THE WORKING GROUP ON THE FUTURE OF POST-SECONDARY EDUCATION

Report to the Minister for Education and Employment

January 2017

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EXECUTIVE SUMMARY

The Working Group on the future of Post-Secondary Education was convened by the Minister for Education and Employment in 2015 to evaluate the state of play in the post-secondary sector in Malta and Gozo and recommend changes to education policy. This document is primarily aimed at policy-makers.

METHODOLOGY

Long-standing issues within the post-secondary sector need pragmatic recommendations within a framework that can secure consensus from as wide a spectrum of stakeholders as possible. The Working Group levered on the significant field experience of its members to identify long-standing challenges that could be addressed by policy-makers within 24 to 36 months of submission of the report. This report also levers on the results of qualitative focus groups conducted with educators and learners in post-secondary institutions. The views of learners were given particular importance, since it was decided at the outset that it was necessary to adopt a learner-centric approach when discussing challenges and potential solutions. In developing its recommendations, the Working group also accessed research material and sector intelligence from the EU and US, to identify best practices and re-frame these within the local context.

CHALLENGES

This report identifies 13 key challenges that are grouped under five broad headings: Teaching & Learning; Pedagogy; Assessment of Learning; Infrastructure Management and Governance. In practice, many challenges are both transversal and inter-connected.

Table 1 provides a snapshot of a set of challenges to the post-secondary sector.

CHALLENGES TO TEACHING & LEARNING	
Curriculum Vision	
1	One-size-fits-all system of teaching and learning is not fit for purpose
2	Post-secondary represents a critical stage in the lifelong learning journey of young people
3	The formation at post-secondary level should be holistic, and not exclusively academically- and exam-oriented
Curriculum Content	
4	Little Recognition of 21st century skills in the Curriculum
5	MATSEC syllabi are perceived to be too demanding by learners
6	MATSEC syllabi are yet to be re-written within a learning outcomes framework
7	Technology in education is currently focused on ICT and Computer Studies, not digital pedagogy
CHALLENGES TO PEDAGOGY	
8	Lack of Teacher Training and continuing professional development
CHALLENGES TO ASSESSMENT OF LEARNING	
9	MATSEC is a credible, internationally-recognised assessment system which needs to be updated
10	More flexible, modular VET paths need to be developed to assess skills
CHALLENGES IN MANAGING INFRASTRUCTURE	
11	MATSEC Exam schedules put pressure on teachers, students and the MATSEC Examinations Board
12	Teachers need to have support systems in place
CHALLENGES TO GOVERNANCE	
13	There is a need for clarity on the governance of functions relating to curriculum, assessments, certification and service provision

Table 1: Challenges to Post-Secondary Sector

RECOMMENDATIONS

This report makes 26 recommendations that address the challenges identified by the Working Group. All of these require a planned, sustained commitment to a programme of change in the post-secondary sector that goes beyond the development of policy papers and focuses on pragmatic action. *Table 2* lists the recommendations proposed for policy-makers to address within a short timeframe.

	RECOMMENDATION	CHALLENGES ADDRESSED
	PREPARING FOR OWNERSHIP AND COMMUNICATION OF CHANGE	
1	Ensure policy buy-in translates into commitment to implement in sector within prescribed timeframes	All
2	Appoint a Task Force to develop and implement short-term strategy and associated programme	All
	PREPARING FOR CHANGES TO TEACHING AND LEARNING	
	Vision and Objectives	
3	Develop a formal transition plan for all students moving from secondary to post-secondary education	2 and 10
4	Implement changes to the examination model in order to provide a developmental and formative experience at the sixth forms which are academically oriented.	3
5	Facilitate alternative pathways to accommodate the desire of those students who wish to move to and from academic paths to a vocational education stream	1, 9 and 10
	Revisit the stages in learner journey where secondary school students are compelled to select core subjects	1, 2, 6, 9 and 11
6	*Pedagogy & Andragogy – Teaching Methods and Teacher Training*	
7	Address the need for change in the teaching & learning pillar at level 4 to facilitate acquisition of skills	1, 4, 6 and 10
8	Develop training and ongoing professional development for teachers of post-secondary students	8, 11 and 12
9	Embrace technology to align teaching in the class with the needs of 21st century learners	1, 4 and 7
	Curriculum Subject Content, Assessment and Certification	
10	Commission an external expert review of the MATSEC curriculum, focusing on international parity and quality standards	4, 5, 6, 7, 9 and 11
11	Develop and incorporate modular curriculum design and modular assessment into both academic and VET pathways within prescribed timeframes	1, 9 and 11
12	Re-write Advanced & Matriculation syllabi with 21st century skills as basis for Learning Outcomes Framework for sector	1, 3, 4 and 7
13	Use Open Education Resources and MOOCs to redesign and deliver accessible, competency-based curriculum content	1, 4 and 7

14	Focus on reducing risk of early school leaving by offering alternative pathways and solutions	1, 3, 9 and 10
15	Develop programmes that can actively contribute to student pastoral care & socio-development skills	1, 2 and 3
16	Involve learners in the design and testing of post-secondary curricula	1 to 7, 9 and 10
17	Recognise informal and non-formal learning as components of the overall development of students	1, 4, 6 and 10
	PREPARING FOR CHANGES TO INFRASTRUCTURE	
	Resources	
18	Invest in ongoing regular waves of quantitative and qualitative research on the sector	1 to 6
19	Determine Government's position as an employer and contributor to the sector and secure teachers' commitment to change	12
20	Change timing of MATSEC Exams	11
21	Request the University of Malta and MCAST to review entry requirements for all courses	9 and 10
22	Commission internal report to determine available funding regimes to re-engineer Post-Secondary Sector	All
23	Explore possibilities for increasing the number of sixth form colleges in Malta and Gozo	1 to 4
24	Identify suitable pilots for change that can be implemented in short-term	All
	PREPARING FOR CHANGES TO GOVERNANCE	
25	Set up National Commission for General Education (NCGE)	All
26	Restructure and reposition MATSEC into the designated Authority for National Assessments (NAA)	All

Table 2: Recommendations to address challenges in Post-Secondary Sector

INTRODUCTION

This document assesses the state of post-secondary education[1] in Malta and Gozo and makes proposals for changes in Government policy. It represents a vision for learning for people aged between 16 and 18; a collection of recommendations and, most importantly, a call to action. It also offers alternative modes of assessment for adults not able to or unwilling to attend post-secondary courses.

The post-secondary phase is associated with the two years of teaching and learning that immediately follow the end of compulsory education in Malta. The entrance age for students is usually 15 or 16 years. Entrance qualifications on completion of compulsory education and other minimum entry requirements are generally needed. Qualifications at the successful completion of the phase are at Level 4 within the Malta Qualifications Framework. There are about 4,500 students in this stage of education, of whom 45% follow the MATSEC route.

Post-secondary education in Malta is non-compulsory formal learning which takes place at institutions of further education. Instruction is often more subject-oriented than lower secondary education. In the lifelong learning journey of individuals, the post-secondary phase concerns young people typically aged between the ages of 16 and 18 who are pursuing upper secondary education, technical education or foundation education (*see Figure 1*).

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[1] There are several terms that are used by educators and policy-makers to describe the teaching and learning in this critical and formative period in young people's lives, including "higher secondary", "upper secondary" and "further education". Within the context of this report 'post-secondary' is employed as an umbrella item.
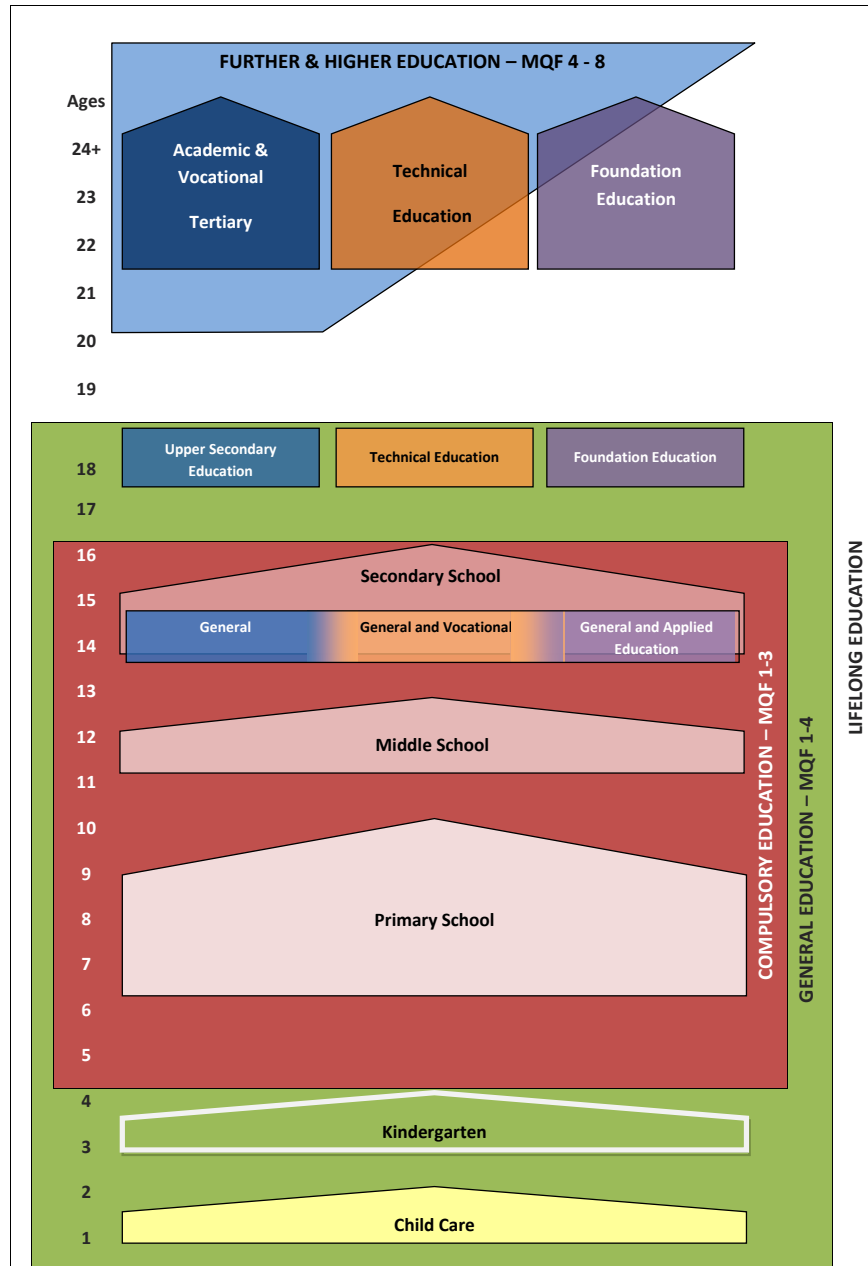
Figure 1: Overview of Lifelong Education

The post-secondary sector includes those students who fail to make the grade, or do not sit for any SEC or Matriculation exam. For the purposes of this report, the primary focus is on the learning that occurs in formal education systems between level 3 and 4 of general education, and students who are attending education institutions (*see Table 3*). The following cohorts are also important, but are *not* within the scope of this report:

A) School leavers aged 16 to18 years who are in employment and not in the education system, and who are learning 'on the job', acquiring knowledge and skills relevant to their employment.

B) Young people aged 16 to 18 years who are inactive.

TYPE OF INSTITUTION	POST-SECONDARY INSTITUTION
Academic Orientation	Junior College De La Salle College St Aloysius College Giovanni Curmi Higher Secondary School Sir MA Refalo St Martin College St Edward's College
Vocational Orientation	MCAST ITS
Second Chance Orientation	GEM16+ Giovanni Curmi Higher Secondary School Lifelong Learning Centre
Job oriented, apprenticeships and other orientation/s	Malta Armed Forces Malta Police Force Jobs+ Private tuition NGOs supporting inclusion, disability sector Private institutions

Table 3: Post-Secondary Institutions in Malta

This report consolidates, crystallises and builds on ideas and processes already taking shape in different organisations and institutions in Malta, such as to ensure a single, coherent place to guide policy in the post-secondary sector. It should be read in conjunction with a number of important national and international documents, some of which are included in *Annex 4* to this report.[2]

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[2] Several national documents have been published in recent years with recommendations that dovetail those in this document. These include:
- Strategic Plan for the Prevention of Early School Leaving (2014)
- Malta National Lifelong Learning Strategy 2020 (2014)
- Two reports commissioned in 2005 and 2010 by Government, assessing MATSEC as a National Examination System and considering alternative systems.

DESIGNING AN ENABLING FRAMEWORK FOR THE POST-SECONDARY SECTOR

This report has been developed at a time when statistics for the sector are not comforting. Although 86% of fifth-formers proceed to post-secondary education, only 56% of these continue to tertiary education. Recent technical studies focusing on learning outcomes in Malta have yet to address the cohort of learners in Malta and Gozo aged between 16 and 18. There is little recent material that can provide policy-makers with a detailed snapshot of the state of play in the sector[3].

The Framework for The Education Strategy for Malta 2014-2024 establishes four broad goals which have implications for young people in the post-secondary education cycle:

1. Reduce the gaps in the educational outcomes between boys and girls and between students attending different schools, decrease the number of low achievers and raise the bar in literacy, numeracy, and science and technology competence, and increase student achievement;

2. Support the educational achievement of children at-risk-of-poverty and from low socio-economic status, and reduce the relatively high incidence of early school-leavers;

3. Increase participation in lifelong learning and adult learning; and

4. Raise the levels of student detainment and attainment in further, vocational, and tertiary education and training.

Levering on these goals, an education system that is fit for purpose for people aged 16 to 18 should incorporate some of the following features, in that it:

- Provides a thorough preparation and "readiness" for learning.

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[3] Comparative EU indicators (source IPTS, 2016):

- 24% of EU population has no upper secondary education diploma
- About 70 million Europeans lack sufficient reading, writing and numeracy skills
- 45% of EU population and 37% of UE labour force have stuffiest digital skills
- 40% of European employers report they cannot get the right people with the right skills

- Provides a right of access for all students to the latest information regarding opportunities and entry requirements and a smooth transition ensured to the chosen (subject) area.

- Understands and recognises individual students' learning capabilities and limitations.

- Provides an individualised approach to learning.

- Recognises that the needs and expectations of the learner are of primary importance to policy-makers and teaching institutions.

- Recognises that not all students will pursue academic routes at the end of the post-secondary period, for a variety of reasons.

- Reduces the risk of early school-leaving by incorporating measures that monitor learner progress and provide educators with the requisite information to enable them to take action to remove barriers to students' progress to higher or vocational education and training or meaningful work.

- Aims to empower all 16 to18 year-old learners, without any differentiation between learners who make it through the current system, and those who do not.

- Recognises that the post-secondary period is necessarily a transitional phase in young people's lives, and therefore requires programmes that are necessarily preparatory in nature - whether for further education or for the labour market.

In July 2016[4], Minister Bartolo spoke about education reform:

"To really be effective, education needs to look at three spheres. First there is education itself: what happens in the classroom and inside schools. Then, we need to look at society as a whole. Lastly, the other sphere which is employment. They are three different worlds, and we have to look at all three of them together. The closer we get them to work together, the better it will be for young people, and for the country as a whole."

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[4] See
http://www.maltatoday.com.mt/news/interview/67861/exam_time_for_the_education_system__evarist_bartolo?utm
_source=dlvr.it&utm_medium=twitter#.V5T_xLh96Uk

SCOPE AND OBJECTIVES

The following were the original terms of reference provided by the Minister to the working group:

PROCESS

- Conduct an analysis of the present provision of education for those over the age of 16 in state and non-state post-secondary institutions
- Conduct a SWOT of current system
- Evaluate present links with secondary schools and tertiary institutions
- Assess rate of enrolment, retention, dropout and success
- Assess role of Level 4 Assessment and MATSEC (Intermediate and Advanced)
- Assess relationship between the education experience and the values of democratic citizenship and community service
- Assess relevance of the curricula for employability
- Evaluate readiness of local young people to be open to Mediterranean, European and global realities
- Examine governance and legal status of post-secondary institutions
- Recommend changes that can improve the future of post-secondary education in Malta and Gozo

DELIVERABLE

Report recommending policies to improve the provision of education for those over age 16 in post-secondary institutions and beyond, in order to prepare citizens to face successfully global challenges of the 21st century.

STAKEHOLDERS

The primary target readership for this report are policy-makers. However, there are several other stakeholders in the post-secondary sector, including:

- Learners

- Educators / Teachers /Administrators

- Parents of Learners

- Social Partners, including the MUT

- Ministry for Education & Employment

- Education Service Providers in both secondary and post-secondary sector, including the Independent Schools Association, the State College Principals, the Church Schools Association

- Regulators & Quality Assurance Providers, including the MATSEC Board and the NCF Implementation Review Board

- The University of Malta, MCAST and ITS

To guide its task, the Working Group decided to deconstruct the terms of reference into a set of pragmatic questions to be addressed during its sessions:

PRIMARY QUESTION:

What learning system and learning opportunities should be in place for all 16-18 year olds in the Maltese Islands?

SUBSIDIARY QUESTIONS:

1. How do we facilitate and encourage personal learning in a mass-learning / single teacher to classroom education system?

2. How can we encourage / facilitate changes in teaching styles?

3. How can the post-secondary education system be more aligned to the individual needs of students?

4. How can we encourage creative thinking and learning when the pressure for accreditation, rankings and the promise of future employment continues to prevail?

5. How can we put technology to good use in students' learning?

6. What do we mean by modular systems?

7. What is stopping the implementation of the recommendation of previous reports on the subject?

8. What can be done to increase the participation rate in post-secondary education?

9. How can we decrease the drop-out rate in all post-secondary institutions?

10. How can we increase the success rate in MATSEC examinations?

11. How do we make an impact on early school-leaving statistics within a short time - for example, reduce it from 20% to 10%?

Post-secondary institutions that provide formal education to 16 to 18-year-olds address a spectrum of needs. Not all of these institutions fall under the Act regulating post-secondary education[5].

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[5]   MCAST has a three-tier structure made up of Foundation, Technical and University Colleges.

APPROACH

The Working Group is aware that long-standing issues within the sector need pragmatic recommendations within a framework that can secure consensus from as wide a spectrum of stakeholders as possible.

Early within the work programme, the Working Group decided that it would:

1) Focus on opportunities for sustainable change within a short timeframe - within 24 to 36 months of publication of the report. Inevitably, this meant adopting a critical approach in assessing the current education system, despite the many merits of the colleges, schools and teachers who operate in the system.

2) Identify the challenges to the sector on the basis of practice - that is, the real-life experiences of the members of the Working Group.

3) Adopt a Learner-centric approach when discussing challenges and potential solutions. The interests of learners are given a priority over those of the institutions established to provide educational services.

4) Give equal weight to the views of learners as to those of educators working within and outside education institutions.

5) Secure some first-hand knowledge of learner views on the sector during the course of the work programme.

6) Consider the views of the education sector as primarily being voiced by the opinions of the members of the Working Group - this being a wide representation of experienced heads of education institutions, social partners and policy-makers.

The Working Group approached its task in the following structured manner (*see Figure 2*):
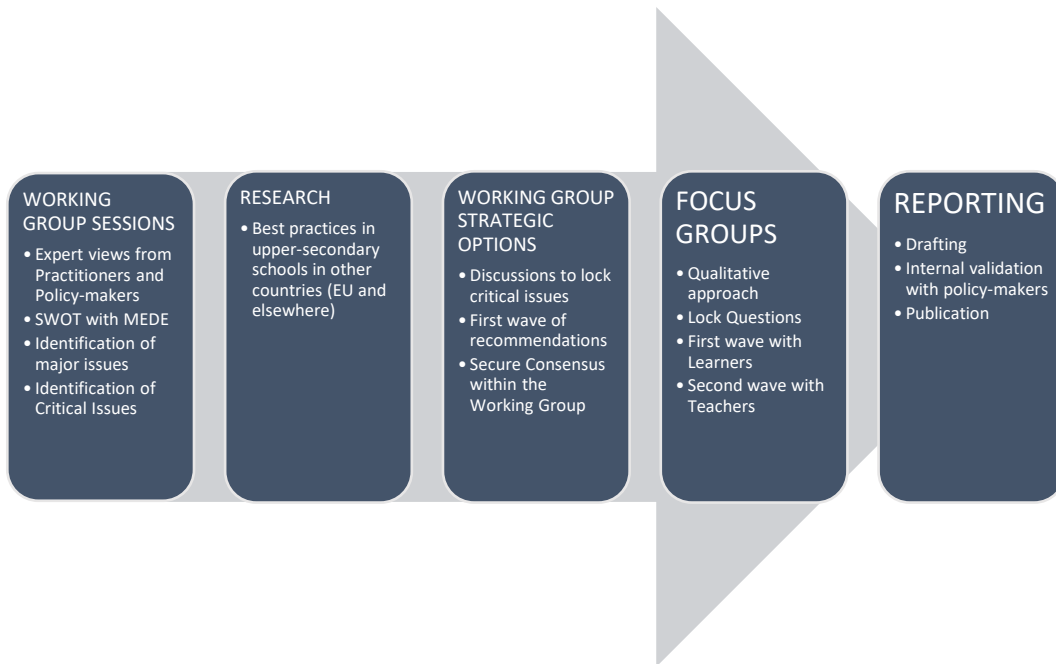
Figure 2: Working Group Methodology

Wherever possible, this report adopts a tabular approach to facilitate review, discussion and engagement.

The Working Group considered commissioning quantitative research during the course of its tenure, but decided that this would inevitably delay the publication of any report, since reliable data analysis needs to be conducted in waves, and over a significant period of time. However, the Working Group had access to the initial findings of an unpublished NCFHE report "Student Engagement in School Life and Learning", which includes quantitative surveys of sixth formers and their teachers.

