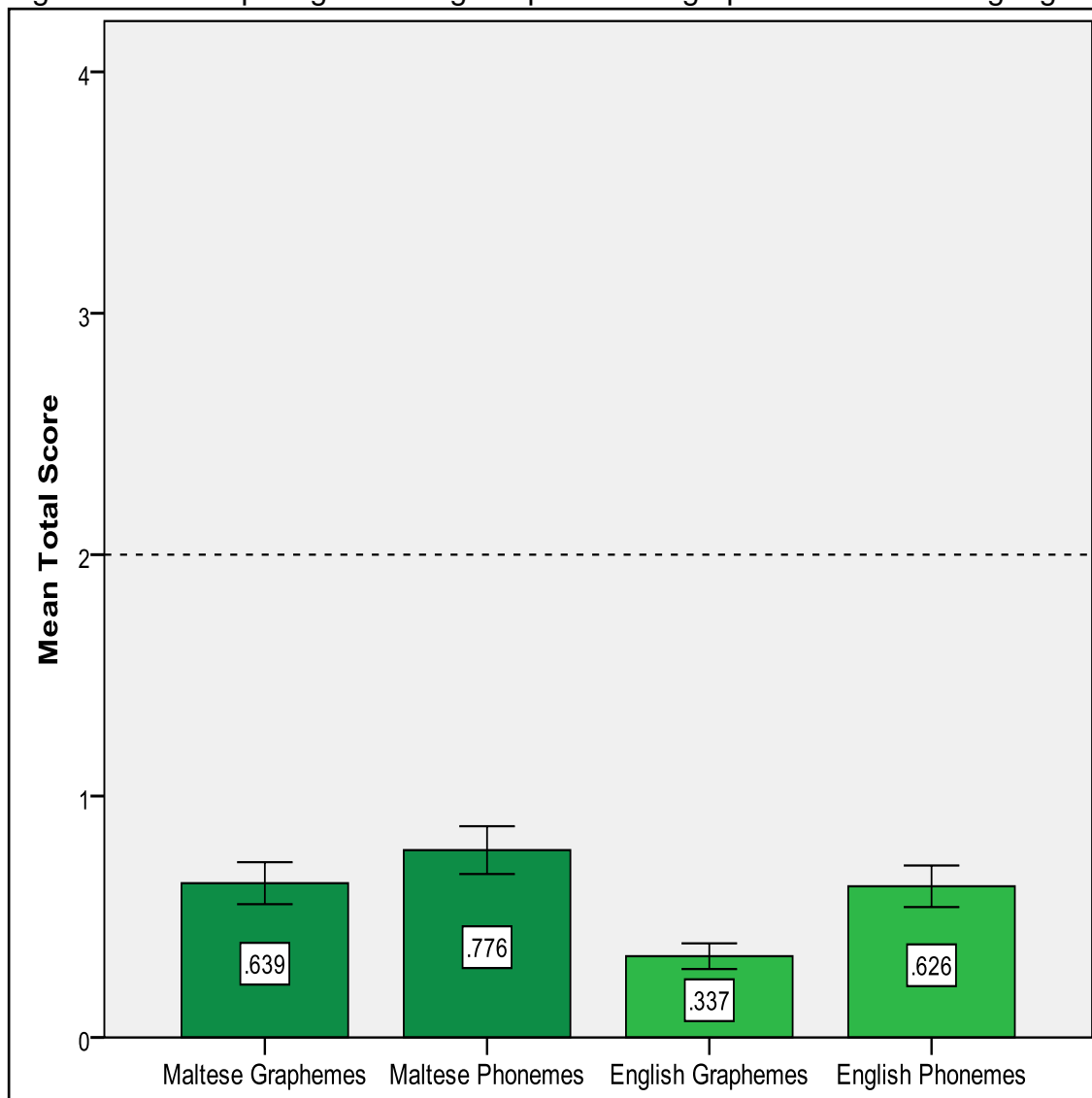
Table V96: Knowledge of graphemes and phonemes (middle score 4)

Profile of formal training	Mean Score Graphemes	Mean Score Phonemes
B.Ed (Hons) Primary	1.78	2.16
B.A.-PGCE	1.50	2.06
MATC	0.58	1.69
KG-course	0.49	0.71
Certificate-LSA	0.98	1.20
Diploma LSA	1.59	2.32
Other	0.59	0.88

Table V97. Short Vowels - mean score and MSA exposure

Indicating Short Vowel			MSA- not exposed		Exposed to MSA	
Meat	Correct	Count / %age	116	27.8%	104	36.6%
	Incorrect		117	28.1%	112	39.4%
	No Answer		184	44.1%	68	23.9%
Apricot	Correct	Count / %age	69	16.5%	89	31.3%
	Incorrect		168	40.3%	127	44.7%
	No Answer		180	43.2%	68	23.9%
Snake	Correct	Count / %age	121	29.0%	116	40.8%
	Incorrect		118	28.3%	100	35.2%
	No Answer		178	42.7%	68	23.9%
Sit	Correct	Count / %age	158	37.9%	134	47.2%
	Incorrect		82	19.7%	79	27.8%
	No Answer		177	42.4%	71	25.0%
Bind	Correct	Count / %age	90	21.6%	96	33.8%
	Incorrect		143	34.3%	114	40.1%
	No Answer		184	44.1%	74	26.1%

Table V98. Long Vowels - mean score and MSA exposure

Indicating Long Vowels			Not exposed to		Exposed to MSA	
Meat	Correct	Count / %age	129	30.9%	114	40.1%
	Incorrect		110	26.4%	103	36.3%
	No Answer		178	42.7%	67	23.6%
Apricot	Correct	Count / %age	78	18.7%	94	33.1%
	Incorrect		163	39.1%	123	43.3%
	No Answer		176	42.2%	67	23.6%
Snake	Correct	Count / %age	151	36.2%	136	47.9%
	Incorrect		89	21.3%	82	28.9%
	No Answer		177	42.4%	66	23.2%
Sit	Correct	Count / %age	156	37.4%	135	47.5%
	Incorrect		86	20.6%	79	27.8%
	No Answer		175	42.0%	70	24.6%
Bind	Correct	Count / %age	100	24.0%	103	36.3%
	Incorrect		135	32.4%	109	38.4%
	No Answer		182	43.6%	72	25.4%