Modern education systems typically incorporate five inter-related systems of teaching, learning, assessment, governance and infrastructure (*see Figure 3*).
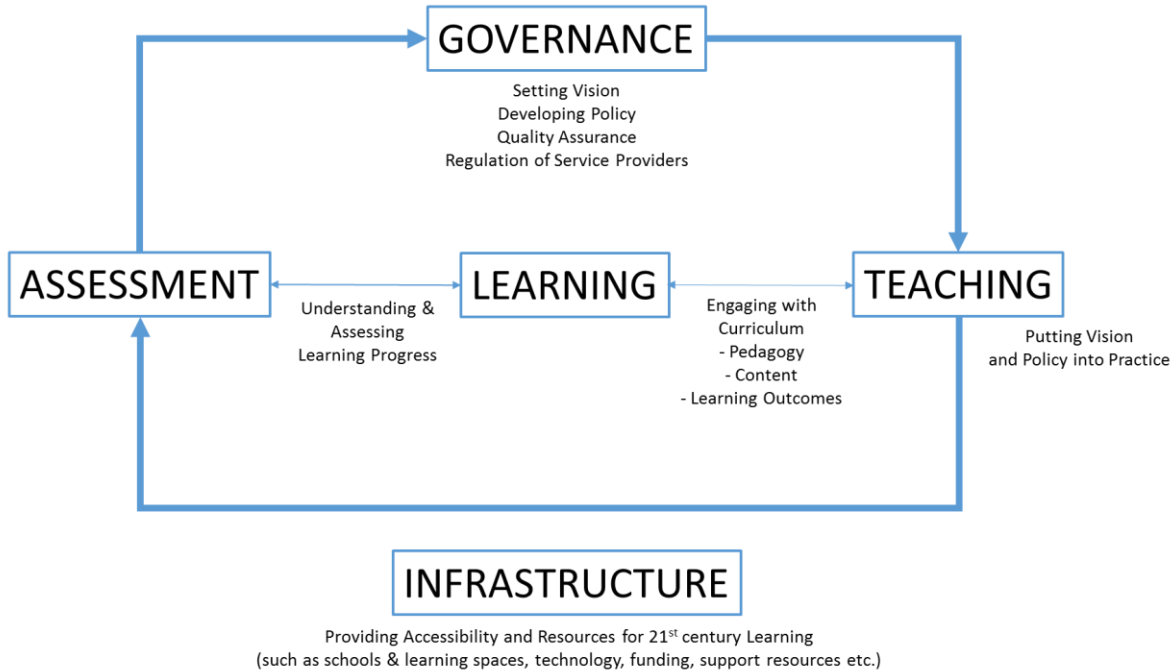
Figure 3: Interaction between primary components of Education System

This report loosely groups a set of key challenges under four of these headings. In practice, many challenges are both transversal and inter-connected. Issues relating to the Curriculum, for instance, cut across most areas, but for the sake of reporting are included under the Teaching and Learning Section. The annexes are an integral part of this report, and provide supplementary data and analysis to support the recommendations proposed by the working group.

CHALLENGES

In a November 2015 TEDx talk[6], Will Richardson, a former secondary school teacher and writer, shared two slides which he said illustrated the disconnect between what teachers believe, and what they actually practice, in schools and the classroom.

CONDITIONS FOR POWERFUL LEARNING (WHAT TEACHERS BELIEVE)	WHAT PEOPLE NEVER SAY (AND WHAT IS PRACTICED IN SCHOOLS)
• Safe environment	• Sitting in rows
• Personal investment	• 45/60/88 Minute Blocks
• Real world application	• One sized curriculum
• Fun	• One subject area focus
• Relevance to their lives	• Area-grouped co-learners
• Social	• No real-world application
• Interesting Questions	• Teacher-controlled
• Positive Environment	• Someone else's questions
• Real Audience	• Standardized Assessments
• Passion	• Emphasis on Grades
• Teachers / Mentors	• Carrots and Sticks
• Autonomy and Agency	• No Choice / No Agency
• Challenging	• Lack of Relevance
• Not Time Constrained	• "Handing it in"

Table 4: Conditions for Powerful Learning vs Actual Practice

Richardson's slides are the more poignant in that they resonate outside the US context. There are clear parallels with the situation in our sixth forms. The working group believes that:

A) Most stakeholders, and teachers in particular, recognise this disconnect between the conditions for ideal learning and what is served in schools - and yet appear powerless to address or at least reduce the gap / address the disconnect; and that

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[6] https://www.youtube.com/watch?v=sxyKNMrhEvY

B) Unless education policy translates into concrete action to narrow the disconnect, the education system will increasingly put learners' futures at risk.

In this section, the above issues and others are framed as challenges within the Malta context, as a primer to recommending solutions.

CHALLENGES TO TEACHING AND LEARNING

CURRICULUM VISION

Challenge 1: One-size-fits-all system of teaching and learning is not fit for purpose

The post-secondary system in Malta, like those of many other countries, has been developed for 'average learners on academic pathways'. Yet there is no such thing as an average learner, and not all young people wish to proceed to formal higher education.

The following characteristics are indicative of the 'one-size-fits-all' system:

1) The delivery mode relies on mass learning in classrooms, usually led by one teacher (one-to-many model).

2) The learning culture is more akin to a mass production of 'knowledgeable learners' at the end of a two-year cycle.

3) The system relies on the proliferation of standards and standardised testing. Test scores evaluate students, teachers and schools.

4) The system is dominated by formal examinations and assessments 'under exam conditions' at the end of a pre-defined period. Success is measured in terms of securing a grade that can enable the student to progress to higher education. The system is necessarily punitive in that failure to pass examinations that assess progress under present pedagogical conditions bars progress to further education.

There is a 'historic' context that has led to the adoption of the examination system. For many years (at least since the mid-1950s), and for various justifiable reasons at the time, the system focused almost solely on the academic route of post-secondary education. Eventually, the general public perceived this as the route to follow with the result that other routes were considered to be of a lower status. This perception is no longer sustainable in the 21st century context, and one of the objectives of the report is to suggest how to change it, knowing that changing perceptions and attitudes is a difficult task and takes time. Fortunately, alternative routes have been developed and the challenge is to ensure that they are perceived as equally valid as the academic

route. An aspect of this challenge is that this perception is formed early on, well before the post-secondary stage.

5) There are few concrete opportunities for the student to switch from one education system to an alternative during the course of the two-year cycle. There is a lack of flexibility and permeability in either the academic or VET streams being deployed in Malta. The downsides of the 'one-size-fits-all system' are increasingly well-documented:

A) High dropout rates.

B) Pupils who are less academic tend to be let down since the education system fails to prepare them for the world of work.

C) The system tends to fail to provide high quality vocational training for teenagers who do not proceed into higher education, although this is being mitigated by the significant investment in MCAST in Malta.

D) There is little opportunity for flexible, individualised or personal learning: student creativity and personal development inevitably have to give way to the passing of exams.

E) Although different people learn at different speeds, there is little acknowledgement of the fact that speed is not necessarily indicative of a student's eventual ability to understand and perform a task. The one-size-fits-all system may be good for above average students, but not for the rest.

F) Learners are considered to be recipients of knowledge for a prescribed period of two years, during which they are tested on their ability to reproduce this knowledge in hours of writing.

Applying Bloom's taxonomy within the constructs of the current post-secondary system, learning in Malta is arguably associated with the lower levels of remember, understand, apply, analyse, evaluate and create of the pyramid. A few 'hours of writing' can only test certain skills.

When one sets questions at the higher levels of Bloom's taxonomy, all stakeholders complain that they are too difficult or 'out of syllabus'. Two issues arise here:

(a) Written exams are not necessarily the best way test higher level cognitive skills;

(b) Written exams tend to promote 'teaching to the test' thus narrowing of the curriculum and fostering cramming.
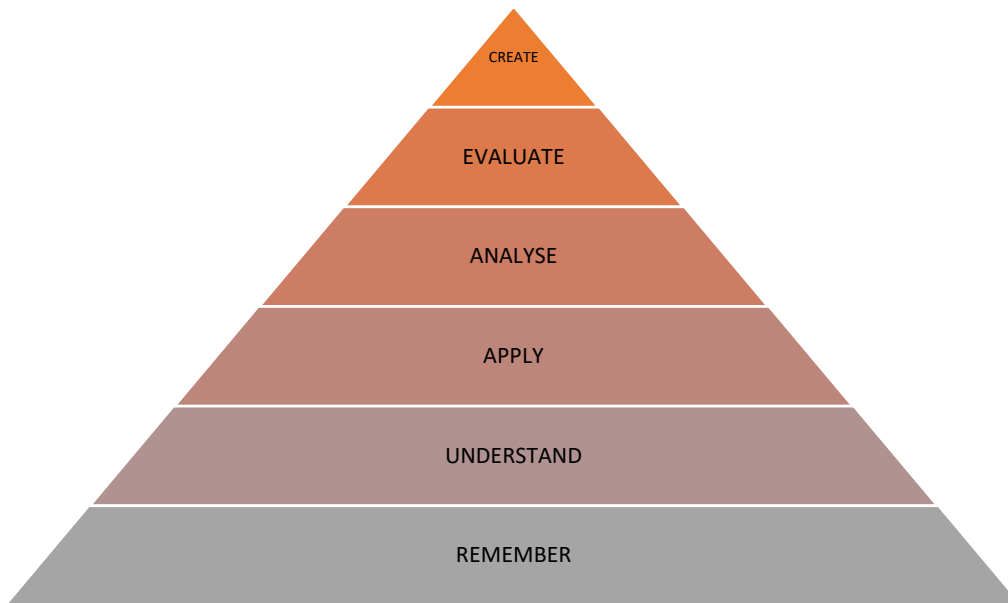
Figure 4: Bloom's Taxonomy

The end of the 'one-size-fits-all' education system would have radical implications for sixth form colleges. Issues relating to curricula, syllabi and assessment regimes (see next sections) have led to a lack of flexibility (or even rigidity) in the pacing of teaching and learning. Sixth form colleges are simply a consequence of systems built over several years to develop and assess knowledge in learners. Perhaps we should not be surprised that there has been little change in the post-secondary sector in the past decades: one-size-fits-all cannot deliver learners' needs for personalised learning. The individual student is treated as 'part of the herd', with little organised effort to provide support for the learner at this crucial time of socio-emotive, intellectual and physical development.

Challenge 2: Post-secondary represents a critical stage in the lifelong learning journey of young people

This report primarily focuses on young people between the ages of 16 and 18 who are attending post-secondary education institutions. Nevertheless, within the context of lifelong learning, policy-makers also need to address the needs of cohorts of young people who are: a) in employment and learning 'on the job', acquiring knowledge and skills relevant to their employment; and b) inactive and may be acquiring knowledge and skills which are not beneficial to them and to society.

The post-secondary sector represents a critical stage in the learning journey of young people. The number of passes at SEC level obtained by 16-year-olds can serve as an indicator of the proportion who have the required qualifications to join one of the post-secondary institutions, seek employment or remain NEET (*see Table 5 below*):

	Total number	%	Post-sec prospects
All cohort	4575		
Registered for exams	3907	85.40	
Did not register	668	14.60	Work / not traceable
No passes Grade 1-5	470	10.27	GEM / work / not traceable
One pass	364	7.96	GEM / work / not traceable
Two passes	243	5.31	GCHSS / MCAST/ ITS/ Work
Three passes	230	5.03	GCHSS / MCAST/ ITS/ Work
Four passes	188	4.11	GCHSS / MCAST/ ITS/ Work
Five passes	206	4.50	GCHSS/ MCAST/ ITS/ Work
Six passes and more	2206	48.22	6th Form Colleges

Table 5: SEC Passes with Grades 1 to 5 of Form 5 students in 2014-15

The data shows that 67% of the cohort were eligible to joint one of the post-sec institutions that offers Level 4 courses (GCHSS/MCAST/ITS/6th Form Colleges). The other 33% would fall in other categories.

In 2015, 23% of the post-secondary cohort continued on an academic path to University. MCAST's new Foundation College also offers a VET pathway to learners in post-secondary education.

The post-secondary education system for 16 to 18-year-olds makes a number of assumptions about students attending level 4 institutions:

A. Students are expected to enter the post-secondary stage having already made critical choices on the mode of learning they need - vocational or academic.
B. Students are not considered to be fully autonomous learners, capable of taking over their own learning process. They are 'not yet adults' but are 'becoming adults'.
C. In the two-year post-secondary period, students are expected to seamlessly migrate from a protected, rigidly-structured, 'spoon-feeding secondary school system' to a tertiary education.
D. Students are expected to have acquired the requisite information to make fundamental choices about the subjects they study which are likely to impact future career, with little hands-on information on the workplace and the skills required. In a substantial number of cases, the crucial decision about choice of subjects is made at the end of Grade 9 (Form 2). For example, a student who opts to change to studying science at 6th Form after studying other optional subjects in Grades 10 to 12 is likely to find the subject challenging, albeit not not impossible to master.

The litmus test for a post-secondary education system is that it should prepare students for a future, chosen path that leads to: further, vocational or higher education; future careers and / or employment; and also encourages young people to become independent adult / lifelong learners. These aspirational goals are in turn translated into statistical key performance indicators. There are important questions that policy-makers need to answer in validating whether the current system is fit for purpose. For instance:

1. What are the right metrics to target as inputs and outputs of the system?
2. Is there a capacity issue at University of Malta and MCAST?
3. What is the correlation between early school leaving and the post-secondary experience?

The NCFHE has been conducting ongoing waves of research focusing on the enrolment of 16 to 19-year-olds in education, and the subsequent lifelong learning journey. The following set of figures and tables highlight the tenuous nature of post-secondary education.
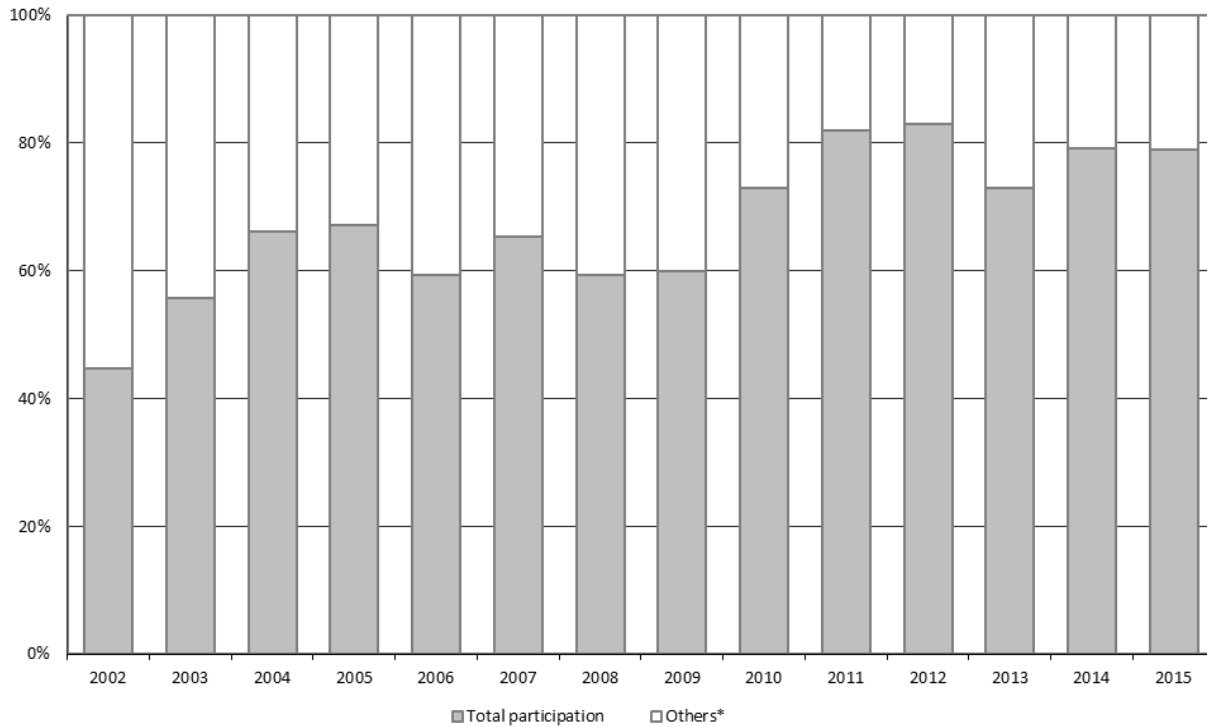
Figure 5: 17-year-old participation rate in Further and Higher Education 2002-2015[7]

Source: 2002–2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2015 NCFHE Further and Higher Education Statistics

Figure 5 illustrates the participation rate of 17 year olds in Further and Higher Education either in full-time or part-time courses. This is important given that it represents the population who continued their studies after compulsory education, which by law in Malta is until the age of 16 years, since Malta is committed to reduce the rate of early school leaving to 10% by 2020.

Early school leaving has been defined on a national level as those who are between 18 to 24-year-old, have not attained a grade between 1 to 7 in at least five Secondary Education Certificate exams or equivalent and are neither in education nor training. Thus, the participation

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[7] Others refers to those persons who are not registered in any of the institutions that participated in the survey

rate of 17-year-olds in further and higher education can serve as an interesting indicator of the share of young people continuing their studies after compulsory education.

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total participation	45%	56%	66%	67%	59%	65%	59%	60%	73%	82%	83%	73%	79%	79%
Others[8]	55%	44%	34%	33%	41%	35%	41%	40%	27%	18%	17%	27%	21%	21%

Table 6: 17-year-old participation rate in Further and Higher Education 2002-2015

Table 6 also indicates that from the total population aged 17 in Malta in 2015 79% are enrolled in further and higher education while 21% were not registered in any of the institutions that reported data for the academic year 2014-2015. Moreover, it shows that participation of 17-year-olds in Further and Higher Education has been continuously increasing, despite fluctuations.

In line with the continuous increase in participation of 17-year-olds in Further and Higher Education, Early School Leaving has been continuously decreasing in Malta. *Figure 6* illustrates the share of 18-24 years old with at most lower secondary education and not in Further Education both in EU-28 and Malta for 2005 to 2015. This indicates that considerable progress has been achieved in reducing Early School Leaving in Malta, namely by 13.2% between 2005 and 2015. Over the same period the rate of Early School Leaving in the European Union decreased by only 4.7%.

This reduction of early school leaving in Malta might be driven by a number of compensation measures such as re-integration pathways into education and training, flexible programme provision or the EU-wide Youth Guarantee scheme, which also supports SEC revision classes. Other measures have been taken to prevent early school leaving - for example by: reforming compulsory education; investing in digital infrastructure; the inclusion of vocational subjects in secondary education; and supporting students and parents in the transition from compulsory to post-compulsory education. Besides that, intervention measures seek to identify and support

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[8] Others refers to those persons who are not registered in any of the institutions that participated in the survey. Source: 2002–2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2015 NCFHE Further and Higher Education Statistics

those students at risk of leaving school early through early warning systems and targeted support programmes.[3]

Nevertheless, reducing the current rate of early school leaving in Malta of 19.8% in 2015 to 10% by 2020 will remain a very ambitious target. As *Figure 6* shows, statistical forecasting based on the development in the past decade in Malta suggests that the rate of early school leaving in 2020 could be closer to 14%. Given the focus of the indicator on early school leaving on the attainment among 18-24 year olds, the impact of the above-mentioned measures may not be reflected immediately in the statistics, but are rather evident in the long-term. Thus, continued initiatives to address early school leaving based on the recommendations of the MEDE early school leaving strategy could prove useful to further spur on the positive development achieved to date.

Figure 6: Share of 18-24 year olds with at most lower secondary education and not in Further Education or training (Early School Leavers) in the EU-28 and Malta for 2005-2015

Source: EU-28 data Eurostat Online Database – Statistics: Europe 2020 Indicators[9]

In addition to monitoring the participation rate of 17-year-olds, the participation rate of 19-year-olds proves to be a useful indicator in monitoring participation in further and higher education. At this age a student who completed compulsory education and proceeded without delay into post-secondary education would have concluded his or her studies. Thus, participation at age 19 might indicate continuation of studies after post-secondary education (*see Table 7 below*).

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[9] see http://ec.europa.eu/eurostat/tgm/download.do?tab=table&plugin=1&language=en&pcode=t2020_40

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Further Education	11%	13%	21%	19%	23%	18%	31%	35%	30%	27%	24%	29%	29%	34%
Higher Education	21%	24%	23%	25%	25%	25%	24%	26%	27%	25%	32%	32%	30%	26%
Other programmes[10]													3%	2%
Short courses													3%	2%
Others[11]	67%	63%	56%	56%	52%	57%	45%	39%	44%	48%	44%	39%	35%	37%

Table 7: 19-year-old participation rate in Further and Higher Education 2002-2015

Source: 2002–2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2015 NCFHE Further and Higher Education Statistics

This is also significant in view of the EU 2020 target of increasing the share of 30 to 34-year-olds within the EU having attained higher education to 40% by 2020. In this regard, Malta as well as other countries have established their own national target realistic to their specific national circumstances. In fact, Malta has committed itself to achieve a national target of 33% by 2020.

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[10] 'Other programmes' mean programmes by non-licensed education providers or not accredited locally by the NCFHE

[11] 'Others' means those persons who are not registered in any of the institutions that participated in the NCFHE survey
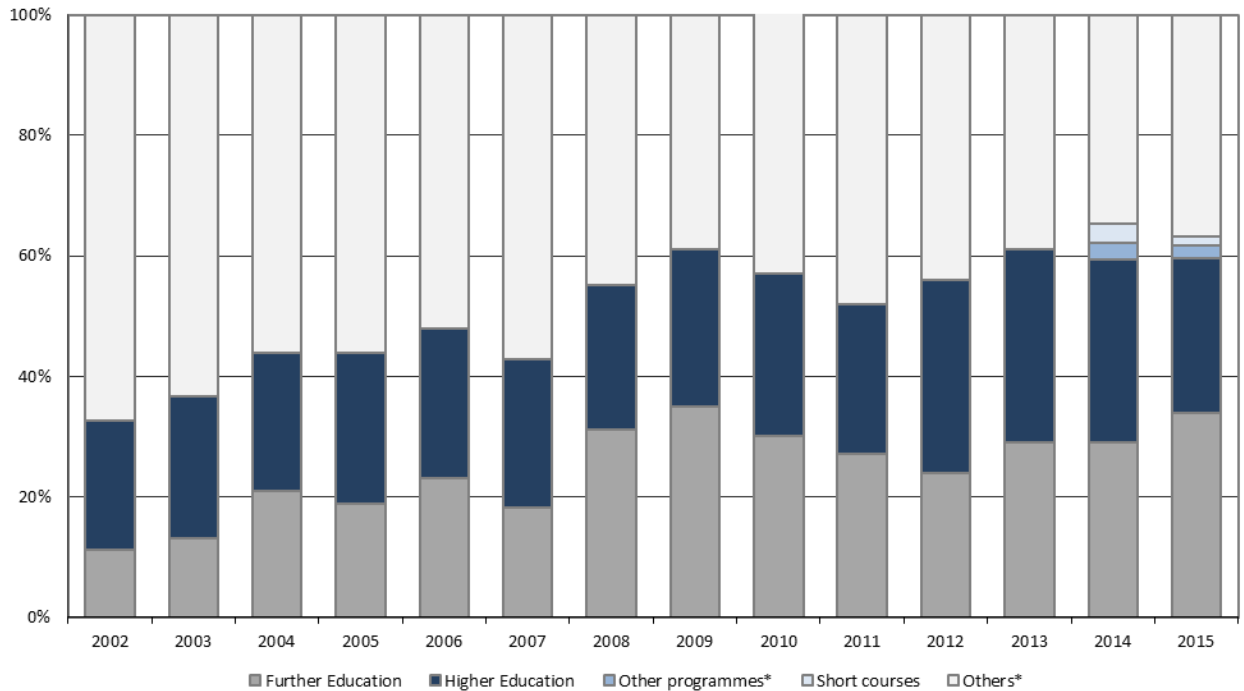
Figure 7: 19-year-old participation rate in Further and Higher Education 2002-2015

Source: 2002–2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2015 NCFHE Further and Higher Education Statistics

Figure 7 suggests that out of the total population in Malta aged 19 in 2015, 60% were participating in Further and Higher Education, of which 34% were enrolled in Further Education programmes and 26% in Higher Education. Moreover, 4% of 19-year-olds in 2015 were enrolled either in short courses or in courses not accredited by the NCFHE. Thus, based on *Figures 6 and 7* it appears that while the share of 17-year-olds enrolled in further and higher education has been increasing over the years, the share of 19-year-olds continuing their studies has remained relatively stable.

This is mirrored by a relatively mild increase in the rate of higher education attainment among 30-34 year olds in Malta as shown in *Figure 8*. In 2015, 27.8% of the 30-34 age cohorts had achieved A-Level of education equivalent to MQF Level 5 to 8 representing an increase of 7.1% when compared to 2006. Despite this milder increase in higher education attainment when compared to the reduction in early school leaving, statistical forecasting based on the development in the past decade in Malta suggests that the national target of 33% for higher education attainment of 30 to 34-year-olds may be achieved by 2020 as is shown in *Figure 8*.
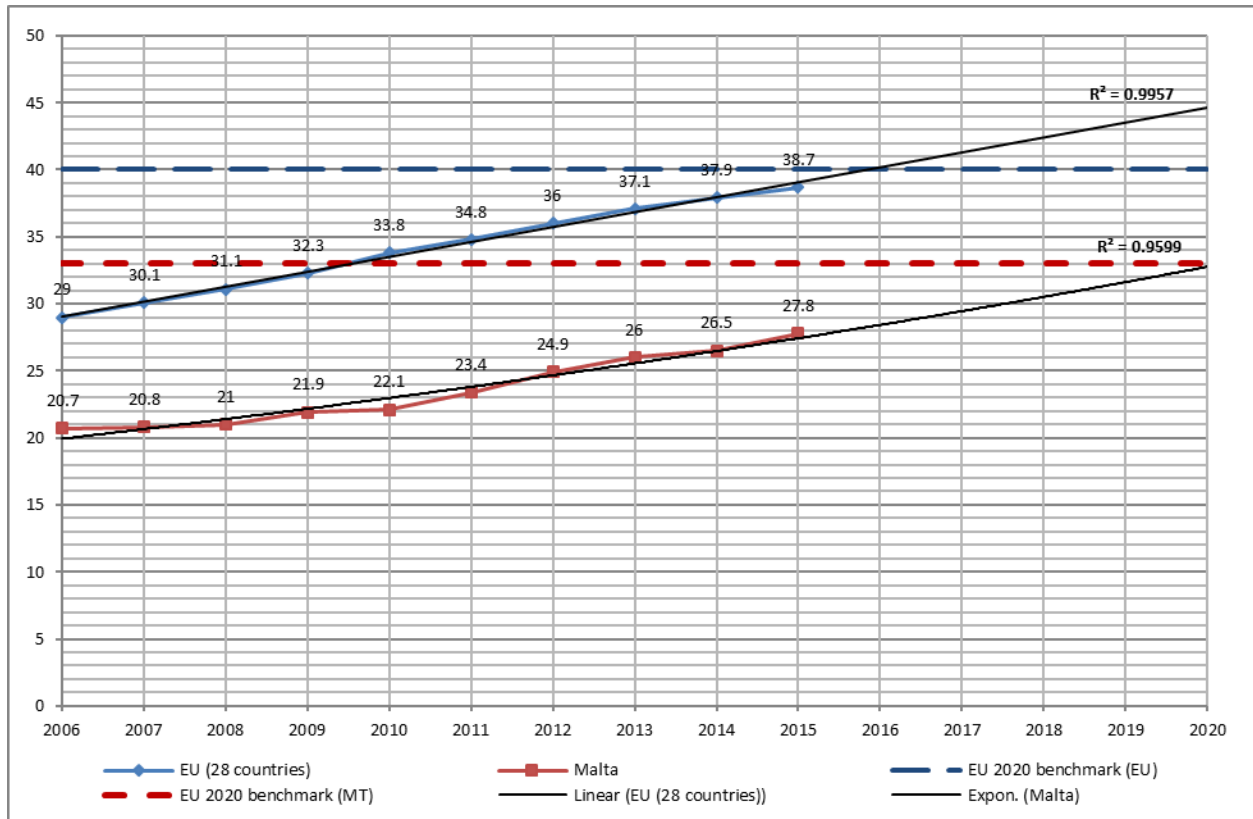
Figure 8: Share of 30-34 year olds having attained higher education (ISCED 1997 level 5-6) in EU-28 and Malta for 2002-2014

Source: EU-28 data Eurostat Online Database – Statistics: Europe 2020 Indicators[12]

Table 8 below provides a more detailed analysis of the 17 and 19-year-old cohort student population in Further and Higher Education for the past 14 years between 2002 and 2015. It depicts a detailed breakdown of statistics for both age cohorts by level of education and orientation, namely Further Education Academic, Further Education Vocational and Higher Education. Participation rates are based on the total population (at birth) for each age cohort for each year respectively. In 2015, from the total 17-year-old cohort of the population at birth (4,670), those enrolled in Further and Higher Education reached 79%, while others represent 21%.[13] From this 79% student participation rate in Further and Higher Education, 53% were enrolled in academic and 22% vocational programmes in Further Education, while 3% were

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[12] see http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=0&language=en&pcode=t2020_41

[13] 'Others' means those persons at the age of 17 who are not enrolled in any of the institutions delivering data for the academic year 2014-2015.

enrolled in short courses. Results also indicate that over the past 14 years, at age 17 the majority of students in Further Education opted for academically oriented programmes of study. Conversely, at age 19, the student population in Further Education are more likely to opt for vocationally oriented programmes of study. This scenario was also evident throughout the period under consideration. In 2015, from all students enrolled in Further Education at age 19, 58% followed vocational programmes compared to 30% of the 17-year-old cohort. This means that in Malta, the majority of students who choose to continue studying after compulsory education opt for academically oriented programmes. On the other hand, at age 19, amongst those in further education, the majority tend to opt for vocational programmes of study. This trend may have several different explanations. Students may have chosen to enrol in vocational oriented further education programmes after completing compulsory education and continue to attain the successive vocational qualifications in their chosen career path, which may take 3 to 4 years depending on the entry qualification of students. Students may have also returned to vocational further education after having left the education system first at the end of compulsory education. At the same time, students may have also turned to vocational oriented further education after having first enrolled in academic further education programmes.

Table 8 also illustrates that in 2015, from the total 19-year-old cohort (5,038), 63% were enrolled in Further and Higher Education; of which 34% were enrolled in Further Education, 26% in Higher Education programmes and 4% in Other programmes or short courses. On the whole it is evident that while the share of 17 year-olds continuing their studies in Further and Higher Education appears to be increasing, the share of 19 year-olds continuing their studies has remained relatively stable. Moreover, while 79% of the 17 year-olds are participating in education, only 63% of the 19-year-old cohort does so. This decrease in participation between 17 and 19-year-olds is evident throughout the previous years, indicating that further work is needed to increase retention in education for young people aged 17 years and over.

AGE	Level	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Population:														
	Further (Academic)	1,547	2,398	2,633	2,603	2,190	2,358	2,138	2,300	2,438	2,480	2,391	2,418	2,360	2,477
	Further (Vocational)	823	606	879	1,110	1,113	1,144	994	994	1,332	1,473	1,305	1,137	1,196	1,043
	Higher	54	24	5	6	9	7	13	8	10	13	130	78	58	17
	Other programmes													13	28
	Short Course													209	120
	Total Further & Higher	2,424	3,028	3,517	3,719	3,312	3,509	3,145	3,302	3,780	3,966	3,826	3,633	3,836	3,685
	Total Population Cohort	5,430	5,425	5,314	5,533	5,584	5,368	5,302	5,474	5,147	4,826	4,613	5,038	4,848	4,670
17	**Participation rate:**														
	Further (Academic)	28%	44%	50%	47%	39%	44%	40%	42%	47%	51%	52%	48%	49%	53%
	Further (Vocational)	15%	11%	17%	20%	20%	21%	19%	18%	26%	31%	28%	23%	25%	22%
	Higher	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	2%	1%	0%
	Other Programmes													0%	1%
	Short Course													4%	3%
	Total Further & Higher	45%	56%	66%	67%	59%	65%	59%	60%	73%	82%	83%	72%	79%	79%
	Others	55%	44%	34%	33%	41%	35%	41%	40%	27%	18%	17%	28%	21%	21%
	Total Population Cohort	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Population:														
	Further (Academic)	34	141	211	176	346	122	613	742	638	319	355	607	548	702
	Further (Vocational)	612	582	930	808	884	880	1,129	1,103	943	1,148	873	793	794	1,003
	Higher	1,240	1,324	1,242	1,315	1,318	1,372	1,336	1,369	1,411	1,362	1,628	1,561	1,396	1,297
19	Other Programmes													125	105
	Short Course													151	79
	Total Further & Higher	1,886	2,047	2,383	2,299	2,548	2,374	3,078	3,214	2,992	2,829	2,856	2,961	3,014	3,186
	Total Population Cohort	5,794	5,571	5,430	5,245	5,314	5,533	5,584	5,368	5,302	5,474	5,147	4,826	4,613	5,038

Participation Rate:														
Further (All)	11%	13%	21%	19%	23%	18%	31%	35%	30%	27%	24%	29%	29%	34%
Higher	21%	24%	23%	25%	25%	25%	24%	26%	27%	25%	32%	32%	30%	26%
Other Programmes[14]													3%	2%
Short Course													3%	2%
Total Further & Higher	33%	37%	44%	44%	48%	43%	55%	61%	56%	52%	56%	61%	65%	63%
Others[15]	67%	63%	56%	56%	52%	57%	45%	39%	44%	48%	44%	39%	35%	37%
Total Population Cohort	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 8: 17 and 19-year-old student population in further and higher education 2002-2015

If we extend student participation beyond the 16 to 18-year-old cohorts to frame the post-secondary experience within the wider context of adult participation in lifelong learning, the trends make for sobering reading. The National Lifelong Learning Strategy 2020 includes the following KPIs which are correlated to the post-secondary system:

KEY PERFORMANCE INDICATORS	Malta 2012 (base value)	Malta 2020 (target)	EU 2020 (target)
1. Early leavers from education and training	22.60%	10%	10%
2. Level of participation of adults aged 25-64 in lifelong learning	7%	15%	15%
3. Share of Students in Vocational Education and Training at ISCED 3	38.90%	45%	N/A
4. 30-35 year olds completing tertiary or equivalent education (MQF Level 6)	21.10%	33%	40%
6. Women in employment aged 20-64 (note 1)	46.9%	70%	75%
7. Literacy skills in men aged 25-64	96.70%	98%	N/A
8. Digital Technology skills in adults aged 25-64			
- MQF level 5 for working age adults	N/A	Level 5	N/A
- MQF level 6 for people aged 18 to 29	N/A	Level 6	N/A

Table 9: National Lifelong Learning Strategy 2020 KPIs:

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[14] 'Other programmes' means to programmes by non-licensed education providers or not accredited locally by the NCFHE

[15] 'Others' refers to those persons who are not registered in any of the institutions that participated in the survey. (Source: 2002–2005 NSO Education Statistics; 2006-2007 NCHE provisional data; 2008-2015 NCFHE Further and Higher Education Statistics)
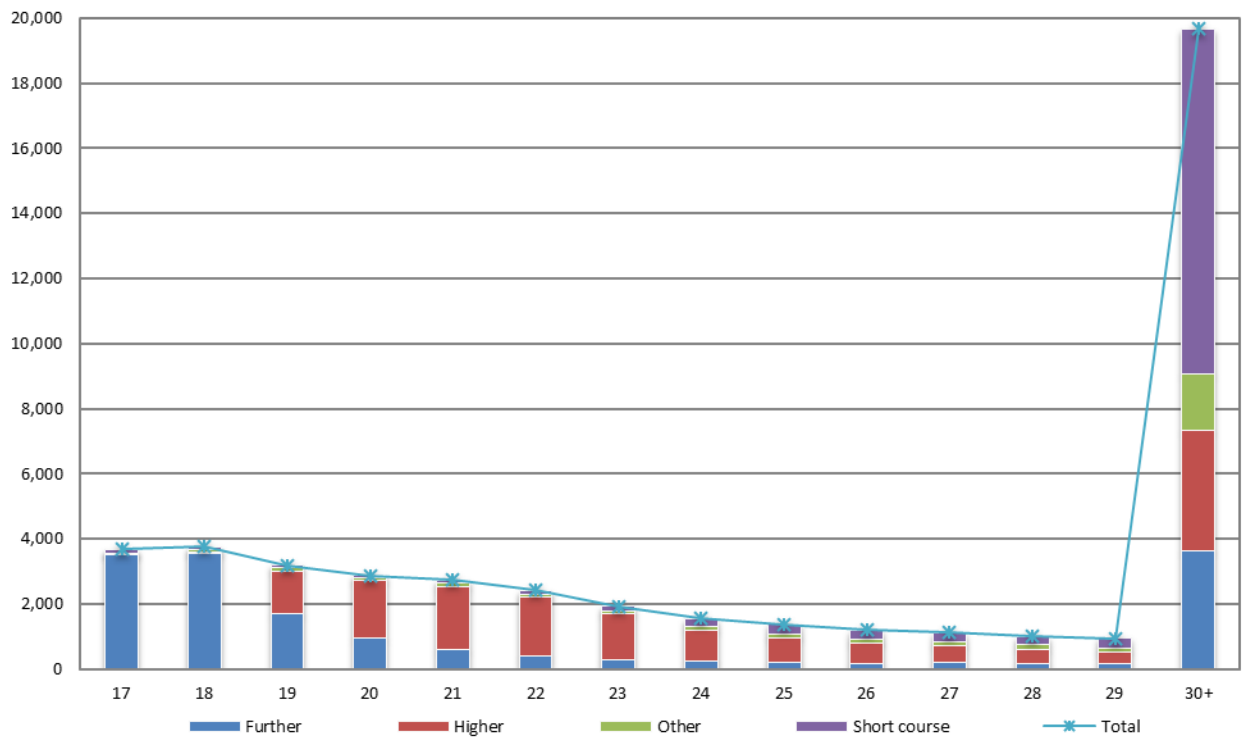
Figure 9: Student population by age in Further and Higher Education for the year 2015 (incl. short courses)

* Other refers to programmes by non-licensed education providers or not accredited locally by the NCFHE (Source: NCFHE Further and Higher Education Statistics Survey 2015)

	17	18	19	20	21	22	23	24	25	26	27	28	29	30+
Further	3,520	3,548	1,705	956	593	389	278	235	222	165	198	170	170	3,647
Higher	17	50	1,297	1,754	1,956	1,819	1,420	971	740	620	518	447	334	3,673
Other[16]	28	76	105	98	104	93	93	109	131	123	127	132	125	1,728
Short course	120	92	79	69	78	124	135	232	284	298	278	265	324	10,623
Total	3,685	3,766	3,186	2,877	2,731	2,425	1,926	1,547	1,377	1,206	1,121	1,014	953	19,671

Table 10: Student population by age in Further and Higher Education for the year 2015 (incl. short courses)

Figure 9 and *Table 10* depict the distribution of the total student population in Further and Higher Education by level (Further or Higher) including also Other courses and Short courses by

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[16] Other refers to programmes by non-licensed education providers or not accredited locally by the NCFHE (Source: NCFHE Further and Higher Education Statistics Survey 2015)

single years of age until age 29, and the 30+ student population in one single cohort. Similar to previous years, results show that at ages 17 and 18, students would typically be pursuing studies at further education level. In comparison, most higher education students in Malta fall within the 19 to 23 years' age bracket with the 21-year old student cohort representing the largest age cohort in higher education. The figure also indicates that the 30+ group are evenly enrolled in both further and higher education.

Short courses are mostly popular within the 24 to 29-year-old cohorts. Moreover, the 30+ group have a considerably high share of people enrolled in short courses, which is however due to the fact that this category includes all the remaining age cohorts aged 30 and over and, thus, exceeding by far single age cohorts. Nevertheless, from a total of 19,671 forming part of the 30+ category, 54% were following a short course in 2015, which exceeds by far the share of individuals in Short courses of all other age cohorts. In fact, *Figure 10* below indicates that with increasing age, individuals are more likely to opt for short courses.
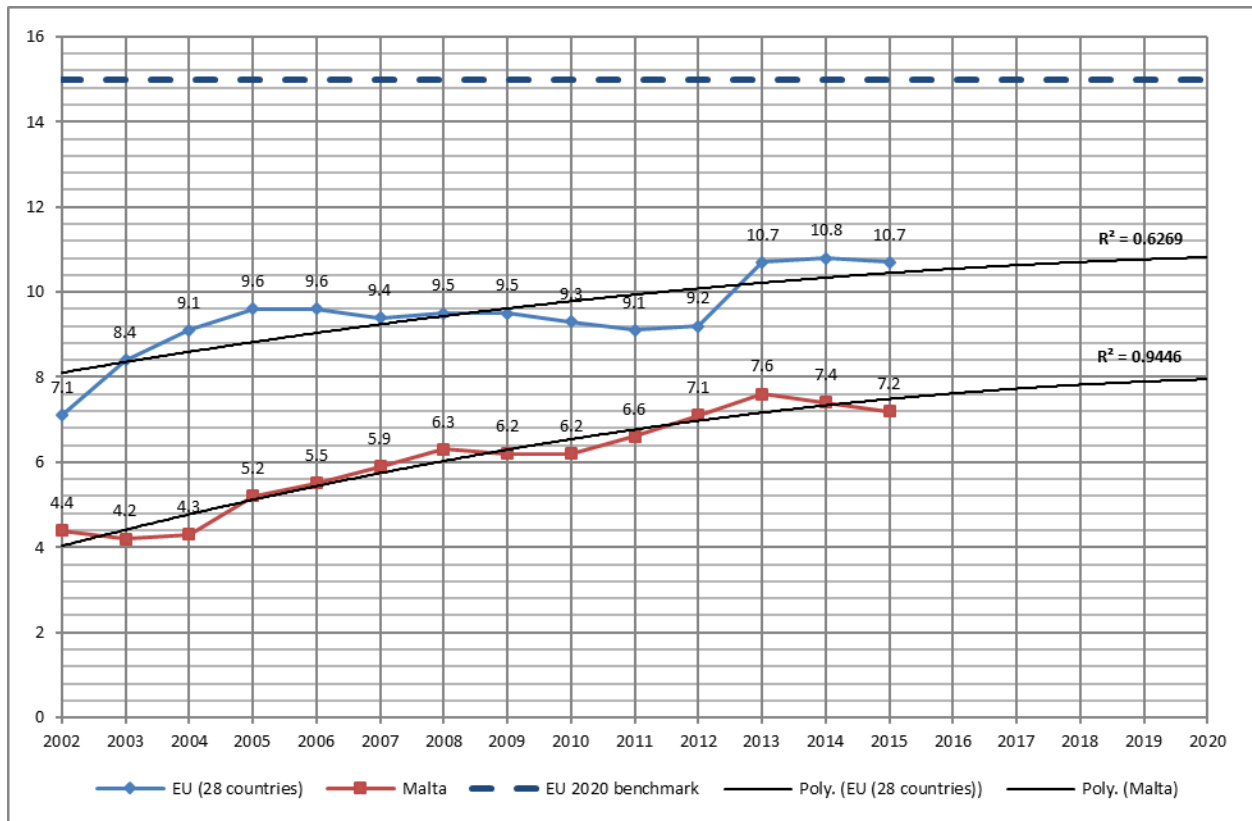
Figure 10: Participation rate in education and training (last 4 weeks) of 25-64 year olds in EU-28 and Malta between 2006-2014

Based on Eurostat data, *Figure 10* shows the participation rate in education and training of individuals aged between 25 to 64 both in the EU-28 and Malta between 2006 and 2015. Eurostat defines participations as both participation in formal and non-formal education and training, using as a reference period the past four weeks before the conduction of the interview.