Figure V25. Mean score of knowledge of short vowels across FT profiles
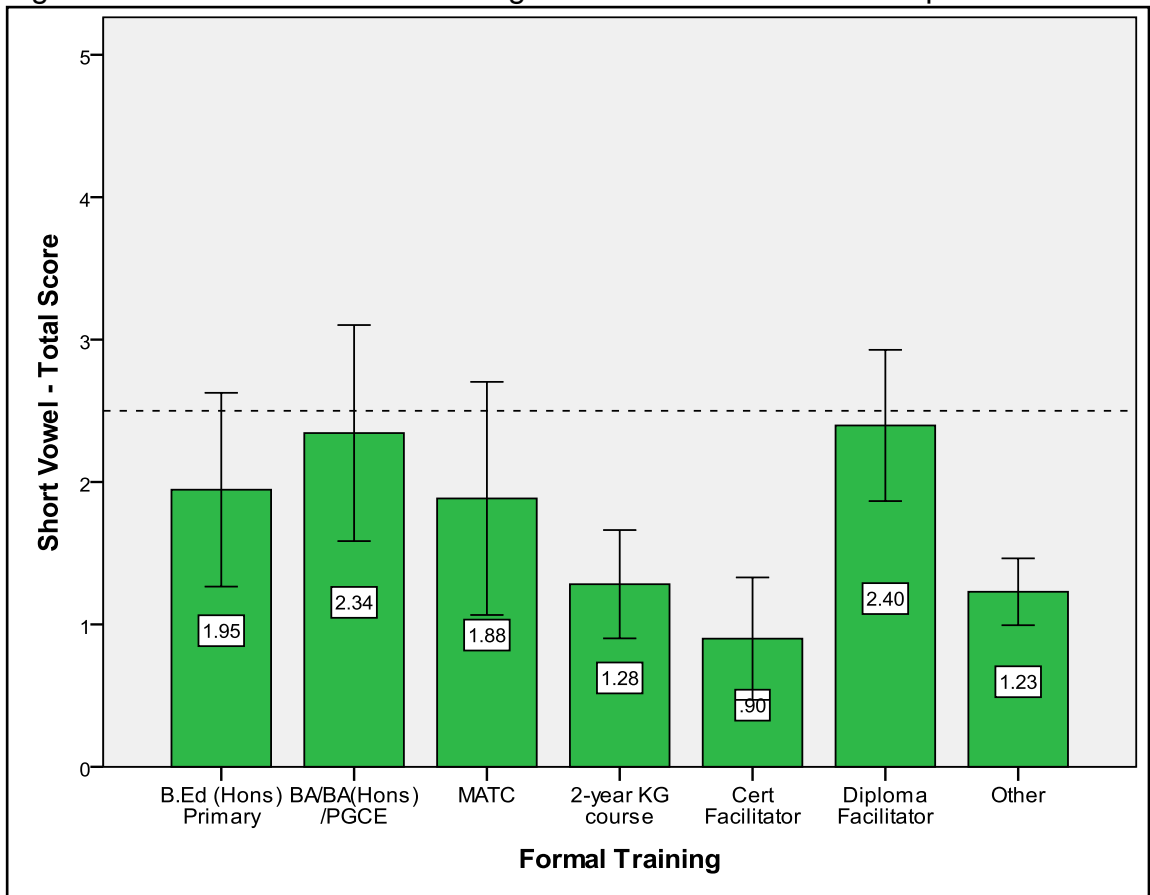
Figure V26. Mean score of knowledge of long vowels across FT profiles

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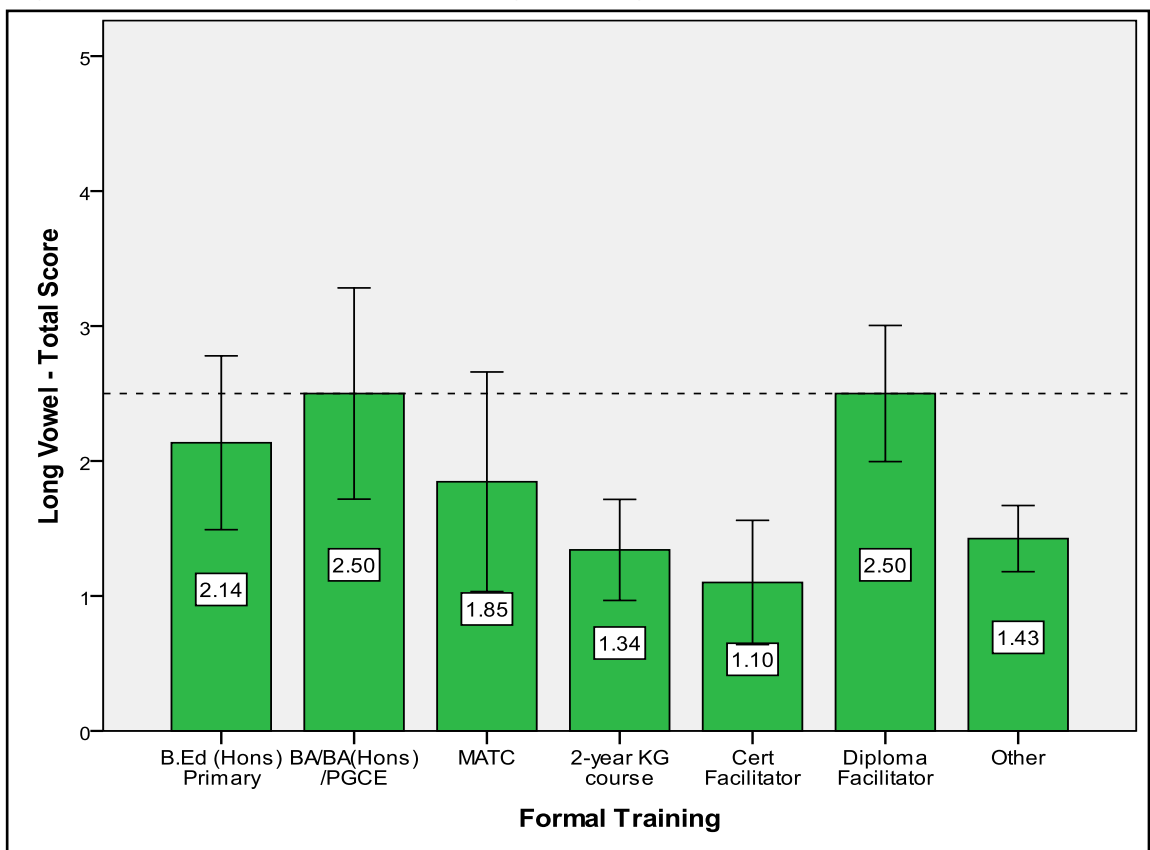
Table V99. Syllabication scores analysed according to language and profession

Language	Language	Mean	SD	P-value
English	KGAs	2.17	2.458	<0.0005
	Year 1-2 teachers	2.93	2.327	
	LSAs	**3.18**	2.295	
	Total	2.67	2.410	
Maltese	KGAs	3.05	2.420	<0.0005
	Year 1-2 teachers	**4.51**	1.767	
	LSAs	4.47	1.644	
	Total	3.90	2.156	
Total	KGAs	2.61	2.477	<0.0005
	Year 1-2 teachers	3.72	2.211	
	LSAs	**3.83**	2.097	

Table V100. Syllabication scores analysed according to profession & language

Language	Language	Mean	SD	P-value
KGAs	English	2.17	2.458	<0.0005
	Maltese	3.05	2.420	
	Total	2.61	2.477	
Teachers	English	2.93	2.327	<0.0005
	Maltese	4.51	1.767	
	Total	3.72	2.211	
LSAs	English	3.18	2.295	<0.0005
	Maltese	4.47	1.644	
	Total	3.83	2.097	
Total	English	2.67	2.410	<0.0005
	Maltese	3.90	2.156	

Table V101. Correct responses for words syllabised

Syllabication Words	Correct		Incorrect		No Answer	
	Frequency	%age	Frequency	%age	Frequency	%age
Meat	349	49.8	65	9.3	287	40.9
Snake	287	40.9	135	19.3	279	39.8
Bind	358	51.1	54	7.7	289	41.2
Apricot	**171**	**24.4**	**281**	**40.1**	**249**	**35.5**
Sit	389	55.5	32	4.6	280	39.9
Table	320	45.6	125	17.8	256	36.6
Kiser	528	75.3	21	3.0	152	21.7
Għidlu	511	72.9	38	5.4	152	21.7
Eżerċizzju	**130**	**18.5**	**418**	**59.6**	**153**	**21.9**
Nagħmel	534	76.2	12	1.7	155	22.1
Karozza	518	73.9	31	4.4	152	21.7
Frugħat	516	73.6	28	4.0	157	22.4

Figure V27. Word syllabication: correct, incorrect and non-response rates
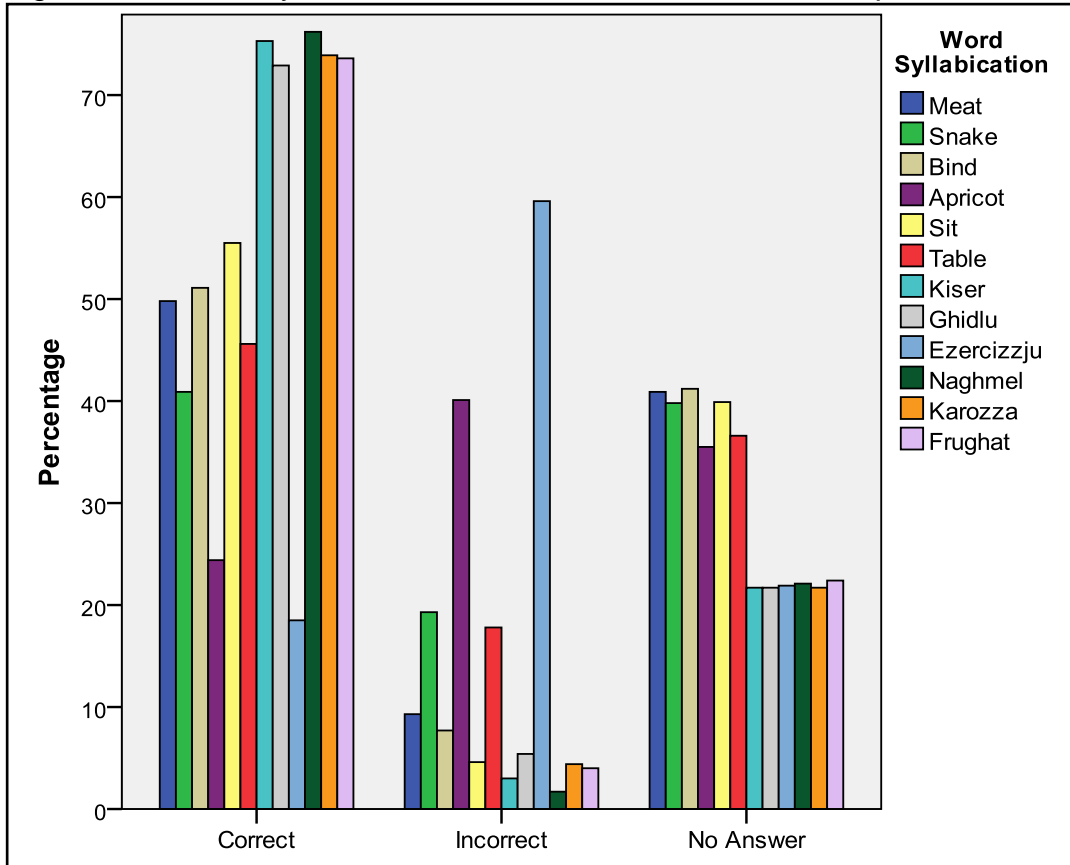
Figure V28. Overview of professionals' correct responses for words syllabised

$\chi^2 = 45.06, \ v = 4, \ p < 0.0005$

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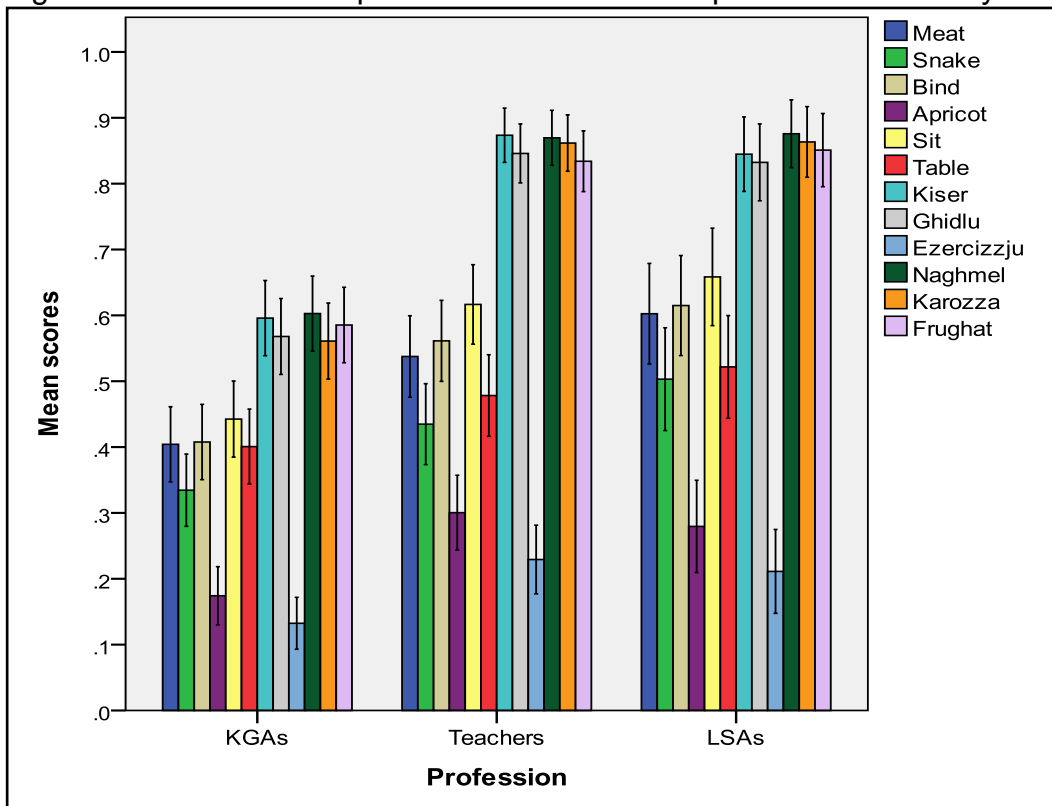
Table V102. Phonological Awareness: perception, use and actual knowledge

| Example | Perception of knowledge | Classroom Practice - Phonological Awareness | | | | | | | |
| | | Practiced | | | | Not practiced | | | |
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	1	5	**43**	2	2	9	10	9
	I don't know	2	1	0	0	0	1	0	0
	No answer	1	0	2	0	1	1	2	0
Incorrect	I know	1	14	**85**	1	2	16	18	8
	I don't know	1	0	0	1	8	1	1	0
	No answer	0	0	3	0	1	0	1	3
No Answer	I know	0	13	33	0	5	14	12	14
	I don't know	4	8	7	1	54	29	5	34
	No answer	1	4	15	7	14	22	9	147

Table V103. Phonemic Awareness: perception, use and actual knowledge

| Example | Perception of knowledge | Classroom Practice - Phonemic Awareness | | | | | | | |
| | | Practiced | | | | Not practiced | | | |
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	0	12	**42**	5	7	9	13	6
	I don't know	0	0	0	0	0	0	0	0
	No answer	0	1	1	0	0	0	0	1
Incorrect	I know	3	16	**87**	6	4	24	21	23
	I don't know	1	2	0	0	1	2	4	2
	No answer	0	1	2	0	0	1	4	4
No Answer	I know	0	4	9	1	3	9	5	4
	I don't know	4	7	6	3	53	38	15	39
	No answer	0	3	8	5	13	19	7	142

Table V104. Phoneme: comparing perception, use and actual knowledge

| Example | Perception of knowledge | Classroom Practice - Phonemes | | | | | | | |
| | | Practiced | | | | Not practiced | | | |
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	1	8	**51**	4	4	10	16	10
	I don't know	1	1	1	1	2	0	1	0
	No answer	0	1	3	0	0	1	1	0
Incorrect	I know	2	14	**55**	3	1	8	10	6
	I don't know	0	0	1	0	0	2	2	0
	No answer	0	0	5	1	0	3	2	4
No Answer	I know	1	10	13	3	7	19	14	14
	I don't know	3	8	4	2	51	34	9	36
	No answer	0	4	12	5	16	25	14	151