The data is further calculated as annual averages of quarterly EU Labour Force Survey data.[17] The participation rate of 25-64 year olds has increased in Malta in the past 10 years from 5.2% in 2005 to 7.2% in 2015 with a slight decrease to be observed in the past couple of years. It appears that a similar trend may be observed across Europe, with the rate of participation of 25-64 year olds in education and training having stagnated in the past years in the EU-28. It is also evident that both in Malta and in the EU-28 further efforts are needed to encourage participation in lifelong learning. Indeed, statistical forecasting based on the participation rate in Malta and the EU-28 in the past decade suggest a participation rate of 25-64 year olds in lifelong learning in 2020 of about 11% for the EU-28 and about 8% for Malta, which is well below the 15% target set for 2020.

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[17] http://ec.europa.eu/eurostat/cache/metadata/en/trng_lfs_4w0_esms.htm

	MQF 1	MQF 2	MQF 3	MQF 4	MQF 5	MQF 6	MQF 7	MQF 8	n/a[18]	Total Students	Total Age Cohort	Participation Rate by Age
17	38	379	458	2,645	14	3			148	3,685	4,670	78.91%
18	25	235	461	2,827	43	5	2		168	3,766	4,848	77.68%
19	17	66	312	1,310	206	997	94		184	3,186	5,038	63.24%
20	19	27	154	756	300	1,327	127		167	2,877	4,613	62.37%
21	24	26	87	456	336	1,459	161		182	2,731	4,826	56.59%
22	19	16	70	284	337	1,154	328		217	2,425	5,147	47.11%
23	32	14	56	176	206	626	588		228	1,926	5,474	35.18%
24	32	13	38	152	172	317	480	2	341	1,547	5,302	29.18%
25	57	10	40	115	156	257	326	1	415	1,377	5,368	25.65%
26	59	7	21	78	148	169	298	5	421	1,206	5,584	21.60%
27	68	11	41	78	137	156	221	4	405	1,121	5,533	20.26%
28	77	6	21	66	113	113	218	3	397	1,014	5,314	19.08%
29	67	5	32	66	98	82	151	3	449	953	5,245	18.17%
30+	2,238	241	328	840	1,238	856	1,472	107	12,351	19,671	269,752	7.29%
Total	2,772	1,056	2,119	9,849	3,504	7,521	4,466	125	16,073	47,485	336,714	14.10%
% students aged 17 and over by MQF	5.84%	2.22%	4.46%	20.74%	7.38%	15.84%	9.41%	0.26%	33.85%	100.00%		
Age by MQF (arithmetic mean)	47.90	26.02	22.63	20.67	29.40	23.76	29.03	39.62	43.08	32.02		

Table 11: Student population and participation rate of individuals aged 17-30+ in further & higher education by MQF level[19]

Table 11 illustrates the student population and participation rate of individuals aged 17-30+ in further and higher education by MQF level. The highest participation rate is noted among the age cohorts of 17 and 18 years old. In fact, among the total population of 17 years old, 78.91% were participating in education while from the 18-year-old age cohort 77.68% were enrolled in education during 2015. Moreover, it was noted that with increasing age the participation rate in education decreases, since on attainment of the aspired level of qualification individuals would leave the education system and focus on work or other responsibilities. Such a transition from

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[18] Programme is not accredited and level rated locally, which may be due to being a short course not subject to accreditation

[19] For the age cohorts 17-29, the total population is based upon the total live births (NSO); whereas for the 30+ age cohort, total population is based upon the total population aged 30 and over based on NSO (2014): Census of Population and Housing 2011, Final Report, p. 13.

education is evidenced by a considerable drop in the participation rate between two consecutive age cohorts. For example, while 77.7% of 18 year olds were in education in 2015 only 63.2% of 19 year olds were enrolled in further and higher education, suggesting a considerable drop in participation after age 18. A similar decrease is evident between the age cohorts of 21 (56.6% participation rate), 22 (47.1% participation rate), 23 (35.2% participation rate) and 24 (29.2% participation rate). On the whole, it is evident that a first considerable drop in participation may be noted at the age students generally complete further education and move on to higher education while a second drop appears evident at the age students complete their undergraduate studies and move on to postgraduate programmes.

Table 11 also provides an overview of the average age by MQF level. One has to bear in mind that this data includes all types of programmes in further and higher education, including full-time, part-time and short courses. The high average age of students following programmes at MQF levels 1 and 2, therefore, appear to be influenced by a considerable share of mature students aged 30 years or over following short courses. In comparison, when considering the 'regular' route of post-secondary schooling into higher education, thus the average age at MQF level 4 and MQF level 6-8 it is evident that the higher the level of qualification pursued, the older the students. In contrast, programmes at MQF level 5 appear to attract a more diverse student body with the average age of students in these programmes being 29.40. This suggests that MQF level 5 programmes could be an important entry route into higher education for mature students returning to education.

The statistical data from the NCFHE is supplemented by insights from recent research and the learner and teacher focus groups, which are indicative of how post-secondary education is perceived as a critical stage within the context of the overall lifelong learning journey:

1) Many students describe entry into the post-secondary system as a 'shock to the system'. Students report that they were totally unprepared for what the system expects them to manage at the outset, including increased workloads, increased levels of attention to new lecture mode style of teaching laced with old-style exam assessment methods. They attribute this to a variety of factors: a lack of information on what lies beyond success at SEC; an obsession with passing

SEC exams during secondary school to the detriment of preparing for further education; a lack of clarity of the type of teaching and learning that is meant to take place during the two-year period and what constitutes 'quality education'; and a lack of identity for sixth forms / post-secondary institutions.

2) Sixth form is the first opportunity for students to drop out of the education system - including those who had the grades to enter the system in the first place. As a general yardstick, students with the necessary 6 passes but with the minimum level of Grade 5 tend to struggle. Students who are performing at 35% cannot be identified, 'picked up' and helped. Heads of department do not have the time to follow these students, many of whom eventually drop out. This is very much symptomatic of problems associated with large classes without a learner-centred approach. It is the teacher/tutor and not the head of department who should see to the needs of individual students.

3) Post-secondary for many students is simply an extension of the compulsory education system. In many cases, the longer young people stay in school, the less relevance they see in school and institutional education. Too many young people are still leaving school without the basic skills needed in today's society and workplace. A recent OECD report[20] shows that students who perform poorly at age 15 face a high risk of dropping out of school altogether. When a large share of the population lacks basic skills, a country's long-term economic growth is severely compromised.

4) The post-secondary stage is the product of choices made in the preparatory years of compulsory education. Making the wrong choice on subjects at sixth form is a primary contributory factor to students failing or dropping out during the two-year period. Moreover, subjects chosen at sixth from tend to reflect choices made on subjects at secondary school. One in two students study the same subjects at post-secondary education as those chosen at the end of Year 8. This means that: some choices on subjects are being made too early in the life of the student (*see Annex 10*); and that the information being provided to learners and parents during

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[20] See Glossary

secondary school may not be adequate. It also begs the question of why choices are being made so early in life - particularly in a society where the labour market requires a wide spectrum of skills.

5) Sixth form students often appear jaded with decisions they have made, or someone else has made on their behalf. Students tend to make school choices according to their own emotional and personality needs. Often, they make mistakes and waste valuable time in deciding to move from one institution to another - leading to a wave of late-comers who inevitably struggle to 'catch up' with the demands of the institution.

6) The learning experience is inevitably linked to the size of the institution. Student life at Junior College is starkly different from that at GCHSS or the much smaller independent and church sixth forms. There is no consensus among learners on which model works better, or prepares students better for what lies beyond post-secondary. Students highlight the challenge in institutions 'reaching' all those students who sign up for post-secondary education. Some associate teaching and learning structure and a small class with academic achievement. Junior College introduces a lecture culture that for some students is associated with anonymity and 'fending for oneself', far removed from the sheltered experiences of secondary education. Students without the requisite drive and self-discipline for independent learning are at risk of falling by the wayside. Conversely, some students in a University Focus group believe that the Junior College experience is fundamental for the 'lecture culture' of higher education, and appreciated the personal freedom they experienced at Junior college. In the words of one student "Junior College either makes you or breaks you."

7) There needs to be a smoother transition from secondary to post-secondary education. In the same way that post-secondary is potentially an opportunity for a deeper engagement with a smaller number of subjects, it is also associated with a time for less positive attitudes towards school and learning. Low performers tend to have less perseverance, motivation and self-confidence than better-performing students: absenteeism is rife in some institutions. Teachers and students stress that the wide gap between SEC, IM and AM curricula may be a reason why students drop out from post-secondary education. Students in Form 2 (Grade 9) are asked to

choose option subjects to be followed for the next 3 years. As already highlighted above, this choice is made too early in the life of the student and should ideally be moved to Form 5 (Grade 12). The NCF team has discussed this issue at length in the past, but could not identify a solution to replace the ingrained system without a massive administrative overhaul. Although highly desirable, the NCF believes that the suggested change leads to drastic changes which involve significant changes to staff operations, curricula etc.

Challenge 3: The formation at post-secondary level should be holistic, and not exclusively academically and exam-oriented

Post-secondary represents a stage where young people need social and pastoral support. Sixth form is associated with a critical stage in the formation of young people - a time when adolescents are passing through physical, social and emotional change. Students enter sixth form on a 'psychological high' after achieving six subjects as entry requirements, after which reality hits home. Every day is potentially a day of personal discovery - but much is dependent on the approach of individual teachers. For instance, science teachers' approach is tantamount to 'we mean business' which frames the expectations of the students; the Arts approach tends to be more relaxed. Irrespective of discipline, students are expected to make a seamless, rapid transition to independent learners.

The student is frequently torn between the need for structure and support and the need to be independent. The changes in personality between first year and second year students are noted by many teachers. Sixth form introduces young people to special areas of study and prepares them for further education or entry into the labour market. Sixteen-year-olds entering the system are expected to learn and absorb analytical and critical thinking skills. Yet the vast majority are neither self-motivated nor autonomous learners who can immediately start to benefit from lecture-style teaching. Teachers have to deal with students who in their majority are 'soon to be adults' and whose needs (and characters) change dramatically between year one and year two of sixth form. Students do not expect to be treated as secondary school students but neither are they a homogeneous group: some will benefit from a sheltered mode of learning while others crave independence. These contradictions are indicative of the need for a system that pays as much attention to students' personal development and pastoral care as much as to academic progress and excellence.

1) In practice, the present system goes against the developmental model of formation, which promotes quality learning that may empower students with the correct attitude and skills to successfully move on to the next learning level:

A) There is no time, space and energy left for the 21st century skills to be adopted into the curriculum since the students' priority is to sit for as many exams as quickly as possible.

B) The consequence of the above is that the private lessons mentality is fuelled further since students need extra coaching if they are to sit for exams before they are prepared for them adequately at school.

C) Students are unable to assimilate, understand and adequately master the depth and breadth of the syllabus since the intended two-year cycle is being disrupted when they sit for exams in May or September of their first-year.

D) It has been noted by all sixth forms – state, church and independent – that students do not make optimal use of their time in second year.

E) The shift in the students' learning journey from one that is examination-oriented to fostering lifelong learning is impossible to achieve with the current system since there is no space for formation programmes.

F) The current system has increased the students' stress levels since they need to cope with cramming a two-year syllabus on their own within their first year, while following the subjects chosen at the institution they are enrolled in.

G) The system encourages students to sit for IM or AM level examinations in September after fifth form, even before they apply for their sixth form. It is an absurd situation that a 15-year-old can technically sit for IM and AM levels, but not for SEC level exams.

H) The system encourages students who are successful in first year to sit for additional subjects in their second year, resulting in further cramming.

2) The developmental needs of sixth formers as people are not being recognised or addressed adequately, with the risk that some students find the experience overwhelming, and fail to complete the chosen course. Developmental needs are closely related to the social-emotional wellbeing of young people and include:

- Meaningful participation in and contribution to communities, with an increasing sense of independence and responsibility.

- Positive communication with adults and peers, including the ability to resolve conflict with their peers as well as with the adults in their lives in a positive way.

- Self-definition, where rapidly changing bodies and minds require time to absorb new ways of thinking, new perceptions of self, and new reactions from others.

- Development of a personal vision and identity, to help understand their life's meaning and purpose.

- Creative expression.

- Competency and achievement - a variety of teaching methods and a balanced integrated curriculum provide each student with the opportunity to experience success.

- Physical activity.

- Structure and clear limits in order to learn how to grow during a time of rapid change.

3) The secondary school experience is inadequate preparation for the majority of 16-year-olds who are expected to rapidly navigate the requirement of the MATSEC curriculum in terms of content, skills and attitudes. While the curriculum for earlier years is written around the needs of the students of a particular age, this principle is ignored for 16-year-olds, when there are other skills that need to be learned, and other issues to address. In practice, the skills needed to make students become independent learners are never taught. Students struggle to come to terms with the depth of content, new forms of learning and old summative forms of assessment. They find themselves in a competitive environment, with a lack of social bonds and peer pressure.

4) The curriculum and the classroom in which it is delivered bear little reflection to young people's lives outside the college. There is a veritable disconnect between sixth form and 'real life'. Not feeling that one belongs to the classroom and lecture hall inevitably influences young people's level of engagement with learning.

5) Social relationships between students and teachers at sixth form tend to be dominated by a formal lecturer-student relationship. Young people are not expected to bring their personal lives into the classroom. Not every post-secondary institution has a Parents' Day. Some students feel

they are not being adequately supported or guided by the institution. Student mutual support may not necessarily occur in a competitive school environment.

6) There are strong correlations between early school leaving and many aspects of wellbeing, including students' social backgrounds, overall living conditions, poor subjective evaluation of different aspects of personal life, less efficient functioning in everyday life and frequent experiences of negative emotions (Borg et al. 2016). Students leave post-secondary education because of poor grades and socio-economic issues, including in many instances outright poverty. The current stipend system does not reflect the socio-economic status of students since there is no means testing: there is little attention to disparities in socio-economic backgrounds, which condition the value attributed to certain things in life, including the value of learning. The corollary is that the state-funded student stipend can also be used by students to fund the purchase of things such as clothes. Some students clearly need some form of guidance or support that will help them value money and use it in a proper manner. The system of universal assessments increases the vulnerability of students who come from a disadvantaged background.

7) As a general yardstick, students associate the size of the institution they attend with greater contact with teachers and thus better and more accessible pastoral care. Church and independent schools appear to have a significant advantage over the larger state schools in nurturing community: many students in the larger institutions are left alienated on entering sixth form; others cited that it is not unusual for a lecturer not to know the name of a student after two years of class. The institution is neither perceived to be a welcoming community, let alone a community of learning. However, a focus group with first year University students shows that this view changes once students progress from a large institution to higher education: the 'shock to the system' at Junior College, for instance, was deemed by some to be an efficient salutary lesson in drive and personal motivation for learning - an indication of what is needed to succeed in higher education. The corollary is that the University focus group represents a sample of those who successfully navigated sixth form: this report did not include research with students who for some reason or other did not complete sixth form studies in Maltese institutions.

8) Students tend not to be aware of the range of extra-curricular activities organised by the institutions, or else believe they have a limited choice of activities. Connected with this spirit is the engaging environment of the institution itself, with students at Church schools feeling that their school provided much more than simple learning, especially with extra-curricular activities.

9) The present guidance and counselling system is perceived as ineffective by both teachers and students at both secondary school level and slightly less so at the post-secondary level. Teachers complain of the lack of study skills with which students came equipped on entering post-sixteen institutions; students find difficulty in adjusting to the demands of the curriculum and the new ways of learning expected of them. This is particularly evident in subjects such as Mathematics which students found to be almost unrecognisable from the subject they successfully studied during secondary school. Students require proper guidance when making decisions on subject choices at an age as early as 12-13 which inevitably tend to impact the subject choices at post-secondary. Students attribute drop-outs rate to wrong subject choices, and a lack of honest guidance: the information received is limited to availability of subjects and the grades needed to follow a particular subject at Advanced Matriculation.

Despite sixth form being associated with a feeling of 'being stifled or abandoned', students are reluctant to approach individual lecturers for help. Student perceptions of the personal interest teachers take in their progress range from 'very good' to 'total disengagement'. Poor teacher engagement with the subject and a lack of visible expression of interest in the progress of individual students are associated with 'school culture', the size of the institution and 'school leadership'. Some students described their head teacher as someone who knew every student by name while others associated the head of school with a remote administrative person who was rarely encountered in two years of sixth form. The fact remains that students at this age often have to manage personal issues which institutions are simply not equipped to help resolve. Inclusion at this level is not well addressed: statementing reports from the Education Division take a very long time to get processed. Problems directly related to multiculturalism are increasing.

There is a need for impartial quality advice since students find it difficult to navigate the transition between education and work. While the academic route may appear to be clear, the vocational route from 14-18 is still confusing and complex. For 14-year-olds looking to begin a technical career or aim for an apprenticeship there is little clear or accessible advice available on how to navigate through the system, which qualifications to take and where, or how to access the labour market.

CURRICULUM CONTENT

Challenge 4: Little Recognition of 21st century skills in the Curriculum

Beyond compulsory education, curricula are set by the respective service providers, each catering for specific needs and awarding qualifications reaching a maximum of MQF level 8, in full adherence and alignment with the Bologna Process. Nevertheless, the two years preceding tertiary education, being referred to in *Figure 1* as upper secondary education (typically learners would be 16 - 18 years), whilst being tacitly driven by the ultimate receiving educational institutions, still lack a defined curriculum framework.

The one-size-fits-all curricula that continue to dominate schooling are unlikely to provide present and future generations with the necessary values, skills, dispositions and attitudes for active citizenship and employability as highlighted in the Framework for the Education Strategy for Malta 2014-2014. Within a more European context, the New Skills Agenda for Europe[21] has been launched to boost employability, competitiveness and growth across the EU. It calls on EU member states and stakeholders to improve the quality of skills and their relevance for the labour market. It is centred around three key work strands: 1) Improving the quality and relevance of skills formation; 2) Making skills and qualifications more visible and comparable; and 3) Improving skills intelligence and information for better career choices. The EU is increasingly voicing its concern on skills gaps[22] and proposing strategies and incentives to align the education system with the skills required for the jobs of today and tomorrow. Malta shares the challenges of other countries in needing to develop high skill, talent-rich economies which can drive high levels of economic growth and enhance social cohesion. While the EU is advocating the need for the education system to prepare young people for the future, the curricula young people follow at

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[21] The New Skills Agenda was launched in June 2016 and looks to reduce the number of Europeans lacking adequate reading, writing, numeracy and digital skills. At the same time, it seeks to help highly-qualified young people find work that suits their potential and aspirations, make it easier for employers to recruit employees with the right profiles and to equip people with the skills and mindset to start their own businesses. 10 concrete measures support the implementation of the Skills Agenda for Europe. These include a Skills Guarantee, a review of the Recommendation on Key Competences, an initiative on graduate tracking, a review of the European Qualifications Framework as well as the Digital Skills and Jobs Coalition and a Blueprint for Sectoral Cooperation on Skills.

[22] 70 million Europeans lack adequate reading and writing skills, and even more have poor numeracy and digital skills, putting them at risk of unemployment, poverty and social exclusion. More than half of the 12 million long-term unemployed are considered as low-skilled. Higher education institutions need to ensure that they equip graduates with relevant and up-to-date skills. Around 20% of 15-year-olds in the EU do not have sufficient numeracy or reading skills. While the labour market will require more innovative and entrepreneurial skills, less than a quarter of students have had any entrepreneurship experience by the time they finish school.

post-secondary level has little bearing with the 21st century skills advocated by both the labour market and lifelong learning advocates.

Modern curricula are meant to be help young people develop a set of so-called '21st century skills'[23]. *Figures 11 and 12* below are an excellent snapshot of the foundational literacies, competences and character qualities that skills and maximise their potential and develop high levels of skill and knowledge, and eventually facilitate their entry in the labour market. 21st century skills are meant to be embedded into the very structures and curriculum of all educational programmes in order to enable the student to acquire the skills which are necessary for personal happiness and achievement, not necessarily socio-economic, in the 21st century characterised by the dawn of the Fourth Industrial Revolution.

Figure 11: 21st Century Skills

Source: World Economic Forum, New Vision for Education: Unlocking the Potential of Technology (2015)

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[23] see glossary for definition

FOUNDATIONAL LITERACIES

How students apply core skills to everyday tasks.

These skills serve as the basis upon which students need to build more advance and equally important competences and character qualities.

This category includes not just the globally assessed skills of literacy and numeracy, but also scientific literacy, ICT literacy, financial literacy and cultural and civic literacy.

Acquisition of these skills has been the traditional focus of education around the world. Historically, being able to understand written texts and quantitative relationships was sufficient for entry into the workforce.