Table V105. Phonics Skills: comparing perception, use and actual knowledge

| Example | Perception of knowledge | Classroom Practice – Phonics Skills | | | | | | | |
| | | Practiced | | | | Not practiced | | | |
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	1	9	**74**	6	1	5	6	9
	I don't know	1	0	1	0	1	0	0	0
	No answer	0	0	1	0	1	1	1	3
Incorrect	I know	4	22	**142**	11	11	23	23	17
	I don't know	0	1	2	0	0	0	0	0
	No answer	0	1	2	0	0	2	0	3
No Answer	I know	3	16	44	4	18	17	11	26
	I don't know	1	5	3	0	13	2	0	9
	No answer	3	4	11	15	8	9	10	84

Table V106. Phonics: comparing perception, use and actual knowledge

| Example | Perception of knowledge | Classroom Practice – Use of Phonics | | | | | | | |
| | | Practiced | | | | Not practiced | | | |
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	1	2	**19**	1	1	12	61	14
	I don't know	0	0	1	0	2	0	0	0
	No answer	0	0	0	0	1	1	2	3
Incorrect	I know	0	5	**42**	2	15	40	**123**	26
	I don't know	0	0	1	0	0	1	1	0
	No answer	0	1	0	0	0	2	2	3
No Answer	I know	0	1	13	1	21	32	42	29
	I don't know	0	0	0	0	14	7	3	9
	No answer	0	0	1	1	11	13	20	98

Table V107. Onset and Rime: Comparing perception, use and actual knowledge

| Example | Perception of knowledge | Classroom Practice - Onset and Rime | | | | | | | |
| | | Practiced | | | | Not practiced | | | |
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	3	13	**42**	5	3	16	17	7
	I don't know	0	1	1	0	0	1	3	0
	No answer	1	1	3	1	1	1	3	1
Incorrect	I know	3	6	**31**	3	2	8	10	8
	I don't know	0	0	0	0	0	1	4	0
	No answer	0	0	4	0	0	0	4	1
No Answer	I know	3	3	12	3	3	13	5	8
	I don't know	2	3	4	3	63	49	55	47
	No answer	1	3	5	10	12	17	17	**152**

Table V108. Rule Learning: Magic-E - perception, use and actual knowledge

Example	Perception of knowledge	Classroom Practice – Magic-E Rule							
		Practiced				Not practiced			
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	0	6	**29**	4	29	56	37	39
	I don't know	0	0	2	0	0	2	2	3
	No answer	0	0	0	0	2	4	2	2
Incorrect	I know	0	1	**2**	1	5	15	5	9
	I don't know	0	0	1	0	0	2	0	1
	No answer	0	0	1	0	0	0	2	1
No Answer	I know	0	1	0	1	3	5	3	5
	I don't know	2	2	10	2	43	66	24	55
	No answer	0	1	3	1	9	20	12	**168**

Table V109. Rule Learning: Vowels - perception, use and actual knowledge

Example	Perception of knowledge	Classroom Practice – Long and Short Vowels							
		Practiced				Not practiced			
Perception of adequate preparation:		Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	I know	2	4	**28**	3	19	45	34	30
	I don't know	0	0	0	0	0	1	3	0
	No answer	0	0	0	0	3	2	4	5
Incorrect	I know	0	4	**15**	2	23	49	18	37
	I don't know	0	0	0	0	3	3	1	1
	No answer	0	0	0	0	3	2	0	1
No Answer	I know	0	2	1	0	8	20	13	25
	I don't know	0	1	3	3	24	30	6	36
	No answer	0	0	1	1	8	18	8	**148**

Table V110. Syllabication: Comparing perception, use and actual knowledge

A-pri-cot	Classroom Practice							
	Practiced				Not practiced			
Perception of adequate ...:	Disagree	Unsure	Agree	No Answer	Disagree	Unsure	Agree	No Answer
Correct	1	2	**24**	1	20	55	29	39
Incorrect	1	3	16	7	47	79	43	85
No Answer	0	6	8	1	24	36	15	159
E-żer-ċizz-ju	Classroom Practice							
	Practiced				Not practiced			
Correct	1	3	**12**	2	18	38	16	40
Incorrect	1	6	31	6	67	115	63	129
No Answer	0	2	5	1	6	17	8	114

Table V111. Comparing perceptions, classroom practices and actual knowledge

General Population	Perception of adequate preparation	Used in the Classroom	Perceived knowledge	Correct examples given	Correct answer	At least one item correct	100 % Accuracy	Difference between perception and knowledge
Phonological awareness	52.1%	36.38%	45.2%	Example	13.1%	-	-	<0.0005
Phonemic Awareness	48.5%	32.53%	41.9%	Phonemic Awareness Example	16.7%	-	-	<0.0005
Phoneme	-	-	44.7% - -	Phoneme example Number of Maltese phonemes Number of English phonemes	13.8% - -	- 27.0% 26.5%	- 5.0% 3.1%	<0.0005 - -
Phonics Decoding	64.4% 48.7%	55.21% 29.39%	71.8% 51.2%	Phonics Example Consonant blends example	17.3% 35.1%	- -	- -	<0.0005 <0.0005
Onset and rime	41.2%	24.11%	32.4%	Onset and Rime Example	17.7%	-	-	<0.0005
Grapheme	-	-	23.5% - -	Grapheme example Number of Maltese graphemes Number of English graphemes	9.4% - -	- 24.8% 24.5%	- 1.3% 1.1%	<0.0005
Digraph	-	-	27.7%	Digraph example	25.4%	-	-	0.3298
Syllabication Skills	59.2%	27.82%	- - - 36.5% (rule learning)	Maltese Syllabication English Syllabication Eżerċizzju Syllabication Table Syllabication Apricot Syllabication	- - 18.5% 45.6% 24.4%	78.9% 61.8% - - -	16.7% 13.6% - - -	- - <0.0005 0.0006 <0.0005
Rule Learning	32.4%	9.98%	36.5% 54.5% - -	Magic E rule example Long/Short Vowels examples Short vowels identification Long vowels Identification	31.2% 26.1% - -	- - 43.1% 46.6%	- - 15.5% 14.4%	0.0363 <0.0005

Table V112. Comparing teachers' perceptions, practices and actual knowledge

Teachers	Perception of adequate preparation	Used in the Classroom	Perceived knowledge	Correct examples given	Correct answer	At least one item correct	100 % accuracy	Difference between perception and knowledge
Phonological awareness	70.1%	68.4%	67.2%	Example	20.2%	-	-	<0.0005
Phonemic Awareness	68.2%	60.4%	65.2%	Phonemic Awareness Example	27.3%	-	-	<0.0005
Phoneme	-	-	77.1%	Phoneme example Number of Maltese phonemes Number of English phonemes	24.5% - -	- 44.3% 44.3%	- 5.5% 4.3%	<0.0005
Phonics Decoding	81.4% 72.9%	84.4% 66.2%	85.0% 79.8 (C.Bl)	Phonics Example Consonant blends example	23.7% 60.5%	- -	- -	<0.0005
Onset and rime	53.0%	46.0%	49.8%	Onset and Rime Example	29.6%5555	-	-	<0.0005
Grapheme	-	-	37.2%	Grapheme example Number of Maltese graphemes Number of English graphemes	14.2%	- 39.1% 39.1%	- 2.0% 1.2%	<0.0005
Digraph	-	-	48.2%	Digraph example	42.3%	-	-	0.1831
Syllabication Skills	71.9%	48.8%	- - - 59.7% (rule learning)	Maltese Syllabication English Syllabication Eżerċizzju Syllabication Table Syllabication Apricot Syllabication	- - 22.9% 47.8% 30.0%	88.5% 68.8% - - -	22.1% 12.6% - - -	- - <0.0005 0.0075 <0.0005
Rule Learning	38.3%	18.0%	59.7%	Magic E rule example	52.6%	-	-	0.1082
			74.3%	Long/Short Vowels examples Short vowels identification Long vowels Identification	37.5% - -	- 60.9% 56.9%	- 23.7% 24.1%	<0.0005