These skills represent just the starting point on the path towards mastering 21st-century skills.

COMPETENCES

How students approach complex challenges.

Critical thinking is the ability to identify, analyse and evaluate situations, ideas and information in order to formulate responses to problems.

Creativity is the ability to imagine and devise innovative new ways of addressing problems, answering questions or expressing meaning through the application, synthesis or repurposing of knowledge.

Communication and collaboration involve working in coordination with others to convey information or tackle problems.

Competencies such as these are essential to the 21st-century workforce, where being able to critically evaluate and convey knowledge, as well as work well with a team, has become the norm.

CHARACTER QUALITIES

How students approach their changing environment.

Amid rapidly changing markets, character qualities such as persistence and adaptability ensure greater resilience and success in the face of obstacles.

Curiosity and initiative serve as starting points for discovering new concepts and ideas.

Leadership and social and cultural awarenessinvolve constructive interactions with others in socially, ethically and culturally appropriate ways.

Figure 12: 21st Century Skills Overview

1) Student responses from the focus groups make it clear that the post-secondary curriculum does not place 21st century skills at the forefront of the educational experience. Yet the skills students need to contribute effectively to society and empower them as citizens and workers are changing constantly. Our education systems have simply not kept up. Most schools look much the same today as they did a generation ago, and teachers locked in 'delivering the curriculum' are often not developing the practices and skills required to meet the diverse needs of today's learners. More than preparing our students for the future, our education systems as currently constructed risk keeping students locked in the past. As long as the measures we use to gauge the success of the system remain test scores, college acceptance, etc. real change will be hard to come by. As Debono (2015) observes: "the constant delivery of pedagogical content knowledge can only lead to a sterile reproduction of the given sources of information". Systems of Knowledge was an attempt to introduce subjects at post-secondary level that span both the humanities and science areas. Students claim the content is interesting, but resent that it is examined at par with other subjects in terms of the mainstream.

2) Malta has recently established a National Skills Council, and one of the stated objectives is to start to address skills gaps in the country, and facilitate coordination between education institution and the labour market. The connections between the education and labour market are

currently tenuous. Representatives of social partners are frequently critical of an education system which they claim does not adequately prepare young people for work and places little value on the attitudes and behaviour required in the work place. The corollary is that there are many leaders in education who believe that the litmus test of education is not job employment but personal development and empowerment.

The disconnect between education and industry raises several questions: is education inadequate for all types of work or only for certain types? Do employers expect schools to produce workers who can operate at 100% efficiency without training from day one? How prepared are employers to invest in industry and sector-specific training of young people? Nevertheless, despite improvements in recent years, many young people still leave education without effective levels of literacy and numeracy. There are poor mechanisms to ensure that vocational courses are adequately linked to progression into good jobs or further study. There are strong arguments for VET to be developed in the wider context of labour market and economic policy and that there should be concrete initiatives to meet the different interests of employers, learners and the state.

3) The curriculum in the early years was written around the specific needs of the students of a specific age group - something that is forgotten in the curricula of later years. The present model of information replication and summative, paper and pen examinations cannot accommodate the developmental skills that young people need and are expected to have learned by the time they enter the labour market. What goes on in the classroom is driven by the assessment and certification process. By the time students leave college for further education or the labour market, deficiencies in 21st century skills can be far more difficult to absorb and costly to remedy.

4) There is a reluctance to mess around or change the curriculum. In reality, most educators are aware that much of what every student was supposed to learn in the last century isn't really what every student needs to learn today. The decision on what to change, and what to retain appears to lie with MEDE policy-makers. The underlying dilemma with the post-secondary curriculum in an age where young people have access to pretty much all there is to know online is to determine the "one-billionth of one percent" of information chosen to be taught in the classroom.

5) In an ideal world, 16 to 18-year-olds should continue to pursue an education path; in practice this is when young people have the first opportunity to exit schooling, and many choose to enter the labour market early on, for a variety of socioeconomic reasons. Separating learning into discrete subjects and time blocks is not the best way to prepare young people for the real world: school is the only place in the world where we do mathematics for 45 minutes, and then science for 45 minutes, and then Shakespeare for 45 minutes. That's an efficiency that serves the system, not students – yet alternatives have not been forthcoming. Moreover, the creative jobs of the future will not fit into boxes as neatly labelled and divided as the professions of today. The positions that involve mastery and the use of powerful technologies will be filled by people who combine a range of different skills from different disciplines. These jobs will require 'interdisciplinary thinking and doing': many education institutions continue to perceive such regimes as unstable, even anarchic. There is an urgent need to find a middle ground.

6) The opportunities for acquiring and assessing active learning skills are limited. Active learning is associated with a set of student activities and approaches, such as:

- How to ask the right questions
- Self-confidence to perform, to make mistakes, to not be fearful of traditional authority systems
- Confidence and flexibility of mind
- Eagerness to learn
- Cooperative learning
- Problem-based learning
- Use of case methods and simulations

The rigid, exam-validated curricula for average students are not conducive to creativity and active learning. The focus groups provide anecdotal evidence of young people struggling to remain engaged in their learning. Young people live in an age of abundance when it comes to knowledge, potential channels for dissemination of knowledge and ability to learn. In an ideal world, productive learning engenders a desire for more learning. In reality, we are continuing to invest in a narrative of traditional schooling that is starting to break down. The learning students

do on their own is very different to the learning they do at school. Deep and powerful learning requires a personal interest; the time to reflect, challenge and learn during sixth form is limited by the pressure to pass exams within prescribed timeframes.

7) Studies have consistently found that only a small fraction of what is learned in the classroom is retained by learners, even a year after learning. Yet we continue to focus our efforts primarily on content knowledge, as is evidenced by the focus of our assessments. Students navigate through content-rich syllabi and success is totally based on the passing of summative assessments. We are not assessing many of the skills that really matter for students' future success. The majority of what we assess - content, knowledge, memory and basic skills - are the easiest to assess, not the most important. It is much more difficult to assess the literacies, skills, and dispositions that students need to succeed and lead a healthy, happy life, especially in a world where answers are everywhere via the technologies we carry in our pockets. In that world, creativity, curiosity, a change mindset, the ability to create, connect, and participate in networks - all of those are now required, yet few of those are currently assessed at all. Creativity is not a factor that can be assessed easily through summative exams. A solution may be to find a balance between teaching subject content, processes and skills. Subject content is liable to change more rapidly than change in thought processes. However, there is a conundrum since it is perhaps inconceivable to teach processes and skills without subject content.

8) Education systems are not designed to help people develop as creative thinkers. It is ironic (and distressing) that at the same time that machines are increasingly taking over workplace tasks that don't require any uniquely human abilities, our education systems continue to push young people to think and to act like machines. We need to stop training students for exams that computers can pass. Test and sanction are not aligned to the age we live in, when big data is also coming to education.

Challenge 5: MATSEC syllabi are perceived to be too demanding by learners

The Education Act (CAP 327) articles 74(5) and 75(6) include the statute for and the conduct of the Matriculation and Secondary Education Certificate Examinations[24]. The post-secondary sector is concerned with subjects or groups of subjects offered within the Matriculation Examination at Advanced (AM) and Intermediate (IM). Paragraphs 3 to 7 of the Conduct of the SEC and Matriculation Examination Regulations identify the procedures for establishment of MATSEC subject panels, including composition and roles.

In principle, there are safeguards when it comes to the standards being associated with the Intermediate and Advanced MATSEC syllabi. When a new subject is introduced, the syllabus panel consults the syllabi of foreign examinations board for subject content and standards and try to adopt similar standards in the syllabus they propose. Their work is always coordinated by one of the Principal Subject Area Officers of the MATSEC Support Unit who reports to the MATSEC Board.

The standard of examination papers is regulated by the process used for setting. Normally the paper setters' panels consist of a chairperson and two other setters, sometimes more, and a paper reviewer who does not set questions but reviews the draft paper to ensure it is of an appropriate level, within syllabus, workable by students in the available time, and that the language of the questions is clear and not ambiguous. The papers are then vetted by the MATSEC subject officers again. Then one must mention the post-examination scrutiny of the exam papers by teachers, students and parents. Their comments are taken into account when setting papers in subsequent sessions. Moreover, the whole panel of setters of papers is never changed entirely from one year to the next, to ensure continuity.

Nevertheless, MATSEC has long-standing issues related to syllabi, some of which are also documented in the 2005 and 2010 Ministry reports. As an indicator of outstanding issues:

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[24]   see: http://www.um.edu.mt/matsec/regulations/legalnotices/conduct_and_regulations

1) The establishment and management of subject panels continue to be a concern. Some subject panels are set up in the absence of the involvement of a head of department; others panels are set up on an ad hoc basis - for instance, in the event of third party interventions or when a proposal is not universally endorsed.

2) Some syllabi have too much content and / or content that is too difficult for the subject level.

3) There is a general feeling among students and teachers that IM level subjects cover more than one-third of the AM level as originally intended.

4) The IM Science syllabi and exams have no practical component.

5) AM & IM qualifications are not used solely for admission to the University of Malta. Irrespective of the official composition of subject panels, syllabi are primarily controlled by University of Malta heads of department. This is not a sustainable situation with the emerging landscape of further education in Malta, where alternatives are being provided to an academic path at the University of Malta.

6) Changes in the criteria for the award of the Matriculation Certificate have a number of implications:

A) University courses are more accessible as students can obtain passes in the required subjects one by one over a period of five years.

B) Candidates who take IM and AM examinations one by one can satisfy the criteria for the award of the MC by sitting and passing in four subjects only. There is then every likelihood that candidates will question the need to sit for two more subjects since they would still be awarded the MC irrespective of whether they pass or fail these subjects.

C) Students in the first year of their Sixth Form course are taking the chance of sitting for one or more IM and AM examinations before they are well prepared for them. All heads of Sixth Forms are strongly against such practice.

7) The high failure rates in SEC results in Maths, Maltese, English and Italian in 2016 cohort may be indicative of the disconnect between the standards expected by University examiners, and the real capabilities of youngsters leaving secondary school. As in the case of the SEC syllabus, the MATSEC syllabus is heavily based on content rather than skills. This leads to an endless cycle of cramming, private tuition, teaching to the test - coaching rather than educating.

8) If MATSEC is to be positioned as the curriculum for the 21st century, syllabi need to be evaluated within two mutually exclusive visions for post-secondary education:

A) Post-secondary is a period of formation, introducing students to special areas of study, analytical and critical thinking and personal development – a developmental approach driven by the requirements of the individual learner; or

B) Post-secondary is a period of concentrated study focused on obtaining the required certification for the tertiary stage of education as quickly as possible – a preparatory approach driven by the requirements of the next stage of education/work.

Both learner and teacher focus groups associate the syllabus with the second option, irrespective of whether it is more appropriate within the context of a 21st century education system for Maltese learners.

9) If current pass rates at MATSEC level are to continue in the foreseeable future, there is a risk that the gap between MQF levels 3 and 4 will continue to widen, making the upper level unattainable by an even higher proportion of students than at present.

Challenge 6: MATSEC syllabi are yet to be re-written within a learning outcomes framework

The hopes for 'change' in the curriculum for compulsory schooling are very much tied to the successful introduction of the learning outcomes framework (LOF)[25] in all stages of education. Learning Outcomes have been written for 48 subjects, from primary school to form 5. A programme for early years is also being written, as well as entry levels for special schools such as Inspire and resource centres. If used as intended, this approach will assess what the student has learnt as opposed to whether the teacher has achieved the learning objectives. Different methods of assessment are being proposed; practical, oral, ongoing, and not just summative. Certification at level 3 grades 1 to 5; level 2 grades 6 to 7; and at level 1 – is still being addressed to determine what can be achieved at each level to reduce early school leaving.

The work on adapting to the LOF regime at SEC level is taking a two-pronged approach: (1) grouping the LOFs into modules or units to facilitate the production of syllabi which can be followed at a national level in all school sectors while allowing as much flexibility as possible for teachers, and (2) adopting a model of assessment that allows for school-based assessment and externally set controlled assessment. It is essential to determine the assessment model for specific subjects before revisiting and constructing new syllabi. MEDE has been working closely with key stakeholders including the MUT, the Independent Schools Association (ISA), College Principals of the state sector and Church Schools Association (CSA) to discuss possible models of assessment to be used for the LOFs.

The implementation of the LOF is still subject to sectorial agreement between MEDE and MUT. However, aspects of this project are being implemented in the following areas:

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[25] The LOF is accessible at: http://schoolslearningoutcomes.edu.mt. LOFs were developed for the eight (8) Learning Areas (LAs), and six (6) Cross Curricular Themes (CCTs), as well as the Learning and Assessment Programmes (LAPs) for the various Subjects within the curriculum emerging out of the main aims set in the NCF for the Early Years (0 - 7 years), Junior Years (7 - 11 years), Middle Years (11 - 13 years) and Secondary Years (13 - 16 years) Cycles. The LOF and related Learning and Assessment Programmes (LAPs) have been developed in 2015 with the involvement of a wide-ranging spectrum of professionals and representations mainly hailing from the DQSE, State Schools, Church Schools, Independent Schools, MCAST and the UOM from the local scenario and contributions from a consortium having international experts in the field, to ensure both quality and relevance.

(i) Five Vocational Education and Training (VET) subjects have been developed by MCAST and ITS in collaboration with the MATSEC Board, approved by the Senate and guaranteed parity of esteem as other SEC subjects. The subjects have been launched and adopted by all Secondary State Schools (with a minimum of three to five VET subjects), virtually all Church Secondary Schools (most schools with 2 VET subjects) and a few Independent Schools. The accessibility to such VET Subjects and opportunity for learners to enrol is being widened annually with numbers of participants increasing rapidly.

(ii) The Subject Proficiency Assessment (SPA) in foreign languages is using the Learning Outcomes Framework as the basis of the syllabus. This was initiated as a pilot project in Italian in two specific schools, and has today reached a stage of national roll out in State Secondary Schools for Italian, French, German and Spanish. It is also being introduced in a number of Church and Independent Schools.

(iii) The initial phase of the training sessions for teachers for the implementation of the LOF have been conducted in numerous schools (primary and secondary) and is planned to continue, pending agreement with the MUT, throughout scholastic year 2016/2017.

(iv) Education Officers of the different subjects are using the LOF to prepare resources which complement the Learning Outcomes of their respective subjects at primary and secondary school levels.

(v) Teachers of Drama have devised their curriculum, currently being offered to learners, based upon the Learning Outcomes Framework for Drama as developed in ESF 1.228.

Within this context, the LOF should also be seen as an approach that will facilitate alternative approaches in compulsory schooling. The Learning Outcomes Framework (LOF) which will be introduced at SEC level by 2019-2020 will result in changes the teaching approaches, the subject content, and the assessment of the subjects taught at this level. Consequently, these changes will affect the teaching, the subject content and the assessment at the post-secondary level.

1) At this juncture, the learning outcomes exercise has yet to be extended to the post-secondary sector. Technical studies focusing on learning outcomes in Malta to date have not addressed the critical age group of learners aged between 16 and 18. Learning outcomes for courses at AM and IM levels therefore still have to be articulated.

2) There is a long-standing cultural issue that needs to be resolved if the changes proposed by the technical studies are to be adopted and accepted by all stakeholders. The legacy of passing summative examinations as the benchmark of success means that grades, not learning, are the outcomes that are of interest to the vast majority of students and parents. The exam culture is obscuring the fact that young people are not learning as much as they could: they study to pass tests. Once the tests are passed, any 'knowledge' and information is rapidly forgotten as the student prepares for the next test. There is a need to shift towards productive learning.

3) The attitudes and outcomes of the 16 to 18-year-olds is a result of attitudes that would have been developed earlier on in the student journey. The curriculum in the early years was written around the needs of the students of this age group, which is something that is forgotten at post-secondary, where there are other skills that the students need to and are expected to learn. The developmental needs of this age group are not being recognised or addressed adequately.

4) The quality and relevance of learning outcomes are key for the development of skills and competences. The post-secondary syllabi will need to be re-written to test skills, rather than the content. It is recommended that the learning outcomes for the post-secondary sector incorporate the 21st century skills identified in challenge 4.

Challenge 7: Technology in education is currently focused on ICT and Computer Studies, not digital pedagogy

Technology has the potential to be a sustainable, positive force for change of the post-secondary education system. Malta continues to invest significantly in the upgrade of digital infrastructure in the classroom - from Wi-Fi and whiteboards to laptops and tablets. At the class level, the introduction of computers and the smart board has already had a very significant effect. Teaching has always involved 'bringing in' the outside world into the little world of the classroom, traditionally mediated through the teacher and audio-visual materials. The smart board or electronic white-board enables the fully prepared teacher to bring in the world in a much easier, more personalised, and versatile manner. Some teachers already make excellent use of this equipment to improve the effectiveness of their teaching; others struggle or ignore the technology.

The Internet, and social media in particular, offer unprecedented, almost limitless opportunities to spreadi knowledge and ideas. By providing instant access to vast amounts of information, as well as unfiltered access to a wide range of education sources, they can have a significant impact on opinions and perceptions. They also offer users a platform to produce content themselves, thus unlocking talent and creativity and promoting innovation.

1) Successful deployments of technology in education systems tend to focus on using technology to resolve existing policy challenges in education as opposed to providing readily-available, 'imported' solutions. As a benchmark, and to provide context to the Malta situation, these educational challenges tend to gravitate around six contexts:

- Fostering the use of new forms of learning for the 21st century
- Fostering teachers' professional development and engagement
- Containing public and private costs of education
- Continually improving the quality of educational resources
- Widening the distribution of high-quality educational resources
- Reducing barriers to learning opportunities

2) For many years, ICT in secondary education was limited to the European Computer Driving Licence. Technology in education in Malta is only present as stand-alone ICT subjects, with the few attempts at instructional activity in education technology concentrated on the development of foundational ICT literacies, and perhaps some efforts to develop competencies and character qualities as part of the systems of knowledge curriculum. To illustrate - the following list, adapted from the Horizon 2016 report, will be familiar to many students but has little resonance with the teaching and learning that happens at sixth form colleges in Malta and Gozo:

CONSUMER TECHNOLOGIES

- 3D Video
- Drones
- Electronic Publishing
- Quantified Self
- Robotics
- Telepresence
- Wearable Technology

DIGITAL STRATEGIES

- Bring Your Own Device (BYOD)
- Flipped Classroom
- Location Intelligence
- Makerspaces
- Preservation/Conservation Technologies

INTERNET TECHNOLOGIES

- Bibliometric and Citation Technologies
- Cloud Computing
- Networked Objects
- Semantic Applications
- Syndication Tools

LEARNING TECHNOLOGIES

- Digital Badges
- Learning Analytics and Adaptive Learning
- Mobile Learning
- Online Learning
- Open Content
- Open Licensing
- Virtual and Remote Laboratories

SOCIAL MEDIA TECHNOLOGIES

- Crowdsourcing
- Online Identity
- Social Networks

VISUALISATION TECHNOLOGIES

- 3D Printing/Rapid Prototyping
- Augmented and Virtual Reality
- Information Visualization
- Visual Data Analysis
- Volumetric and Holographic Displays

ENABLING TECHNOLOGIES

- Affective Computing
- Flexible Displays
- Machine Learning
- Mesh Networks
- Mobile Broadband
- Natural User Interfaces
- Near Field Communication
- Next-Generation Batteries
- Open Hardware
- Speech-to-Speech

TRANSLATION

- Virtual Assistants
- Wireless Power

3) Malta remains in a state of infancy in relation to digital pedagogy. There is little understanding of Open Educational Resources and even less indication of OER application in the curriculum, despite the publication of the Cape Town and Paris OER declarations, EU initiatives with Opening up Education and several reports from the EU's Joint Research Centre[26]. Digital literacies are not a staple part of the curriculum. The publication of a Digital Literacy green paper in 2015 is an indication that MEDE intends to incorporate digital education as a cornerstone of future education policies. The green paper includes the following paragraph which summarises the challenges faced by educators and students:

Changing teaching approaches, and understanding how we learn in a technology-driven world requires a different mindset, in and beyond the classroom. Thus, the first step is to help all educators to accept that there is a need for change because the world has changed drastically and is continuously changing at an alarming rate. The second step is to continue to help educators understand that technology can help them achieve easily the heights that are unreachable without digital tools. In practical terms this boils down to tackling literacy beyond the 3Rs and we as educators start encompassing the 6Cs or 21st century competencies: collaboration, communication, critical thinking, creativity, citizenship and character education.

4) Students' world outside school and the technologies they use for life appear increasingly disconnected from what they encounter in the classroom - from the modes of teaching and learning to the actual dynamics of the classroom. The great disconnect is that young people are learning on their own technologies, outside the traditional curriculum, without the participation of teachers. Many Maltese sixth formers are accessing content on platforms such as *edX, Coursera, FutureLearn, Udemy, Alison* and others. The world of education is changing through the development of MOOCs and open educational resources and yet there is little indication that the Maltese education system is prepared for the changes that need to be made to pedagogy to account for the digital world. In a time when learners can easily claim that 'all knowledge is found on the net', the curriculum remains locked.

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[26] See glossary

5) Rather than a cheap means of reducing human interaction, technology should be primarily associated with developing 21st Century skills which place primary value on communication and critical thinking. When planned and implemented properly, technology can reduce the time spent on passing-on-of-information, with the time gained used for the much more valuable process of interaction with students, the 'give and take' discussion form, debates, challenging attitudes etc. which should be at the real centre of the educational process.