Table V113. Comparing LSAs' perceptions, practices and actual knowledge

LSA	Perception of adequate preparation	Used in the Classroom	Perceived knowledge	Correct examples given	Correct answer	At least one item correct	100 % Accuracy	Difference between perception and knowledge
Phonological awareness	41.2%	35.8%	52.2%	Example given	14.3%	-	-	<0.0005
Phonemic Awareness	31.0%	35.0%	50.9%	Example given	20.5%	-	-	<0.0005
Phoneme			50.3%	Example given Number of Maltese phonemes Number of English phonemes	16.1% - -	- 30.4% 28.6%	- 9.9% 6.2%	<0.0005
Phonics Decoding	54.5% 33.6%	63.5% 27.7%	83.2% 61.5(C. Bl.)	Phonics Example Consonant blends example	20.5% 39.8%	- -	- -	0.0001
Onset and rime	31.2%	19.7%	41.0%	Onset and Rime Example	23.0%	-	-	0.0006
Grapheme	-	-	31.1% - -	Grapheme example Number of Maltese graphemes Number of English graphemes	13.7% - -	- 30.4% 30.8%	- 1.2% 1.2%	0.0002
Digraph			31.1%	Digraph example	29.8%	-	-	0.8001
Syllabication Skills	58.2%	39.4%	- - - 46.0% (rule learning)	Maltese Syllabication English Syllabication Eżerċizzju Syllabication Table Syllabication Apricot Syllabication	- - 21.3% 52.5% 28.1%	90.1% 73.3% - - -	16.8% 16.1% - - -	- - <0.0005 0.2443 0.0010
Rule learning	30.0%	13.9%	46.0%	Magic-E rule example	37.3%	-	-	0.1143
			64.6%	Long/Short Vowels examples Short vowels identification Long vowels Identification	36.6% - -	- 50.3% 44.1%	- 11.8% 16.1%	<0.0005

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Table V114. Comparing KGAs perceptions practices and actual knowledge

KGAs	Perception of adequate preparation	Used in the Classroom	Perceived knowledge	Correct examples given	Correct answer	At least one item correct	100 % accuracy	Difference between perception and knowledge
Phonological awareness	31.3%	15.2%	22.0%	Example	6.3%	-	-	<0.0005
Phonemic Awareness	31.0%	12.6%	16.4%	Phonemic Awareness Example	5.2%	-	-	<0.0005
Phoneme	-	-	12.9% - -	Phoneme example Number of Maltese phonemes Number of English phonemes	3.1% - -	- 9.8% 9.8%	- 1.7% 0.3%	<0.0005
Phonics Decoding	47.1% 14.0%	38.7% 4.8%	53.7% 20.2% (C.Bl.)	Phonics Example Consonant blends example	9.8% 10.2%	- -	- -	<0.0005 0.0008
Onset and rime	29.3%	11.7%	12.2%	Onset and Rime Example	4.2%	-	-	<0.0005
Grapheme	-	-	7.3%	Grapheme example Number of Maltese graphemes Number of English graphemes	2.8%	- 9.1% 8.7%	- 0.7% 1.0%	0.0141
Digraph	-	-	7.7%	Digraph example	8.0%	-	-	0.8938
Syllabication Skills	34.9%	8.3%	- - - 10.8% (rule learning	Maltese Syllabication English Syllabication Eżerċizzju Syllabication Table Syllabication Apricot Syllabication	- - 13.2% 39.9% 17.4%	64.1% 49.1% - - -	11.8% 12.9% - - -	- - 0.3767 <0.0005 0.0235
Rule learning	23.8%	2.6%	10.8% 31.4% - -	Magic E rule example Long/Short Vowels examples Short vowels identification Long vowels Identification	9.1% 10.1% - -	- - 32.1% 30.3%	- - 7.7% 7.7%	0.4966 <0.0005

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Sample of incorrect answers
Source of definitions: Aaron, Joshi & Quatroche (2008)

1.   <u>Consonant Blend</u>

- Deleting the final sound preceded by a consonant
- Golf
- 'sh'; 'ch'

2.   <u>Example of a phoneme</u>

The basic unit of speech sound that can change a word… English language is said to have about 44 phonemes (p. 303)

- One or more letters = 1 sound (all, ar, g, b, etc..)
- Sounds with more than one symbol – 'ai'
- Letters of the alphabet

3.   <u>Example of a grapheme</u>

A letter or group of letters that stand for one phoneme (p. 300)

- Letter name 'c'
- <u>S</u> h i <u>p</u> has four graphemes
- The letter of the alphabet e.g. 'd'
- Shape of letter

4.   <u>Phonological awareness</u>

It includes the ability to   identify and generate rhyming words, identify syllables in words and to manipulate phonemes. An umbrella term that includes phonemic awareness (p. 303)

- Letter sounds (not necessary to know letters)

5.   Phonemic awareness

The ability to differentiate phonemes, the basic sounds of speech

- Letter-sound correspondence
- A cognitive function
- One can spell using sounds

6.   Phonics

Phonics instruction is teaching reading in a way that helps children learn how speech sounds are represented by the letters of the alphabet. In technical terms, it refers to knowledge of the correspondence between phonemes and graphemes (p. 65). Any of the several methods of teaching reading that stresses the relationship between letters and their sounds (p. 303)

- Letter sounds
- Reading sounds

7.   Digraph - two letters representing one sound (e.g. /ph/ /ee/   /ch/)

- fl
- c - at

8.   Long and short Vowels

- B<u>e</u>d and b<u>a</u>d
- a' as in cat; 'e' as in bed

9.   Magic-E Rule

- Tame, horse (silent 'e' at end of word)
- Apple
- Consonant/vowel/consonant as the word 'mat'

10.   Onset and rime

- Onset – same beginning (ham, had, hat); Rime – same ending
- Funny stories with a rhyme

Appendix X
Analysing the syllabication of 'apricot', 'table' and 'eżerċizzju'

Apricot

Respondents found *apricot* most challenging to syllabise from the set of six English words given. Only 24.6% syllabised the word correctly whilst 40.1% syllabised it incorrectly and 35.5% did not attempt to syllabise the word. Significant differences across teaching posts (Table X1) and FT profiles (Table X2) are present. An analysis across teaching posts yields a similar profile of significant differences as noted in Chapter 5, with KGAs performing worst.

Table X1. Apricot - syllabication responses according to teaching post

Teaching Post			KGAs	Teachers	LSAs	TOTAL
Apricot	Correct	Count	50	76	45	171
		%age	17.4%	30.0%	28.0%	24.4%
	Incorrect	Count	94	108	79	281
		%age	32.8%	42.7%	49.1%	40.1%
	No answer	Count	143	69	37	249
		%age	49.8%	27.3%	23.0%	35.5%
Total		Count	287	253	161	701
		%age	100.0%	100.0%	100.0%	100.0%

$\chi^2 = 45.88, \ v = 4, \ p < 0.0005$

Table X2. Apricot - syllabication responses according to formal training

Apricot		Correct	Incorrect	No answer	TOTAL
B.Ed. (Hons) Primary	Count	14	13	10	37
	%age	37.8%	35.1%	27.0%	100.0%
B.A.- PGCE	Count	12	12	8	32
	%age	37.5%	37.5%	25.0%	100.0%
MATC	Count	4	12	10	26
	%age	15.4%	46.2%	38.5%	100.0%
2-year KG course	Count	11	38	36	85
	%age	12.9%	44.7%	42.4%	100.0%
Certificate-LSA	Count	10	34	16	60
	%age	16.7%	56.7%	26.7%	100.0%
Diploma-LSA	Count	24	26	18	68
	%age	35.3%	38.2%	26.5%	100.0%
Count	Count	60	89	91	240
	%age	25.0%	37.1%	37.9%	100.0%
Count	Count	135	224	189	548
	%age	24.6%	40.9%	34.5%	100.0%

$\chi^2 = 26.80, \ v = 12, \ p = 0.008$

An error analysis indicates that one type of error was incurred: grouping the letter /p/ with /a/ syllable (Figure X1 and Table X3). This was mostly found in Certificate-LSAs respondents, and least in the B.Ed. (Hons) Group.