CHALLENGES TO PEDAGOGY AND ANDRAGOGY

Challenge 8: Lack of Teacher Training and continuing professional development

Training for teachers is regulated by the MEDE-MUT collective agreement. There are on-going discussions for a new sectorial agreement with MUT that includes a different framework for teacher training and CPD. The current agreement states that:

"All teaching grades, including KGAs and LSAs 'shall be required to attend in-service training for three working days immediately prior to their reporting for duty in September or immediately following the closure of schools for the summer recess. During the in-service training periods, staff development and/or curriculum development and/or school development on a College or school basis or otherwise shall take place" (pg. 40).

"A schedule of courses, seminars, conferences, and fora shall be planned for every term by the DQSE and the DES in collaboration with the Colleges and made available to the Union in advance. Ad hoc training courses may be organised for Teachers on day-release basis. All College and school-based teaching staff shall be required to participate in one day-long School Development Plan day dedicated to the review and planning of the school's SDP. This school day shall be during full days; during this day, students will not attend school. All College and school-based teaching staff shall be required to participate in three sessions of two hours each after school hours, spread over the scholastic year. During these sessions, staff, curriculum and, or school development, on a College or school basis or otherwise, shall take place. The DQSE shall monitor and advise on the effectiveness of these sessions. Attendance shall be remunerated at overtime rates. Each school is also allocated one afternoon per term, during school hours, to organise a school development session (staff meeting)" (pg. 48).

The focus groups reported significant differences in the quality of teaching and general teaching methods deployed in sixth forms. There are also concerns among teachers that the current training and CPD offers do not meet either teachers or student needs:

1) The teacher plays a pivotal role in the post-sixteen learning process, indicating how teacher-student engagement is perhaps the most vital component of a successful learning experience.

Sixth form students are not yet fully autonomous learners, and their engagement and learning outcomes are correlated to the teacher's engagement with both the subject and the students. The enthusiastic teacher carries his / her students on the learning journey; the disengaged teacher only succeeds in boring students and killing their enthusiasm. It has long been known that teacher student engagement is perhaps the most vital component of a successful learning experience. Students pointed out the importance of the teacher in the post-sixteen learning process, which in itself, indicates that they are not fully autonomous learners. Students attending schools where teachers are more supportive and have better morale are less likely to be low performers, while students whose teachers have low expectations for them and are absent more often are more likely to be low performers, even after accounting for the socio-economic status of students and schools.

Participants in the focus groups gave primary importance to the teacher-student relationship not only at the post-sixteen level but at secondary and University levels. The selection of teachers should not be conducted exclusively on the basis of academic qualifications, but also on the basis of human qualities and soft skills. Moreover, teaching skills are likely to differ at different levels: an exceptional teacher at post-sixteen level might struggle teaching primary level students. Teachers at the post-sixteen level should be able to generate enthusiasm for the subject as well as securing the student's trust. Continuous professional development is of primary importance in the generation and maintenance of a learning community. In some subjects, teachers need to be offered training which will keep them abreast of the latest developments in their field.

2) Schools should provide opportunities for, and remove barriers to, continuing professional development for teachers. There are few relevant opportunities available for professional development and teachers are offered no incentives to participate. When available, teaching schedules are likely to conflict with opportunities to develop professional skills. Although teachers in primary and secondary schools are being prepared pedagogically, there is no equivalent training being provided to teachers/lecturers who work in post-secondary institutions. Teachers perceive existing teacher training as a) ill-timed; (b) not always relevant to the teachers' needs; and (c) mainly top-down and lead by the establishment. Although teachers in primary and secondary schools are required to attend pedagogical training, there is no equivalent

training being provided to teachers/lecturers who work in post-secondary institutions. The level of training for teachers in different institutions is not standard. A teacher at GCHSS higher secondary needs a degree and experience in the secondary sector to teach. Lecturers at JC and MCAST need not have teaching experience.

3) There needs to be an investment beyond the initial professional development of lecturers, VET teachers, trainers and mentors. The most effective CPD appears to be training which is spread out over a period of time, allowing educators to try out some of the material in class or elsewhere, whilst allowing for feedback and ownership of the training material. The DQSE has successfully participated in an EU-funded training programme entitled PRIMAS[27], for teachers of science and mathematics. 10 train-the-trainers and 50 secondary school teachers participated in a two-year training programme in the pedagogy of inquiry-based learning in science and mathematics. An international website supported the training programme, which was also worked in collaboration with the Faculty of Education, University of Malta. This train was successful as evidenced by the pre-and post-feedback questionnaire results and by the fact that a number of trainers initiated a Masters or a PhD course related to the area. Another instance of successful training was the BTEC training of 10 teachers who were trained in the teaching of vocational subjects. BTEC provided training both in the UK and locally for a small group of teachers, who eventually were fundamental to train other teachers in the pedagogy and the assessment of teachers who potentially wished to teach vocational subjects. Again, this training was spread out over three-year, was ongoing, and feedback to trainers was detailed and supportive. The introduction of Subject Proficiency Assessment pedagogy in the teaching of foreign languages is also proving the need for ongoing, feedback rich, teacher drive training, which can guarantee the success of such initiatives.

4) Teachers' skills cannot remain limited to academic qualifications. Qualities such as those identified in 21st century skills model - including communication skills and empathy - are as vital for teachers as they are for learners. Teaching skills also differ at different levels, including between the first and second year of sixth form. Teachers believe that the current arrangements

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[27] See http://www.primas-project.eu/

for CPD do not meet the requirements of the sector: training is sporadic, and primarily organised with secondary school teachers preparing students for completion of SEC level examinations. There is no training which addresses the specific pastoral needs of adolescents.

5) Teachers currently believe that the best way of tackling these problems would be for CPD to be organised by the schools themselves as opposed to the Ministry, or by a specialist post-secondary team which can organise such sessions across all sixth forms. At present, heads of department at GCHSS are expected to attend one day a week at their EO's in order to prepare examinations etc. for the secondary sector while Heads of Departments at postsecondary do not have any assistance. One possibility is for the Heads of Department to be given the task of organising CTD as part of their duties. This is dependent on the Government-run Institutions being autonomous.

6) There appears to be a correlation between supportive teachers, the size of schools and the selection criteria for students. Mixed students' abilities in class also affect the ability of the teacher to give attention to all students.

7) There are unresolved issues with teaching and learning in Maltese - a situation which is being exacerbated as Malta becomes increasingly multi-cultural and where English, not Maltese, may be the lingua franca for some students. There are also unresolved cultural divides between students and sometimes, inevitably, with teachers. For instance, teachers at GCHSS have to cater for a majority of students whose primary language is Maltese.

8) Perhaps one of the biggest challenges with regards to continuous professional development for leaders and teachers/lecturers at post-sixteen level is to determine the type of teaching and learning strategies that should be promoted and developed. Pedagogical and andragogical theories need to be consulted in order to formulate teaching and learning strategies that are fit-for-purpose and that take into account the age group's specific needs. Practitioners in the field are only too aware of the importance of encouraging students to be self-directed and to be given the opportunity to take responsibility for their decisions. Bridging both (pedagogical and andragogical) theoretical standpoints is crucial. A rigorous analysis of needs and the collection of

suggestions from all stakeholders is advocated. This will need to be followed by the establishment of a shared vision co-constructed by the practitioners after they have reflected upon the needs analysis and the feedback collected. Often, if a learning-centred approach is to be employed, teachers/lecturers will need to adapt practice according to the various groups and their specific needs. Well-thought out individual plans, which are self-directed, to upskill all practitioners in the field - seems to be the most plausible, impactful and respectable way of tackling continuous professional development.

There is much merit in focusing on andragogy as a compelling learning theory for the post-secondary sector. Advocated by Knowles and others, the theory postulates that adult learning is different to children's learning and based on a number of key assumptions (see Figure 13 below). For lecturers and teachers to be successful in their teaching and learning strategies with the age group 16-18 year olds, since students at this level are 'neither fish nor fowl', we should be morphing pedagogical and andragogical theories to tackle their learning development.

Need to Know

Learner's Self-Concept

Motivation to Learn

Learner's Experience

Orientation to Learning

Readiness to Learn
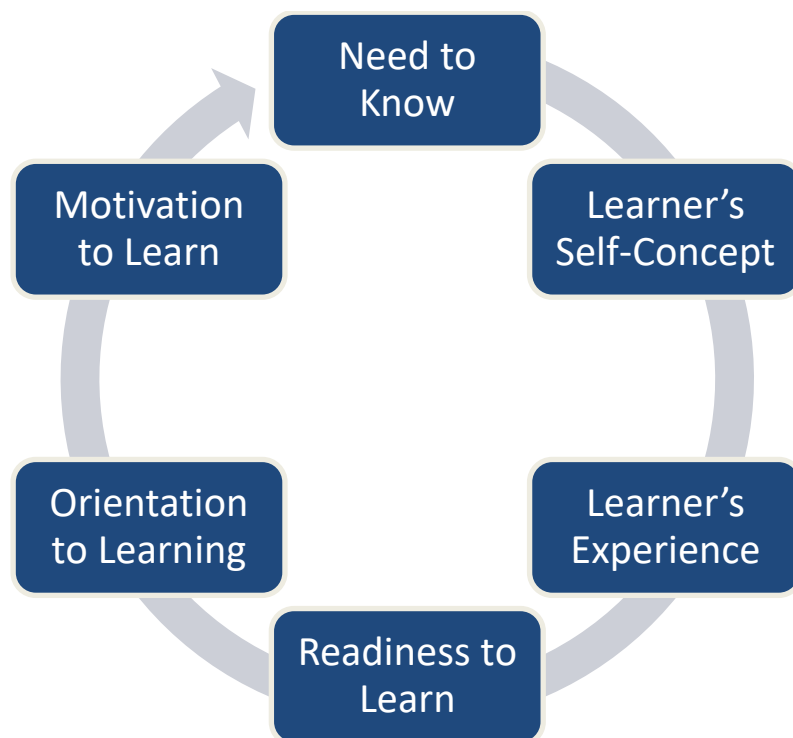
Figure 13: Knowles' Six Assumption

CHALLENGES TO ASSESSMENT OF LEARNING

Changes in the assessment of learning in Malta, where 'high stakes' examinations are still important in determining educational progress, have always raised concerns and faced a number of difficult challenges. In the 1970s, after the extension of secondary education to all students in October 1970, the removal of the entrance examination and annual examinations in secondary schools caused disruptions in the system at this level. Many parents started to send their children to private schools and students in state schools created problems to teachers who were not trained to teach classes with relatively mixed academic abilities. After a few years in operation, this system failed dramatically, a high-stakes examination was introduced to select students for junior lyceums.

The traumatic experiences of the 1970s have left a scar on the Maltese educational psyche. This has resulted in a general perception and fears that the replacement of examinations with more equitable forms of assessment that recognize diversity will have a negative influence on the educational system. These concerns came to the fore in 2007 with the proposal to remove the Junior Lyceum entrance examination and the Common Entrance examination to Church boys' secondary schools and conduct a benchmark survey at national level in Maltese, English and Mathematics.

Since then, thousands of 16-year-olds have left school without certification, with low self-esteem and no enthusiasm for further learning. This time round, we must ensure that the reform succeeds. For this to happen we must recognise the challenges faced in the 1970s and later and analyse why they overwhelmed the thrust of the reform. The challenges that will need to be tackled include: the proper preparation and support for teachers and SMTs; socio-cultural issues brought up by parents; technical issues concerning the validity, reliability and practicalities of the new forms of assessment; union matters; and political expediency.

Challenge 9: MATSEC is a credible, internationally-recognised assessment system which needs to be updated

The assessment regime for the post-secondary sector is administered by the MATSEC Examinations Board with a framework regulated by a set of legal notices[28].

We reiterate the view of the 2010 review that the MATSEC system remains an appropriate, tried and tested accreditation system for an academic path. MATSEC examinations are internationally recognised, aligned with local educational objectives and context and eliminate cultural bias that may occur in examinations set by foreign boards.

Nevertheless, **t**he majority of the recommendations for changes to the MATSEC system in both the 2005 and 2010 reports failed to be implemented[29]. In 2016, these recommendations need to be re-visited within today's context, particularly within the context of:

A) attaining 21st century skills;

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[28]   see http://www.um.edu.mt/matsec and
http://www.um.edu.mt/matsec/regulations/legalnotices/conduct_and_regulations

[29] When MATSEC was set up in 1991, it was required to provide assessment and certification for 80% of the cohort as opposed to the foreign GCE O-level which was designed to assess the top 20-25% of the cohort. The 80% target was achieved very early on but it was soon found that besides the 20% not sitting for the SEC exams, there was another 13% failing all exams. Considering these data, MATSEC made two suggestions: (1) set exams at a level that can cater for the 33% who were failing, and (2) introduce vocational subjects to cater for students who wanted to follow a different path to further education or employment. These suggestions appear in the 2005 report MATSEC: Strengthening a National Examination System. These suggestions were not taken up at the time and MATSEC was only approached to offer vocational subjects in 2014. This suggestion was taken up and put into operation immediately by MATSEC and with the help of MCAST and teachers trained to teach vocational subjects. Furthermore, the University Senate decided on parity of esteem by including the vocational subjects in the list SEC subjects and having the same grading scheme so that the results appear in the same format on one certificate. Whether schools, parents, local and foreign post-secondary and further education institutions, and employers give them parity of esteem depends on their own individual decisions; MATSEC cannot dictate the decisions they take. What is sure is that the University has decided that vocational subjects are accepted as all other SEC subjects for admission to the Junior College. Such decisions will affect a large number of students since so far in Forms 3, 4 and 5 there are 1480 students taking vocational subjects and the number is likely to increase in future years with the addition of more subjects.

Over the past 15 years or so, the University has offered the administration of SEC examinations to the Department of Education; once when it was still the Education Division and another time when the DQSE had just been formed. However, the offer was rejected by the Department of Education on both occasions. In so far as post-secondary institutions or any other institution are concerned, MATSEC or the University has absolutely no authority to stop these institutions from setting their own benchmarks and issuing their own awards and certificates.

B) reducing the number of early school leavers and 'pushed out' learners; and

C) increasing the number of young people who proceed to further education, and in the process widening access to University and MCAST, making further education and lifelong learning more compelling to young people.

Although MATSEC is not necessarily the ideal channel for those learners wishing to pursue a VET path, it has recently added a further VET subject, SEC Media Literacy, to the five VET subjects already in place. Whether it is MATSEC that should introduce VET subjects at the Intermediate and Advanced levels needs further discussion.

Within this context, the current assessment system provides a number of challenges:

1) MATSEC is a 'one size-fits-all', summative, 'paper and pen' exam-based assessment system. Supporters of alternative learning systems believe that it rewards memory as opposed to learning skills, and that it propagates a model of teaching and learning that is reinforced in higher education. Perhaps the most distinctive feature of the present system is the consideration of the learner as a recipient of knowledge for two years and then testing what he or she can memorise and reproduce in some hours of writing. Success is associated with accommodating knowledge for the purpose of passing an examination. The system of summative examinations inevitably impacts students' future career prospects. Written performance in an exam depends on such factors as luck in sampling items, mood and ability to handle stress and tension contributed more to 'success' than any actual ability or acquisition of 'knowledge'.

2) Postsecondary syllabi panels have a wide representation from key stakeholders, including social partners. However, in practice, the Matriculation exam-based system is primarily developed by University academics for average students intending to follow an academic path that leads to a degree from the University of Malta or some other academic institution, and a future career. It is not necessarily the right assessment system for young people planning a VET

route. Without the Matriculation Certificate, and a pass in SEC Maltese, English Language and Mathematics, students cannot be accepted to pursue a course at the University of Malta.

3) The need for summative assessments at the end of years one and two mean that the two years of sixth form devoted to teaching and learning are in practice reduced to one year and a few months, since MATSEC exams begin in March. It is difficult to associate post-secondary with a period of formation for students, particularly with students sitting for MATSEC exams before the two years have elapsed and others actually entering first-year sixth form having already sat for some MATSEC exams. This is one of several reasons why students need to be encouraged not to sit for their exams before the age of 18.

4) There are significant, long-running challenges in organisation and logistics associated with MATSEC examinations. A typical MATSEC timeframe spans from 10 March to mid-June, further constrained by Easter dates, possible clashes with exams from other awarding bodies, scheduled or unscheduled national events and the actual availability of suitable examination halls in the morning. The supplementary session in September is discriminatory at all levels for SEC, AM and IM exams. While MATSEC requires that a student has to be in his last year of compulsory schooling or 16 years old to sit for SEC, there is no age restriction on students sitting for intermediates or advanced level subjects. Technically a 15-year-old can sit for IM and AM levels but not SEC level exams.

5) Teachers are concerned about students in Form 2 (Grade 9) being asked to choose option subjects to be followed for the next 3 years. This choice probably comes about too early in the life of the student, with some teachers recommending that be moved to Form 5 (Grade 12).

6) The curriculum and assessment systems treat the individual as an "average learner" in a mass supply system of learners. There can be little space within the system for personalised Learning - where learners are provided with support for their personal, socio-emotive, intellectual and physical development. MEDE's intention to facilitate alternative pathways throughout the education system means that at some juncture policy-makers must engage with discussions related to average learner systems for academic pathways vs. personalised learning systems.

To contextualise - this is an adapted excerpt from a TEDx talk by Todd Rose[30], an educator:

"Our education system is built on the assumption there is an average student - textbooks that are designed to be age-appropriate, that are designed for the average student of that age. Standard assessments are explicitly designed on the basis of a comparison to a hypothetical average student. Curriculum materials are designed and prescribed for a standardised sequence and standardised time for learning, and we set those sequences and fix time based on what we know about learning on average. Education systems were originally designed in the industrial age by people who were obsessed with averages since these worked so well in managing factories. The system did what it was designed to do – to prepare generations of students for standardised jobs in industrialised economies. But the changes of 21st century mean that our education must change. Our goal has to be to help each student become the best they can be. Students should not be ranked against an average. We need to treat students as individuals. This is a tall order and there is a good reason why we have not done this before. We know how to do this now in science. There is a science that is specialised in understanding individuals - indeed, it is called 'the science of the individual', highly-interdisciplinary, rooted in the mathematics of dynamic systems and up-ends how we think about individuals in groups. Even though it's young. it has led to breakthroughs in everything from cancer research to study of human development to treatment of diabetes and the understanding of human memory. We can use this science to build an education system that can think of students as individuals. The breakthrough after scientists overcome a mental barrier. That you cannot understand individuals using group averages. It is a necessary first step and only way that we can build an education system that can nurture potential of all students. We can choose to double down on 19th century view of average student - or we can choose to follow in the path of fields such as biology, oncology and neuroscience and shift our focus on to individuals. Doctors can cure individual cancers. Biology can study individual cells. Neuroscientists can understand individual brains. And we can finally teach individual students. But we cannot do it on average".

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[30] See https://www.youtube.com/watch?v=4eBmyttcfU4

Challenge 10: More flexible, modular VET paths need to be developed to assess skills

The majority of qualifications frameworks around Europe but also those of Australia, New Zealand, Hong Kong and South Africa are all comprehensive frameworks which place VET and academic programmes in the same framework. Countries such as Germany and Holland, claim that up to 60% of their student cohort are learning in the vocational/applied path. Students studying these paths feel at par in esteem with the other students in the academic/university paths. All learners secure a sense of progression that can be achieved by climbing up the ladder of qualifications, moving towards lifelong learning on the basis of their formal, informal and non-formal learning. Bearing in mind that Europe today has 62.8m low-qualified adults who do not participate in education and training, the need to attract people to learning is high on many national agendas. The New Skills Agenda gives high priority to the need for higher-quality VET and work-place/based learning. Despite the positive integration of VET graduates in the labour market (in many sectors), families and learners continue to perceive VET as a second/last choice. The same applies to the image of apprenticeships or learning by doing as well as work-based learning (which is ultimately what happens to all of us when we leave tertiary education – you simply learn by doing work and more work).

The VET path in Malta is becoming more clearly identified with the significant re-positioning of MCAST as a three-tier institution (three inter-related Foundation, Technical and University colleges) that provides an alternative pathway to the academic route to University of Malta, or universities elsewhere. There is nevertheless a great need for the design of new, flexible alternative VET pathways to and from MCAST and other VET institutions as these emerge.

1) Malta still needs to develop an applied syllabus for some of the vocational subjects. An applied syllabus is one that starts from the hands-on application and delves into the theory at a later stage. Industry, in its diverse fields, can provide support to secondary schools to develop such syllabi, appropriate resources and teacher training in these areas. The choice of subjects at secondary schools is vast but limited to the same type of subjects. Some students do engage successfully with the subjects presently offered by schools, but other students do not. Hence the

provision of different types of subjects (pedagogy and assessment) will help more students to engage with learning. It is a necessity that all learning will lead to further learning opportunities at post-secondary education. Learning in vocational subjects, at secondary level, is already organized in modules, thus the provision of remedial modules and/or further modules can be structured in a way as to have a seamless transition between secondary and post-secondary in the area of VET. MCAST and ITS should remain the main providers of vocational/applied learning. However, applied learning can be diversified to cover skills which are not presently available. Industry can provide information about the skills gaps that presently occur whilst supporting their provisions through human and physical resources.

Local alternative learning routes are designed at MQF level 1, with some programmes not even being accredited. These programmes were first designed for students who fail mainstream general education at MQF Level 4 and or who exhibit behavioural problems. Rethinking how institutions work is a long-term impact trend that requires governments to prioritise major education reforms that help colleges structure themselves around increasing the employability of their students. The EU's New Skills Agenda is one of a number of policies that will be rolled out to help institutions adapt their models to better support evolving student and workplace needs.