Figure X1. Apricot - Error analysis according to formal training profile
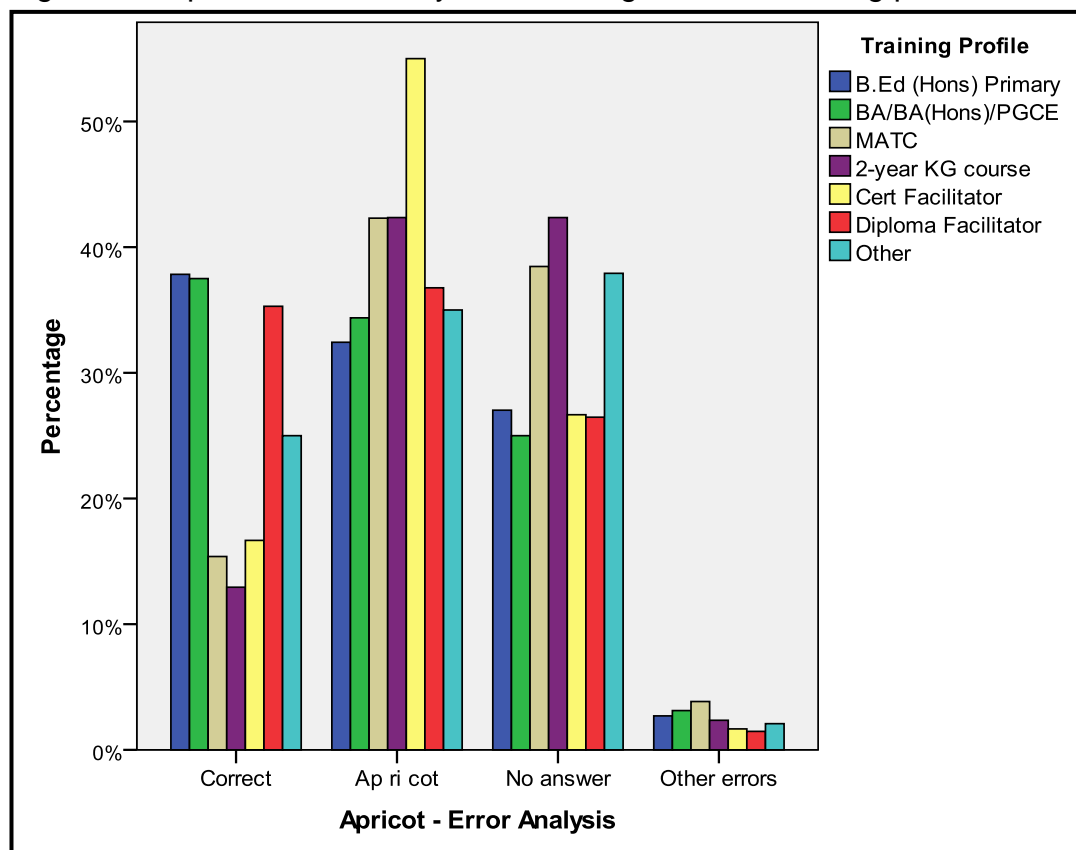
$\chi^2 = 28.01, \ v = 18, \ p = 0.062$

Table X3. Error analysis of Apricot

Apricot		Correct	Ap-ri-cot	No answer	Other errors	TOTAL
B.Ed. (Hons)	Count	14	12	10	1	37
	%age	37.8%	32.4%	27.0%	2.7%	100.0%
B.A.-PGCE	Count	12	11	8	1	32
	%age	37.5%	34.4%	25.0%	3.1%	100.0%
MATC	Count	4	11	10	1	26
	%age	15.4%	42.3%	38.5%	3.8%	100.0%
KG-course	Count	11	36	36	2	85
	%age	12.9%	42.4%	42.4%	2.4%	100.0%
Certificate-LSA	Count	10	33	16	1	60
	%age	16.7%	55.0%	26.7%	1.7%	100.0%
Diploma LSA	Count	24	25	18	1	68
	%age	35.3%	36.8%	26.5%	1.5%	100.0%
Other	Count	60	84	91	5	240
	%age	25.0%	35.0%	37.9%	2.1%	100.0%
Total	Count	135	212	189	12	548
	%age	24.6%	38.7%	34.5%	2.2%	100.0%

$\chi^2 = 28.01, \ v = 18, \ p = 0.062$

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Table

The particular type of difficulty involving the long vowel rule was also observed in incorrect answers to *table* (Table X4 and Figure X2 overleaf). Differences across teaching posts were significant (Table X5), but not significant across FT profiles (Table X6).

Table X4. Table - Syllabication responses according to FT Profile

'Table' Error Analysis		Correct	Tab-le	No answer	Other errors	TOTAL
B.Ed. (Hons) Primary	Count	18	3	11	5	37
	%age	48.6%	8.1%	29.7%	13.5%	100.0%
Count	Count	15	8	9	0	32
	%age	46.9%	25.0%	28.1%	.0%	100.0%
Count	Count	13	1	10	2	26
	%age	50.0%	3.8%	38.5%	7.7%	100.0%
Count	Count	38	9	36	2	85
	%age	44.7%	10.6%	42.4%	2.4%	100.0%
Count	Count	28	12	17	3	60
	%age	46.7%	20.0%	28.3%	5.0%	100.0%
Count	Count	40	8	18	2	68
	%age	58.8%	11.8%	26.5%	2.9%	100.0%
Count	Count	107	34	93	6	240
	%age	44.6%	14.2%	38.8%	2.5%	100.0%
Count	Count	259	75	194	20	548
	%age	47.3%	13.7%	35.4%	3.6%	100.0%

$\chi^2 = 29.74,\ v = 18,\ p = 0.040$

Table X5. Table - syllabication responses according to teaching post

'TABLE' syllabication		KGAs	Teachers	LSAs	TOTAL
Correct	Count	115	121	84	320
	%age	40.1%	47.8%	52.2%	45.6%
Incorrect	Count	27	59	39	125
	%age	9.4%	23.3%	24.2%	17.8%
No answer	Count	145	73	38	256
	%age	50.5%	28.9%	23.6%	36.5%
Total	Count	287	253	161	701
	%age	100.0%	100.0%	100.0%	100.0%