2) Like other countries, Malta continues to experience a divide between vocational and academic education. We need to raise the status and quality of vocational learning, not just focus on the academic route through education. The National Lifelong Learning Strategy 2020 includes a number of programmes related to the accreditation of non-formal, informal and work-based learning, but progress on accreditation and assessment of such learning has been slow to date, and particularly when compared to other countries.

The labour market today is a completely different reality and the new approach by countries like Switzerland, Hong Kong and Canada as well as UNESCO are bridging the divide and rebranding VET to (i) attract more learners, (ii) give a true parity of esteem to vocational education and training especially to parents, aspiring learners and employers and (iii) uplifting the dignity of

work and working conditions to those workers who earn their living by performing manual work (which inevitably will also require thinking/critical skills)[31].

3) The MATSEC Board has started to offer the following five vocational subjects at SEC level (MQF Levels 2 and 3) as from scholastic year 2014-15: Agribusiness, Engineering Technology, Health and Social Care, Hospitality, and Information Technology. In the first year, eight secondary schools (6 State, 1 Church, 1 Independent) introduced one SEC (Vocational) on a pilot basis (actually one state school chose 2 subjects) and 92 Form 3 students in all took the subjects as one of their option at school. The syllabi were developed by BTEC trained teachers, MCAST staff and ITS staff (in the case of SEC Hospitality). The regulations were developed by the MATSEC Board whose membership was expanded to include representation of MCAST and ITS. In the second year, 2015-16, eighteen schools are teaching one or two vocational subjects and next year all secondary schools will be included in the project. MATSEC is monitoring and evaluating the implementation and making amendments in the syllabi suggested by the teachers and refining the regulations as necessary. The first evaluation report is available on the MATSEC website in the link 'Research & Development'.

4) A litmus test of a commitment to VET will be increasing the number of students who can join University courses through non-MATSEC routes by increasing the number of courses where vocational qualifications are recognised as entry qualifications to University. In 2012, the University Senate had agreed that applicants for admission to Junior College can present a pass in one BTEC vocational subject as one of the two optional subjects that are required besides passes at SEC level in the core subjects Maltese, English Language, Mathematics and a science subject. In 2016, Senate extended this regulation and now the requirements for admission to Junior College are the four core subjects plus any two other SEC subjects, which can include two SEC (Vocational) subjects.

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[31] The most popular form of upper-secondary level education and training in Switzerland is VET, providing two-thirds of young people in Switzerland with a solid foundation in a given occupation. It also forms the basis for lifelong learning and opens up a wealth of job prospects. See: http://edudoc.ch/record/106675/files/EN_FaktenZahlen_2013.pdf

CHALLENGES IN MANAGING INFRASTRUCTURE

Challenge 11: MATSEC Exam schedules put pressure on teachers, students and the MATSEC Examinations Board

Two sessions of Matriculation examinations (AM and IM) are held annually. The first session is held between April and June and the second session in September of each year. Applications to sit for the first session of MATSEC examinations are managed by the Department of Examinations of the Ministry of Education and Employment. Secondary Education Certificate (SEC), Intermediate Matriculation (IM) and Advanced Matriculation (AM) applications can be submitted online.

The exam schedule is subject to a number of logistics challenges for both institutions and students:

1) With the exception of MCAST that has flexible provisions in place for its students, the second year of sixth form for students and teachers ends just after Easter. This means that: a) there is no time for teachers to help students consolidate the learning - even if they do manage to get through all the syllabus; and students have less time to learn, with the second year inevitably becoming an exercise in cramming on content in the attempt to pass the summative exam.

2) The 2010 MATSEC report had recommended changes to the timing of MATSEC exam sessions to the effect that a) the May session be moved to June; and b) the supplementary session to January. This would also allow provisional entry to University and Sixth form for those who have narrowly failed. However, no progress was made in implementing changes to the exams regime, among fears that changes would raise strong objections from students and parents, while the University and the Sixth Forms would find administrative difficulties in accommodating provisional students. Nevertheless, the working group believes that the above recommendations require serious consideration, since there are significant difficulties of organising supplementary sessions within the current exam timeframes and expectations for publication of results. As a clarification - it is unlikely that there is another awarding body world-wide at the level of MATSEC that offers a supplementary session within a month and a half of the publication of

results of the main session. MATSEC results are published July 15 and supplementary exams take place in the first week of September.

3) MATSEC examinations at SEC and Matriculation Certificate level are clearly determining the number of students who progress to post-secondary and tertiary education, especially the academic stream. Although MATSEC examinations determine whether students qualify for the academic route or not, it is clear that the academic route is not the only route to postsecondary and tertiary education and students are becoming aware of this. Performance in MATSEC examinations nevertheless may also influence participation in vocational post-secondary and tertiary courses.

4) Some students try and sit MATSEC exams in first year of sixth form, despite the fact that this, in principle, goes against the fundamentals of the intermediate exam system in place to encourage 'width'. In practice, many students and teachers interpret width and the Systems of Knowledge exam as an additional imposed obligation that simply increases pressure on both students and teachers. Heads of all sixth forms - State, Church and Private Schools - are in agreement that students should not be allowed to sit for MATSEC examinations before they have completed the full two years of post-secondary education. These institutions represent the absolute majority of students who sit for the IM and AM exams.

5) Private candidates cannot and should not be prevented from sitting exams prior to the end of the two-year period. There are also cases of highly intelligent students who would like to sit certain subjects after a year. Certain 17-year-old students are sitting for extra subjects as private candidates because these subjects were not offered by the sixth form of their choice. These students should clearly not be precluded from sitting for exams in these subjects.

Challenge 12: Teachers need to have support systems in place

Teachers and sixth form lecturers are pivotal elements in the success or otherwise of the post-secondary learning experience. Students consistently associate effective learning with the enthusiasm of the teacher in the class room. Teaching skills, personal attitude, lesson planning, fair treatment, teaching methods and teaching pedagogies, all influence learner engagement on one hand and the interest in the subject taught on the other. The teacher 'makes or breaks' the system and has a huge influence in the learner experience.

1) Teachers need better support systems to help them deliver a significant volume of content within the two-year sixth form timeline. The workload, the pressure to complete the syllabus and 'carry' students to their exams, and the limited for active teaching and learning time make the teaching experience at sixth form particularly challenging. It is difficult to establish an interactive atmosphere or close rapport with students in these conditions.

2) There are few opportunities to incentivise individual teachers - for instance, those willing to make a different despite the current difficulties and go the extra mile or who can rapidly use 21st century skills as drivers for learning outcomes for their subject.

3) Teacher morale is critical to the success of the system. The yardstick tends to variables such as a transparent, achievable career path; conditions of work and financial package. The teacher focus groups at GCHSS, Church and independent sixth forms were vociferous in pointing to the disparity between their status and overall remuneration package and resources when compared with those of lecturers in Junior College. Junior College management, in turn, believes there is no disparity since the conditions of employment and work at the Junior College are different from those in other sixth form institutions:

A) Junior College lecturers are employed by the University, with University conditions regarding pay and allowances under existing collective agreements signed by the University with MUT;

B) Junior College lecturers are selected on the basis of a competitive process, as opposed to the process in other sixth forms (and particularly GCHSS);

C) Junior College lecturers do not secure an automatic right of promotion to teach at University;

D) Teachers at Church and independent schools are employed directly by the school concerned while teachers at GCHSS may apply for a transfer to the School from other State Schools.

E) The qualifications and work experience required for someone to start teaching at Junior College are not the same as in the other institutions. To be employed at the Junior College, one needs a minimum of a first degree and a second degree in the subject to be taught in addition to a minimum of five years' work experience, followed by a stringent selection process. As an example, a teacher with a first degree may be engaged to start teaching in a post-secondary institution but would not be eligible to apply to join Junior College.

F) There are other conditions of work applicable to Junior College lecturers which are different from those of others, including no restriction on the number of students in classes, holidays which are the same as those of University (no mid-term, carnival holidays etc.); the hours of work (08.00 – 17.00) are significantly longer than those in other post-secondary institutions.

5) The original scenario where only students with fewer SEC passes applied to GCHSS is no longer the case. Students with a full set of entry qualifications may prefer GCHSS for a number of reasons, including the perception that the student may be given more individual attention at GCHSS because of issues relating to the size of the institution. This situation appeals to some learner types and not to others, but is an issue that is confirmed by students in the Junior College and GCHSS focus groups who moved from one school to another. The same scenario applies to other students attending other post-secondary institutions including Private and Church sixth forms as well as MCAST.

6) GCHSS currently has little say or control in the personnel who start teaching at post-secondary level. There is a risk that teachers do not necessarily apply to teach at GCHSS for the

right reasons, and that the best and most qualified teachers at GCHSS apply for posts at Junior College as soon as these become vacant. Working conditions are considered to be better at Junior College than GCHSS by GCHSS staff.

CHALLENGES TO GOVERNANCE OF SECTOR

Challenge 13: There is a need for clarity on the governance of functions relating to curriculum, assessments, certification and service provision

Governance is one of four key variables in post-secondary education, where the success or failure of the education system is very much dependent on clear and consistent interfaces and processes between institutions, service providers and key stakeholders in the sector. Teaching and learning are very much the product of the Curriculum. Assessment is linked to setting and applying standards to assess and certify learning.

Within this context, Governance has much to do with developing vision and policy, regulation of service providers and ensuring interaction between competent authorities in the sector (see *Figure 1* in Approach section).

The key public institutions engaged in education governance functions on a national basis are the NCFHE, DQSE (proposed to be repositioned as the National Commission for General Education in the draft bills of the Education Act) and the MATSEC Board. In principle, the MATSEC board is responsible for designing, developing and administering the national assessment system for the post-secondary sector.

1) There is a need for clarity on the specific roles of key institutions engaged in both the governance of and provision of services to the post-secondary sector, to ensure they meet the needs of 21st century learners as identified in this report. Specifically, we need to clearly distinguish and segregate the key functions of accreditation, standard setting, quality assurance and service provision. Ideally, there should be no one organisation performing more than one of these potentially-conflicting key functions.

2) The relationships between and functions of the DQSE, NCFHE and the MATSEC Board need to be clarified. There are a number of practical instances where there appear to be overlaps or where one organisation is responsible for a number of potentially-conflicting functions:

A) NCFHE sets standards and operates as an accrediting body for Level 4 education upwards. It is also responsible for the accreditation of 'further education' from Level 1 upwards. The latter continues to be a nebulous term when placed in the context of 'non-formal' and 'informal' education which young people up to age 18 undertake - and which they hope will get recognised and eventually accredited. Further education has become tantamount to 'training' that can start at level 1: this training may also be undertaken by young people both within compulsory and post-secondary stages of education.

B) Currently, NCFHE is a standard-setting, accreditation and quality assurance body. It has the remit to accredit levels 1-3 within the lifelong learning cycle, but does not accredit MATSEC qualifications. This renders the MATSEC board both a regulatory and an accrediting institution, going against the fundamental segregation principle above.

C) Recent internal appointments within NCFHE are segregating the accreditation and QA functions, although these remain within the same organisation. In principle, quality assurance at postsecondary level is the responsibility of the NCFHE.

D) It is unclear which body should be the awarding body in the case of schools following the LOF but with their in-house assessment methods. Service providers technically should not also be regulators.

E) DQSE is currently responsible for setting standards for compulsory education up to level 3, with MATSEC responsible both for the setting of standards and accreditation of institution and programmes certification at compulsory level and for level 4.

Officially, MATSEC does not accredit institutions and programmes. It sets syllabi but school programmes are set by the schools according to their specific needs. MATSEC is basically an awarding body which certifies attainment. Its certification applies at the national level since there isn't another comparable awarding body in a small island state like Malta.

3) MATSEC and NCFHE are responsible for setting standards and accrediting the programmes delivered by service providers; in the case of NCFHE, accreditation extends to the accreditation of the service provider. These lacunae have much to do with issues relating to Malta's size and economies of scale - it may be difficult having two institutions working at arms-length to provide distinct but complementary roles. The awarding body accredits the way the assessment is set as part of the course programme, and not the assessment itself. In the case of MATSEC, for instance, the board is already familiar with the standards that need to be set to intermediate and advanced levels if the objective is to provide an academic route to University.

The current situation is not sustainable in the long term, particularly with the opening up of Malta's education landscape. There should be an external institutional body that is responsible for external quality assurance that sets standards and accredits the institutions and its programmes. If the regulator is NCFHE, then quality assurance of the assessment cannot also be done by NCFHE. While legal structures are in place for any institution to provide courses that it deems fit, there may be problems regarding certification and parity of esteem of such a course. Ideally a component of the course should be delivered separately from the institution that provides certification.

4) MATSEC's long-standing organisational, autonomy and identity issues need to be addressed. The MATSEC board continues to report into University, a service provider that is in a position to self-accredit its own courses (as does MCAST, with both institutions subject to periodic quality assurance reviews by the NCFHE). This situation is untenable and has been highlighted in previous reports on MATSEC but has not been addressed. The University is no longer the sole provider of higher education in Malta and the new Rector is on record on the need to revisit the MATSEC certification:

"The role of the MATSEC certification and examination system needs to be reflected upon and, if necessary, modified to suit changing realities. We must tread carefully here because mistakes could produce undesirable long-lasting outcomes: such a project can only be undertaken fruitfully with our partners in education, first and foremost, the Ministry for Education and Employment. There are other developments that need to be considered both for the SEC and

Advanced Matriculation system. In both, I will strongly support a system that rewards students and acknowledges achievement at different levels. Moreover, we need to reflect on the reasons why we are failing to retain in education about one third of the cohort of potential learners at secondary school. In partnership with our colleagues at MEDE we could help in the design of appealing curricula and bespoke assessment methods for these adolescents. Together with other stakeholders we should strive to not leave any adolescent behind in education".

5) The working group considered the merits of having separate examination regimes for SEC and Matriculation levels. It is clear that the SEC and MATSEC exam regimes are currently very much part of the same regime. The separation of the MATSEC exam regime from the SEC regime after the latter has been, in principle, re-engineered to accommodate the learning outcomes framework, would exacerbate the problem of continuity from SEC to IM and AM levels in each subject. Already scarce resources would either have to be duplicated or redistributed. The first attempts at SEC to accommodate modular set-ups need to be encouraged to identify formative as well as non-punitive summative forms of assessment.

6) The relationship between MATSEC and the Department of Examinations may need to be re-examined to determine if there is duplication or if there is potential for collaboration. The MATSEC Board was actually set up as the forum for such collaboration with equal representation from schools and the university, and this was enshrined in its statute. The new statute expanded on this concept and now includes the added representation of MCAST and the ITS. Some educators and continue to find it objectionable that the Board is accountable to the University Senate. In practice, the Senate hardly ever queries the decisions of the MATSEC Board regarding syllabi and assessment.

7) The size, scale and spectrum of needs of the sector are a challenge for effective Quality Assurance regime. QA in education is critical in order to guarantee a high quality educational experience for all learners. Essentially, it aims to ensure that nationally-set standards are being upheld through a systematic process and that post-secondary education is fit for purpose. QA in national assessment of educational outcomes within post-secondary education is tantamount to 'verification' - a system that ensures that all candidates entered for the same qualification are

assessed fairly and consistently to the specified standard. The inherence of rigorous verification processes in the reliability that may be attributed to such assessment is exacerbated by the value attributed to the qualification awarded through the specific national assessment particularly in recognition into further and/or higher education, other training and/or employment.

RECOMMENDATIONS

PREPARING FOR OWNERSHIP AND COMMUNICATION OF CHANGE

Recommendations 1 and 2 focus on the conditions that need to be in place to prepare for the implementation of the change programmes as outlined in this report.

Recommendation 1: Ensure policy buy-in translates into commitment to implement in sector within prescribed timeframes

Focus: Preparing for ownership of change programme

Addresses: All Challenges

This report is a call to action for much-needed change in the teaching, learning, assessment, infrastructure and overall governance of the post-secondary level sector.

The notion of 'rapid change in the education sector' is normally considered a misnomer, since education reform is normally identified in terms of years, with teachers and learners perennially 'locked' into education cycles (from 5 years for secondary to 2 years for post-secondary). In the case of the post-secondary sector, successive administrations have been alerted by experts in the field on the need to take corrective action since 2005. It is reassuring that at the outset, the Ministry for Education and Employment was receptive to the fundamental principle of building on the recommendation of other expert groups. The delivery of this report now needs to be backed by clear plans of action and pre-requisites: political will and stakeholder and public support to a reform programme.

Moving forward with this report implies a significant commitment by the Ministry to:

1) Review the findings and recommendations of this report at the highest level as a matter of urgency and determine the impact on central policy. At the outset, the internal review needs to be matched by a visible willingness to align policy, strategy and processes (including legislation, regulation, funding, quality assurance, IT infrastructures and pedagogical support for teachers) for the post-secondary sector in the short term, and mitigate the risk of conflicting actions and priorities. Reform in the post-secondary sector cannot be made in a piecemeal manner and therefore the whole educational spectrum needs to be considered when a change programme is being contemplated, including its impact on the secondary sector.

2) Secure consensus with stakeholders and social partners of MEDE's plans to implement change in the sector. This should ideally include discussions with the shadow Minister for

Education to secure consensus on a common reform agenda that addresses the challenges of the present and shapes a roadmap for the sector for the immediate future.

3) Commit to a budget for 2017 to cover incremental investment in human capital (such as teacher training and CPD) and infrastructure (technology, pilot projects etc.)

4) Identify and appoint a Task Force with clear terms of reference and resources to convert policy into a workable 3-year strategy and supporting action plan and lead a programme of change (see Recommendation 2).

5) Commence with implementation of a change programme as from Q1 2017.

Recommendation 2: Appoint a Task Force to develop and implement short-term strategy and associated programmes

Focus: Preparing for ownership of Change programme

Addresses: All Challenges

Subject to internal and external reviews and a commitment to move ahead with reforming the post-secondary sector, MEDE needs to clearly demonstrate its intent to drive the requisite change programme.

1. In Q4 2016, MEDE should kickstart the implementation stage by identifying and appointing an internal project team. The project team would be expected to:

A) Take ownership of this report.

B) Serve as the primary change agents for the post-secondary sector.

C) Provide ongoing support to the Task Force for the reform of the Post-Secondary Sector ('the Task Force').

D) Develop a short-term strategic plan with a set of associated programmes that can be implemented by MEDE and other stakeholders reporting into MEDE over a 3-year period.

D) Present the strategic plan to the Permanent Secretary and Task Force as required.

The project team would report on a regular basis to the Permanent Secretary to the Ministry for Education and Employment. In principle, the project team should be small - no more than 3 professionals. The development of this report points to the need for a small central project team as opposed to a large team.

2. During the same period, the Minister should appoint a Task Force that is empowered to manage public change initiatives in the post-secondary sector for a 3-year period. Members

would be constituted from representatives of post-secondary and higher education institutions, the NCGE, the NCFHE, social partners including MUT, the National Skills Council and representatives of parents and learners. The Task Force would report periodically to the Minister. In practice, the working group that developed this report can be considered to be an early example of the Task Force.

3. The Task Force would need to operate with clear terms of reference and deliverables.   Its remit should include:

A) Taking ownership of the strategy developed by MEDE's project team such that requisite changes are made to align post-secondary education in Malta to the needs of 21st century learners.

B) Reviewing the associated programmes and defining an annual implementation plan.

C) Commissioning research on a needs basis.

D) Issuing progress reports and communicating effectively with interested stakeholders on a needs basis.

E) Operating in a watchdog role to ensure that proposed changes in sector governance are undertaken as priority items.

F) Fast-tracking projects and resolving issues on a needs basis.

G) Developing coherent communications to key stakeholders on a needs basis, in concert with MEDE.

4. The Task Force would need to have access to a budget from MEDE so it may engage additional resources as required ensure specific programmes are delivered on plan and on time.

5. The Task Force should become a catalyst for collaboration between the MEDE and other Ministries, and attempt to bring to the public attention not just education, but also social issues which impact the critical post-secondary years.

PREPARING FOR CHANGES TO TEACHING AND LEARNING

The following set of recommendations (Nos 3 to 8) relate to preparing for changes to the Curriculum, and are loosely assembled around the following headings:

1) Vision – Aims of the Post-secondary sector
2) Pedagogy – Teaching Methods and Teacher Training
3) Curriculum Content – Subjects, Subject Content and Certification
4) Resources and Logistics

VISION AND OBJECTIVES

We need to re-envisage learning in sixth forms. More importantly, we need to identify ways in which long-standing recommendations on improvements - some dating back to 2005 - are finally implemented in our schools.

Recommendation 3: Develop a formal transition plan for all students moving from secondary to post-secondary education

Focus: Vision and Objectives

Addresses: Challenges 2 and 10

Once appointed, the Task Force should develop a plan that will support both teachers and students' efforts to manage students' smooth transition from secondary school to post-secondary education. This report and the focus groups have highlighted the need to bridge the disconnect between the secondary and post-secondary experience. While the education system continues to resist change, the learning system is being disrupted by a mix of socio-economic and technological forces. Yet policy-makers remain locked into a framework of fire-fighting and incremental investment that only serves to retain the status quo in the sector. The reluctance to implement sound recommendations of previous expert reports is disquieting. It is time for policy-makers to demonstrate their commitment to change by activating the recommendations of this report into concrete action that can address long-standing problems.

The transition plan can use this report as the basis from which to identify a set of existing issues within the education system that need to be changed or replaced in the short term to facilitate a smoother transition for young people moving from secondary to post-secondary learning. The development and publication of a transition plan has a number of advantages as a practical blueprint for change:

1) It identifies issues that act as barriers for students to seamlessly move from a secondary-school environment to sixth form. This report has already identified a set of issues, many of them inter-connected, that refer to teaching, learning, curriculum, assessment, infrastructure and governance - so there is a tangible point of departure for an implementation programme.