$\chi^2 = 49.94,\ v = 4,\ p < 0.0005$

Figure X2: Table - Error analysis according to formal training profile
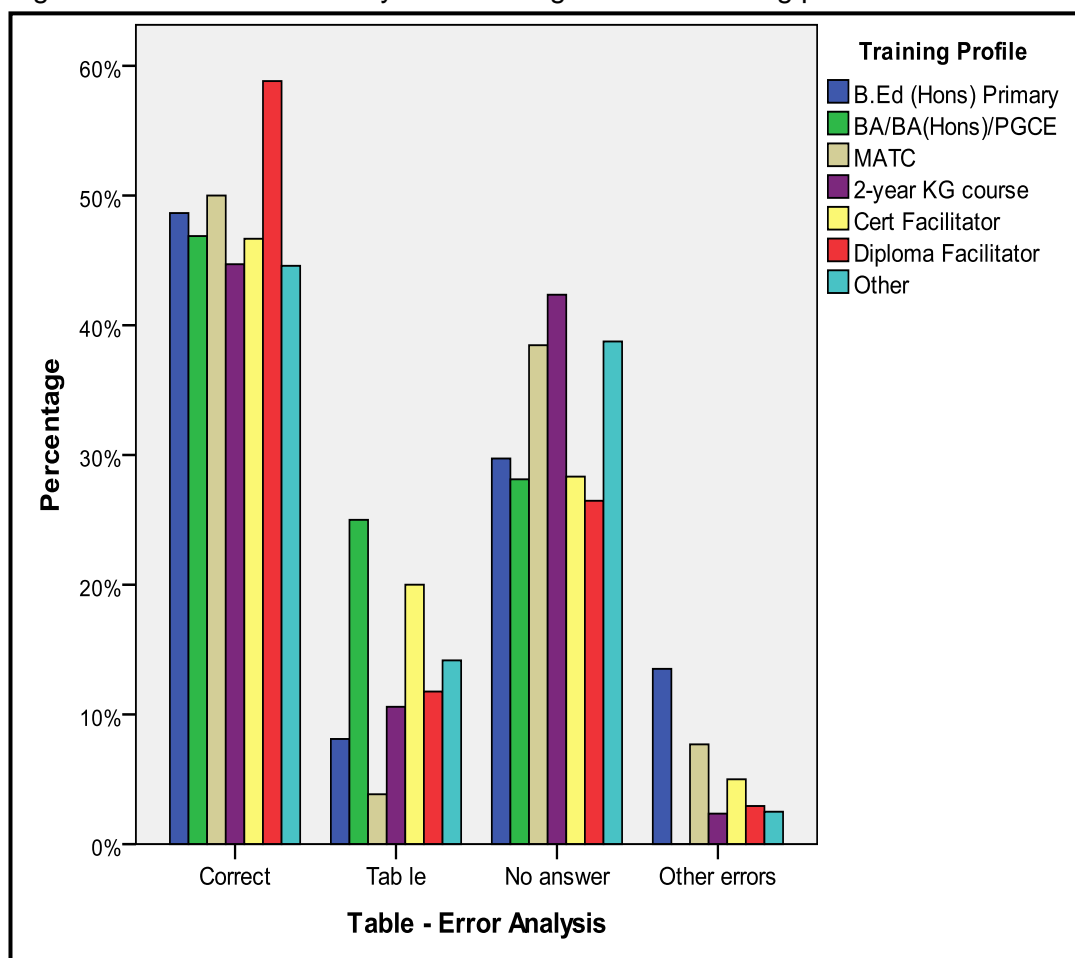
$$\chi^2 = 29.74, \ v = 18, \ p = 0.040$$

Table X6. Table - syllabication responses according to formal training

Table	Response	Correct		Incorrect		No answer		TOTAL	
B.Ed. (Hons)	Count/%age	18	48.6%	8	21.6%	11	29.7%	37	100
B.A.-PGCE	Count/%age	15	46.9%	8	25.0%	9	28.1%	32	100
MATC	Count/%age	13	50.0%	3	11.5%	10	38.5%	26	100
2-year-KG	Count/%age	38	44.7%	11	12.9%	36	42.4%	85	100
Certificate-LSA	Count/%age	28	46.7%	15	25.0%	17	28.3%	60	100
Diploma-LSA	Count/%age	40	58.8%	10	14.7%	18	26.5%	68	100
Other	Count/%age	107	44.6%	40	16.7%	93	38.8%	240	100
Total	Count/%age	259	47.3%	95	17.3%	194	35.4%	548	100

$$\chi^2 = 12.94, \ v = 12, \ p = 0.373$$

Eżerċizzju

Eżerċizzju was the word most respondents found challenging to syllabise generally of the six Maltese words used. Again, this requires a higher level of linguistic knowledge and involves knowledge of linguistic syllabication rules. A detailed analysis of this word indicates that only 16.98% (n=119) syllabised this word correctly, whilst a further 21.97% (n=154) chose not to give an answer. Table X7 indicates that teachers (22.9%), followed by LSAs (21.3%), syllabised this word correctly whilst KGAs did worst (13.2%) and were the ones who most opted not to address this item (36.8%), as has been the pattern generally. Response difference is significant across teaching posts (Table X7) but not significant across FT profiles (Table X8). Teachers' answers indicate that they were mostly not aware of the double consonant rule with regard to a sequence of three consonants and short vowels involved, and were also the least likely not to address this item (Figure X3).

Table X7. Eżerċizzju - syllabication responses according to Teaching Post

Eżerċizzju Syllabication		KGAs	Teachers	LSAs	TOTAL
Correct	Count	38	58	34	130
	%age	13.2%	22.9%	21.1%	18.5%
Incorrect	Count	143	164	111	418
	%age	49.8%	64.8%	68.9%	59.6%
No answer	Count	106	31	16	153
	%age	36.9%	12.3%	9.9%	21.8%
Total	Count	287	253	161	701
	%age	100.0%	100.0%	100.0%	100.0%

$\chi^2 = 66.72, \ v = 4, \ p < 0.0005$

Table X8. Eżerċizzju - syllabication responses according to formal training

Eżerċizzju Syllabication		Correct	Incorrect	No answer	TOTAL
B.Ed. (Hons) Primary	Count	4	27	6	37
	%age	10.8%	73.0%	16.2%	100.0%
B.A.-PGCE	Count	9	18	5	32
	%age	28.1%	56.3%	15.6%	100.0%
MATC	Count	6	15	5	26
	%age	23.1%	57.7%	19.2%	100.0%
2-year KG course	Count	11	50	24	85
	%age	12.9%	58.8%	28.2%	100.0%
Certificate- LSA	Count	12	38	10	60
	%age	20.0%	63.3%	16.7%	100.0%
Diploma-LSA	Count	18	45	5	68
	%age	26.5%	66.2%	7.4%	100.0%
Other	Count	44	138	58	240
	%age	18.3%	57.5%	24.2%	100.0%
Total	Count	104	331	113	548
	%age	19.0%	60.4%	20.6%	100.0%

$\chi^2 = 19.47, \ v = 12, \ p = 0.078$

Although an analysis of the errors across FT profiles indicates no significant difference with regard to type of error (Table X9 and Figure X4), this analysis presents interesting results.   The B.A.-PGCE group answered most correctly (28.1%) followed by Diploma-LSAs (26.5%). Whereas teachers (22.9%) in general achieved the highest number of correct responses (Table X7),   B.Ed. (Hons) primary graduates yielded least correct answers (10.8%) in this item and did worse that their MATC counterparts. Most B.Ed. (Hons) graduates are aware of how to syllabise the first part of the work (*e-żer*) but then over-generalized the double consonant rule and syllabised the last part of the word as if they were hearing the double /z/ sound as in the word '*karozza*'. This infers patchy knowledge leading to incorrect teaching content. Most respondents who followed courses "other" than the formal courses offered on the island opted not to respond, whilst most KG-course respondents syllabised both the first and the third and fourth part of the word incorrectly.

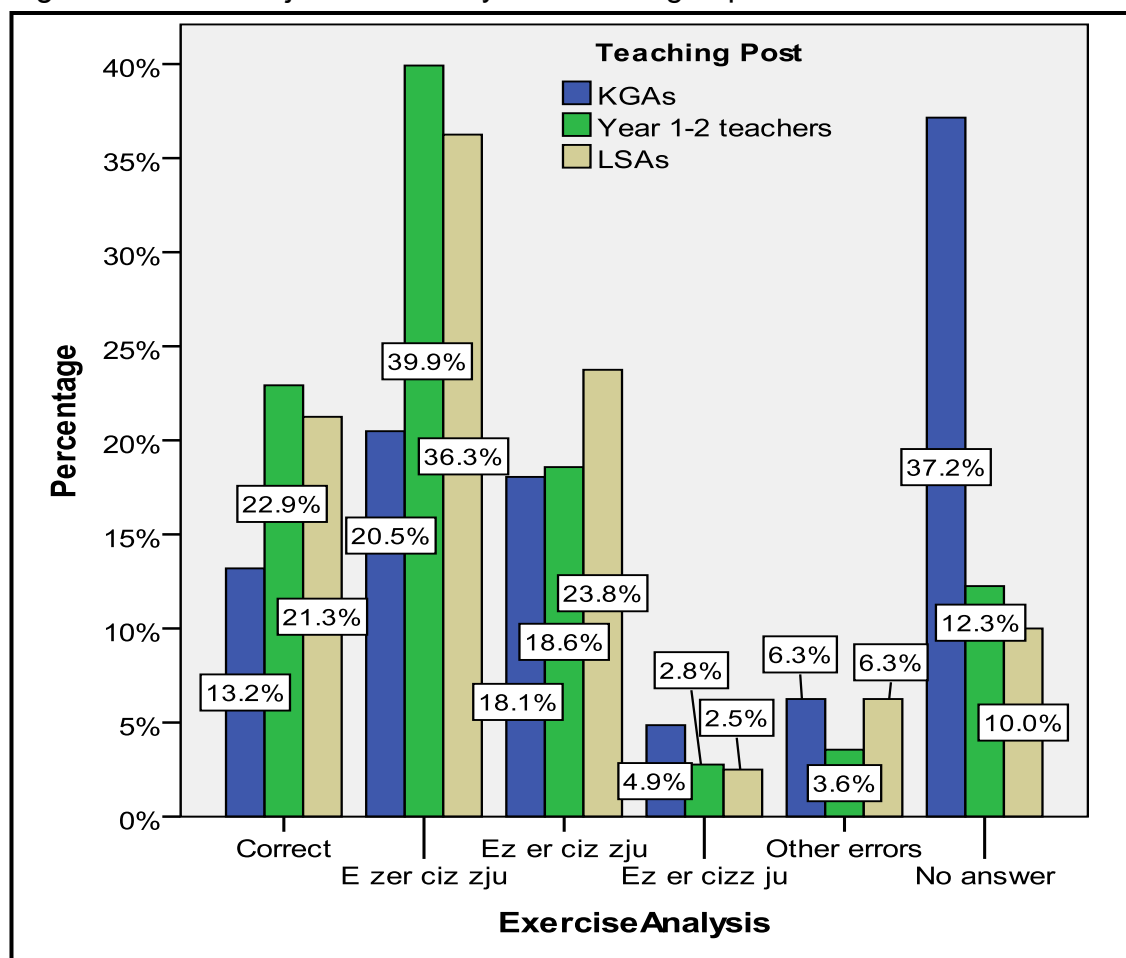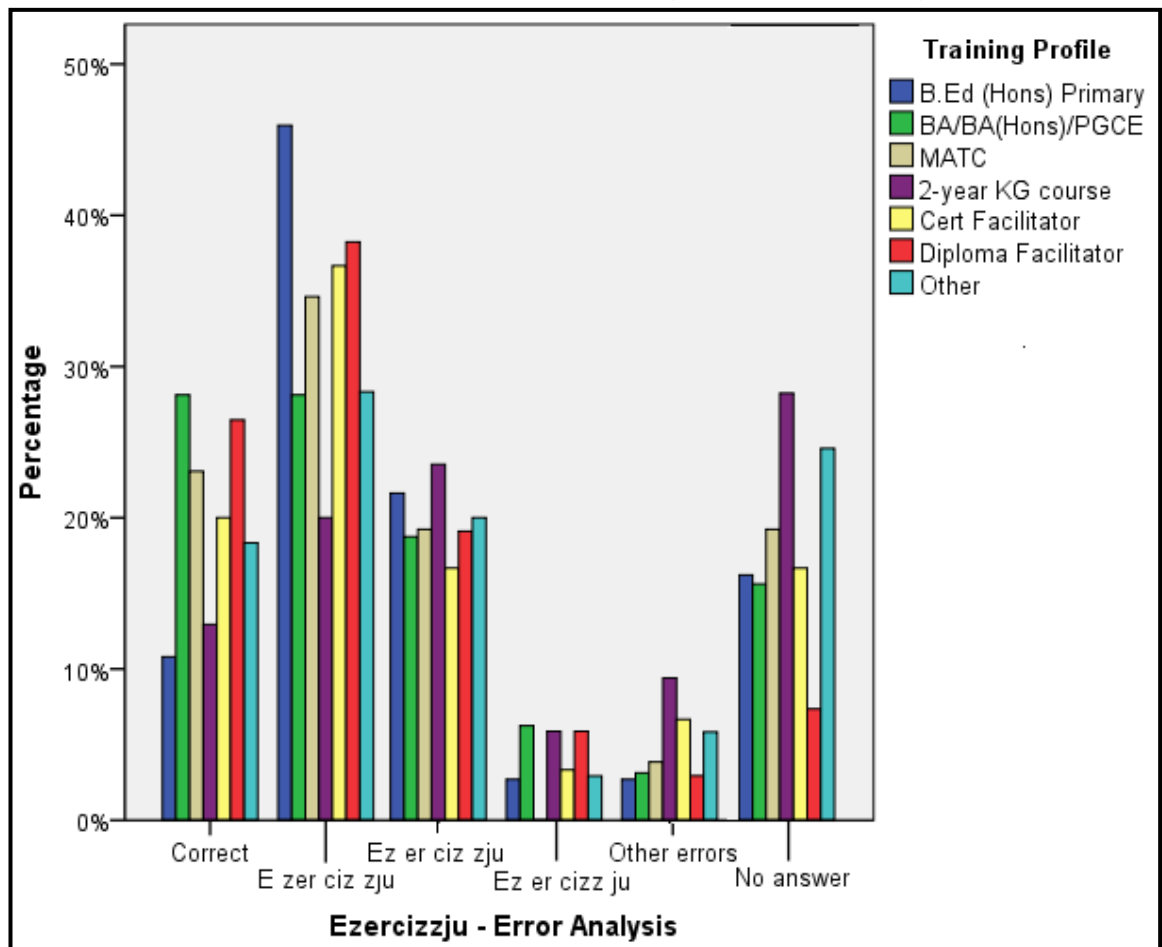Figure X3: Eżerċizzju - Error analysis according to profession

Table X9: Eżerċizzju - Error Analysis according to formal training Profile

Eżerċizzju Error Analysis		Correct	E żer ċiz zju	Eż er ċiz zju	Eż er ċizz ju	Other errors	No answer	TOTAL
B.Ed (Hons)	Coun	4	17	8	1	6	1	37
	%age	10.8%	45.9%	21.6%	2.7%	16.2%	2.7%	100.0%
B.A.-PGCE	Coun	9	9	6	2	5	1	32
	%age	**28.1%**	28.1%	18.8%	6.3%	15.6%	3.1%	100.0%
MATC	Coun	6	9	5	0	5	1	26
	%age	23.1%	34.6%	19.2%	0.0%	19.2%	3.8%	100.0%
KG-course	Coun	11	17	20	5	24	8	85
	%age	12.9%	20.0%	23.5%	5.9%	28.2%	9.4%	100.0%
Certificate-LSA	Coun	12	22	10	2	10	4	60
	%age	20.0%	36.7%	16.7%	3.3%	16.7%	6.7%	100.0%
Diploma LSA	Coun	18	26	13	4	5	2	68
	%age	**26.5%**	38.2%	19.1%	5.9%	7.4%	2.9%	100.0%
Other	Coun	44	68	48	7	59	14	240
	%age	18.3%	28.3%	20.0%	2.9%	24.6%	5.8%	100.0%
Total	Coun	104	168	110	21	114	31	548
	%age	19.0%	30.7%	20.1%	3.8%	20.8%	5.7%	100.0%

$\chi^2 = 35.40, \ v = 30, \ p = 0.228$

Figure X4: Eżerċizzju - Error analysis according to formal training profile

$\chi^2 = 35.40, \ v = 30, \ p = 0.228$