2) It visualises, identifies and articulates solutions to the current issues by drilling into the detail of the specific change initiatives that need to be kickstarted and delivered to eliminate barriers and reduce gaps, identifying actors and timeframes in the process.

3) It can direct incremental investment in the education system towards targeted change initiatives that are focused on the transition of students from secondary to post-secondary education.

The following are merely examples of 'known issues' that could be addressed by the transition plan:

A) Transitioning from a 'one-size-fits-all' system to a more personalised system where individual student profiles are available for teachers to facilitate more personalised modes of teaching and learning at post-secondary level. Currently, there is little continuity in terms of profile assessment between secondary and post-secondary. While all students attending every school in Malta have a file containing a profile of student results, activities etc., this seems to come to a dead-end at the end of secondary school. Continuation or migration of these files will contribute to a profile system which can be utilised by the student in the work or study place. The transition plan should support teachers in understanding and embracing proposed changes to the curriculum and exploring new pedagogies in their courses. The plan could also lever on emerging technologies that could be used to develop students' personal learning profiles: for instance, there is much interest in the application of Blockchain as a learner ledger system and MEDE is actively exploring Blockchain technologies for education certification.

B) Providing more opportunities for secondary school students to visit post-secondary institutions and discuss with teachers the skills students are expected to have to pursue a course, and the skills acquired (and learning outcomes achieved) by studying a particular subject. Currently, such opportunities are rare and dependent on the goodwill of individual teachers.

C) Providing more opportunities for both secondary and post-secondary students to gain some experience in the work place. Malta remains in a particularly disadvantaged situation with placements, volunteering and internships of young people. In those cases, where teachers have organised such experiences, the labour market has frequently failed to play a part as a responsible social partner: as an example, A-level biology students intending to take up medicine ended up preparing sandwiches for staff during a week's placement at a company.

Some teachers gave considerable importance to the reintroduction of compulsory summer work placements, saying that this had been a very important experience in their own educational and professional journey. A transition plan should provide a formal framework for meaningful internships, placements and visits for fifth and sixth form students, particularly in the summer months. Partners from industry should be regularly invited to lecture on modules at sixth form. The establishment of the National Skills Council should facilitate such a framework.

D) Encouraging sixth form colleges to communicate their offer coherently to their target learners. The student focus groups point to a raft of issues (such as loss of identity, student alienation, lack of information on specific courses and profiles of the teaching faculty) that could be solved through a formal system of student induction. The Task Force should work with the schools, students and parents - both in groups and as individuals - to ensure students are informed of the advantages and disadvantages of choosing a particular course or set of subjects, given their interests; and the opportunities available and possibilities in higher education and VET.

Recommendation 4: Implement changes to the examination model in order to provide a developmental and formative experience at the sixth forms which are academically oriented

Focus: Vision and Objectives

Addresses: Challenges

In order to provide a holistic formation to all sixth formers, changes in the MATSEC system need to be effected to move away from an exclusively academic and exam-oriented system.

Students opting for the academic path can only sit for their IM and AM subjects either after having completed the obligatory course or else in their 18th year. The current five-year cycle will come into effect after the course has been completed. This will ensure that the whole thrust of this document can be implemented throughout the years of their formation. It will also encourage an integral formation that is much wider than the vision of most students to solely focus on academics and sitting for exams as quickly as possible. The system encourages students to focus only on the mark obtained, without achieving the much wider objectives offered by learning and the many other co-curricular opportunities fundamental to their growth.

Recommendation 5: Facilitate alternative pathways to accommodate the desire of those students who wish to move to and from academic paths to a vocational education stream

Focus: Vision & Objectives

Addresses: Challenges 1, 9 and 10

To minimise the risk of early school leaving and dropouts in the first year of sixth form, policy-makers need to facilitate systems and procedures that make it easier for students to move between academic and VET pathways.

Students who study vocational subjects at secondary level should have the opportunity either to further their studies in the same path or to diversify and choose other vocational or academic subjects in the post-secondary institutions: the boundaries between academic and 'hands-on' VET approaches must not be rigid. The aim of a good education system is to empower learners to find their own path than can eventually lead to both self-fulfilment as lifelong learners, and the means to conduct meaningful work in an economic system. Malta needs a non-discriminatory education system that is supportive of the intellectual, academic, emotional, physical well-being of the learner, and also provides the skills necessary for people to succeed in the work place. Good practice underpins knowledge: the traditional distinction between the academic and hands-on approach is not conducive to good learning and teaching practices. The success of MCAST has also demonstrated that thousands of young people, who perhaps would never have continued studies at the post-sixteen level, prefer vocationally-oriented courses.

The Task Force needs to work with post-secondary academic and VET institutions if it is to facilitate student - course permeability:

1) Consider commissioning a formal process for student feedback and analysis throughout the two years of sixth form. This should start by securing feedback processes from all first year sixth formers in all post-secondary institutions within a prescribed timeframe of, say, six weeks from start date of studies. All students would be asked for feedback of their learning experience. This is not meant to be some passive, PR exercise, but a means of identifying student problems and

difficulties at an early stage, and alerting the relevant institutions to take corrective action. Such action could include: student-mentor meetings; guidance and counselling; and offering the student a seamless transfer route between the academic and vocational education streams at the end of sixth form - starting with the first term.

2) Facilitate, commission and run ongoing online communications programmes to reiterate basic principles relating to the permeability of academic and VET systems:

A) There is parity of esteem between the academic and VET approaches and qualifications. The student focus groups describe how some students would have preferred the hands-on approach but thought MCAST would not have given them the prestige or status which they wanted from post-secondary education. VET post-16 needs to be positioned as a credible pathway that is at par with an academic route.

B) Essentially the vocational stream addresses that type of learner who prefers to learn in a hands-on approach. Practice and theory are integrated into one learning process.

C) People have different learning styles which are already accommodated by the current offer. Some learning is more efficiently taught using one approach than the other. For instance, one would not trust a doctor whose training had been purely academic and with no hands-on learning. The MD course is probably the best model of a vocational course, with learning moving from theory to practice and vice-versa. No one would dream of certifying doctors on the results achieved in a summative written paper.

3) Courses at post-sixteen levels need to be structured in such a way that students can choose to simultaneously take up 'hands-on' oriented subjects and academic-oriented subjects. The restructuring of courses would represent a significant challenge to the Task Force, and needs appropriate planning. Such a system would have a number of advantages:

A) Students who discontinue their post sixteen education after the first year would still gain valid qualifications if they achieve the required standards in each subject at Intermediate level.

B) Students can try out different subjects and have the experience to take informed decisions of the subject they want to continue at A-Level.

C) As the qualifications at Intermediate and A-Levels will be accredited by the same agency, the National Assessment Authority, permeability should become much easier with students moving to and from academic to vocational streams, courses and even institutions much easier.

D) It would solve the problem of students sitting and achieving intermediate passes in the first year, and then not attending, or worse attending and disrupting lessons during the second year as school regulations require them to do so.

3) Raise awareness of the need for students and parents to pay attention to the learning mode most appropriate to the individual learner. In the same way that institutions should offer courses where students can get a feel for the two approaches, there is a great need for flexibility from all post-secondary and higher-secondary institutions, including the University and MCAST if the right choices are to be made with regard to the student's lifelong learning journey post-18 phase.

4) A key indicator of putting policy into practice at SEC level would be that both academic and vocational qualifications for young people up to the age of 18 years old are accredited by the same body - *see recommendation 25* on National Assessment Authority.

5) Raise awareness that alternatives are available for post-secondary education. MEDE recently published a policy document that recommends an alternative to the 'one-size-fits-all' approach to secondary education. It proposes three learning routes: one for General Secondary Education (GSE); a second for General Education and Vocational Training (GEVT); and a third for General Education and Applied Learning (GEAL) routes. This report agrees with these proposals and believes these routes should be implemented and extended to the post-secondary level. The advantages of a multiple quality learning route for secondary schooling are reiterated here to make the case for extending the three-pillar system to sixth form:

- General education, vocational training and applied learning are positioned as mainstream education, with parity of esteem.

- Vocational subjects are offered to all students as part of an options regime.

- Applied learning is comparable and equivalent to the general and vocational education routes and accredited up to the requisite MQF Level (3 in the case of secondary school, 4 with post-secondary).

- Progression for students from any learning route is seamless and with no dead-ends.

- Vocational and applied learning programmes are made available to all students as part of an options exercise, as opposed to being offered only to low-performing students.

- Alternative programmes have parity of esteem with mainstream programmes in that they guarantee quality at par to subjects delivered in general education route. The corollary is that students, and to a great extent their parent, gauge parity of esteem by considering the jobs that these courses could lead to. The fundamental principle remains that there should be parity of esteem among all learning routes.

- The emphasis is on learning.

- Different modes of assessment with particular emphasis on assessment as learning, including general education.

- All three routes available within the same school setting.

- Different learning rotes available to all students based on the route choice.

- Possibility of less subjects covered in the curriculum to provide time for learning with all students covering the key competences in all three routes.

- Secondary schools with specialised provisions including learning in key competences to all students.

- Comprehensive system offering a flexible timetable that allows the option for learning programmes from more than one route, and the progression from one route to another.

- All secondary schools to develop partnerships with post-compulsory schools, vocational institutions and industry to provide quality learning in all three routes.

- Different student class population to reflect learner's needs and type of programmer.

- Initial teacher training in-service training and continuous professional development related to the areas of general education, VET and applied learning.

- Learning outcomes are available for all e-learning programmes in all three routes.

- Career guidance facilitate a seamless progression for the students in furthering their academic, vocational and applied learning or in the world of work.

- School facilities and resources designed and built to facilitate quality learning in the academic, vocational and applied routes.

Recommendation 6: Revisit the stages in learner journey where secondary school students are compelled to select core subjects

Focus: Vision & Objectives

Addresses: Challenges 1, 2, 6, 9 and 11

As a broad yardstick, one in every two students at post-secondary education study the same subject he or she has chosen at the end of Year 8 of secondary school (*see Annex 10*). It is imperative that during secondary school, a sustained effort is made by the Task Force to use all available media channels to inform students and parents of the importance of decisions made that may impact the future learning journey beyond age 16.

1) Since post-secondary schooling is very much the result of decisions taken in secondary schooling there is an urgent need to raise awareness of this issue with secondary school students and their parents. There are concerns about students in Form 2 (Grade 9) already being asked to choose option subjects to be followed for the next 3 years. This choice comes about too early in the life of the student. Young people are routinely not given access to information on the full range of choices available to them. At sixteen, most students have not had the necessary experience to decide which learning style is best for them in a particular field, and much less an idea of the career they may wish to pursue in adulthood. Parents are also often unable to give their children good, up-to-date advice, resulting with many young people making ill-advised choices based on too narrow an understanding of what they can do and what they might be capable of doing in the future. With the discrepancy in levels and skills required between SEC level and level 4 courses, this become even more difficult. As noted by research, the most important cause of drop-out is making the wrong choice at the entry point. Students are being obliged to make definitive decisions at an age when most are too inexperienced, and even perhaps too immature to do so.

2) The learner journey should be clearly mapped from kindergarten all the way to post-secondary education, which will now also fall within the remit of the National Commission for General Education - such that the stages, options and choices made by students and parents are clearly identified. These will include the specific stages in secondary school where a student (or his/her

parents) is compelled to make regarding choices in subjects for SEC; and the options available to swap to and from an academic to a VET path. In the process, it is likely that policy-makers will need to also consider whether VET subjects at Form 3, for instance, are in fact pilots that end up influencing decisions at post-secondary. Once established, the National Skills Council should collaborate with the NCGE to ensure that adequate research is commissioned to provide pertinent data in this process.

3) The format of the map for the learner journey could range from printed material that is regularly updated and downloadable in PDF format to an infographic; a chart; or, ideally, an interactive website where the learner and student can personalise the present and future learning experience.

PEDAGOGY AND ANDRAGOGY – TEACHING METHODS AND TEACHER TRAINING

Recommendation 7: Address the need for change in the teaching & learning pillar at level 4 to facilitate acquisition of skills

Focus: Pedagogy & Andragogy - Teaching Methods and Teacher Training

Addresses: Challenges 1, 4, 6 and 10

Policy-makers need to lead by example and address the need for change in the teaching pillar at level 4. This requires transitioning from a pedagogy of imparting of knowledge to andragogy as the intellectual tool for lifelong learning. Students who succeed at this critical stage, and not merely pass examinations by replicating knowledge, tend to have negotiated this process. As young people in the process of maturing and 'becoming adults', post-secondary students need to have access to educators who can help them learn to learn in a more mature manner than what is propagated during secondary school. All too often students in higher education fail to make the transition, with lecturers, (themselves mostly not trained in any form of pedagogy, let alone andragogy) not having the theoretical tools to support students as they acquire new skills. This attention to changes in the teaching and learning pillar is vital if the education system is to be re-aligned to meet learners' demands for more personalised learning, their need to acquire 21st century skills and prepare them for entry into the labour market.

1) Most educators will agree that the maturation process of young people aged between 16 and 18 varies considerably from one young man / woman to another. Some students are immature and to some degree very carefree even when it comes to matters of responsibility and some are not far from adulthood. Sensitivity to variations in this maturation process implies that we need to adopt a teaching/learning approach that respects our post-secondary students as being in the phase of 'becoming adults'. Knowles' assumptions all acknowledge the process of 'maturing', but not as 'adults' and our teaching/learning strategies should hence be tuned to reflect this. Many a good number of promising students fall by the wayside because of a lack of support from educators who are insensitive to their pastoral duties, and justify lack of support on the basis that post-secondary students 'are now adults'. Although most students at this age wish to act as independent beings a degree of support from teachers is vital to complement that from parents and significant others. Support should not be overwhelming and should be provided in a manner that respects these students' need for space in which to grow. In fact, the whole educative process

of the post-secondary sector should a) respect the students' wish to become more independent and at the same time; b) support and care for the students as they pass through this turbulent but exciting time of life.

2) Initiatives targeting changes in the teaching and learning pillar at level 4 need to be addressed within a holistic framework. If MEDE is committed to the three-learning route secondary school system, it should immediately set up an internal working group to determine how these recommendations will impact and also be applied within post-secondary education. The challenge remains to innovate the curriculum and develop new modules for teaching and learning that contribute towards making learning more interesting and useful for young people who are at the cusp of higher education, employment or applied learning.

3) New teaching pedagogies that address the need for students to abstract have to be introduced, with the active support of the Institute for Education and the Faculty of Education at University. Learning by rote and memorising facts does not mean that a concept has been assimilated - rather that meaningless terms have been accommodated. Teachers need to focus on teaching students the ability to learn: how to abstract should be taught as early as possible in the educational journey, since it constitutes the basis of learning. Teachers need to devote time and attention to the learning mode most appropriate to the individual learner.

4) The concept of VET has been with us for almost eighty years and more. Like many other countries, Malta is still entrenched into a dichotomy between academic and vocational education. The labour market has gone beyond this divide but educational systems are still struggling to come to terms with the idea that knowledge, skills and competences have no class, colour, or gender and that social inclusion, equality and respect for diversity are the underlying principles that unify learning and working. Programmes need to be put in place within teacher training programmes to close the gap between artificially constructed systems. Closing the gap between VET and further education remains a significant challenge which needs conviction and commitment from both policy-makers and teachers in the field. Traditionalists will certainly be reluctant to change the dividing line clear between the vocational and the professional aspects of learning and working.

5) The learning outcomes for the post-secondary sector have yet to be articulated, but should address 21st century skills (see recommendation 11). What this means for teachers in practice is that teaching systems need to be introduced that improve learners' qualities and skills, such as:

- Self-confidence to ask the right questions

- Flexibility of mind

- Eagerness to continuously learn

- Ability to work in teams

- Ability to solve problems

- Ability to lever on curiosity

- Leadership

- Ability to present and communicate ideas

All of these represent better forms of, for example, assessing critical thinking and mastery of the language process than, say written assignments for a host of reasons, not least of which is immediacy. Students who can write good essays often cannot express themselves in the spoken form. This is especially the case with the increasing number of students with little or no social or linguistic skills because they communicate with machines rather than human beings. Teachers need to help students acquire such skills: the reasons for the lack of these skills are complex, but it is clear that to develop them different forms of assessment are required.

6) Over these last twenty years VET has also moved into higher education. Malta is one of the first countries to introduce VET degrees to its NQF. This implies a more professional approach to learning but also to working. The role of the National Skills Council should be pivotal in realigning education with the labour market and social partners.

7) Any changes in curriculum to accommodate a modular system with assessments at the end of each module and synoptic assessment at the end of the course will accelerate pedagogical change. For example, a student studying English Literature can be assessed on Shakespeare through an interview or presentation; multiple choice tests could be used should there be a need to examine knowledge of facts. Clearly, such assessment procedures will be expensive especially

in terms of time. It is much easier to get a hundred students to sit for a three-hour examination at the end of two years than to ask individual students to attend a ten-minute interview at the end of a module. Curricula and appropriate teaching methods would have to be developed and above all, teachers trained. The burden on teachers will undoubtedly increase but benefits far outweigh the disadvantages as they put the student at the forefront of the teaching and learning process.

8) Any change in post-secondary pedagogy will require the buy-in and active support of teachers, the MUT, school administration, MATSEC etc. Change would inevitably increase preparation and assessment time. Pedagogy that focuses on students' thinking, engagement and enjoyment during a lesson has to re-think the traditional 'lecture-style' mode of delivery.

9) There is a need for clarity on school-based qualifications and certifications. A few Advanced Matriculation and Intermediate Matriculation subjects already have a component of school-based assessment. This should be extended to other subjects and given a greater weighting to reflect the changes at the compulsory level. Some subjects are considered more difficult than others. The NAA should assesses parity of levels for different subject areas. The assessment of oral and listening comprehension skills as well as practical work can be carried out by the schools on a continuous basis, thus gaining precious time. The assessment would need to be complemented by a credible quality assurance regime.

Recommendation 8: Develop training and ongoing professional development for teachers of post-secondary students.

Focus: Pedagogy - Teaching Methods and Teacher Training

Addresses: Challenges 8, 11 and 12

Great teachers directly impact the quality of teaching and learning: an investment in relevant training and continuing professional development (CPD) programmes is likely to accelerate the change outlined in this report, and also directly contribute to increasing levels of teacher professionalism. Within this context, teacher professionalism is defined as covering three domains:

A) A knowledge base that includes the necessary knowledge for teaching, including pre-service formal education, support for in-service professional learning and practitioner research, among other best practices;

B) Autonomy or the teachers' decision-making abilities related to their work (asked not of the teachers themselves but of the principals they report to), such as curriculum choices, learning materials and course content; and

C) Peer networks to provide opportunities for information exchange and support, including such practices as participation in a formal induction program and development of a professional development plan.

The following variables will need to be considered within the context of an investment in teacher training and CPD:

- The way teachers are supported directly influences their satisfaction with their job and present employers;
- Teachers tend to have more support from their institutions for pre-service education than in-service professional development;

- Teachers are least likely to get financial support for in-service professional development outside of working hours;

- Of the five areas of possible autonomy (content, course offerings, discipline practices, assessment and materials), teachers overall have the most say over what materials are used in their courses and considerably less in the other areas;

- Most peer networking comes in the form of direct observations by peers and supervisors rather than participation in a professional development network or formal induction program;

- Primary and lower secondary teachers (those teaching students ages 12-15) are more likely to participate in a pre-service education program than post-secondary teachers (working with students ages 16-18); yet the latter group is more likely to have higher levels of autonomy.

1) It is vital that schools and colleges take up ownership of training. Frequent professional development sessions should become a vital part of the conditions of work at a post-secondary institution, and should go far beyond the present few hours expected at present. Teachers complain that the training currently offered by the education authorities is not relevant to the needs of the teacher at post-secondary sector as it is organised with secondary school teachers in mind: what is relevant at SEC level is often not relevant at post-secondary. CPD should therefore, where possible, be organised by the schools themselves or by a team appointed by the schools which can in turn organise such sessions across schools.

2) The proposed new teacher training needs to be less bound to a particular time of the year, chosen by the teacher, and more creative in its format and structure. Teachers should be given the opportunity to choose from a menu of training initiatives, or to choose from a wider spectrum of opportunities available online or elsewhere. In this manner, it is hoped that training will be more relevant as it will be inspired by the needs of the teachers. All training needs to be certified, to ensure quality in its content and equivalence in its overall certification. Creative training should include the space and time for the formation of community of learners, within schools and beyond schools, who through online and face-to-face collaboration share resources and create new knowledge.

3) The Institute for Education within MEDE was set up in October 2015 to facilitate teachers' training and CPD and to raise the level of such training. The Institute will provide a menu of training opportunities at different levels of MQF, funded both by local and by EU resources. The Institute will facilitate training opportunities for educators whilst at the same time reorganize and strengthening existing opportunities. Face-to-face, online and hybrid formats will be used to provide as wide as possible the opportunity for educators to engage with relevant CPD in the most appropriate format for them.

4) It is vital that the collective agreement is concluded since the current inset model will not fit the needs of the LOF implementation. Through a cascade model, the intention is that key teachers will act as champions in the schools and work with other teachers at grassroots level. MEDE has already identified an initial cohort of people prepared to operate as LOF champions, and the cohort is also experiencing first-hand how other countries are implementing LOFs so they may contextualise and implement these in Malta context. The LOF will also take into consideration incidental learning guaranteeing more access to the learning of more children. While it is acknowledged that some students may have problems in literacy or numeracy, it is often hard to pin-point which particular area the student needs to work on. The hope is that this will be addressed better through the LOF approach.

5) To encourage widespread and sustainable innovation in teaching and learning, teaching needs to be valued alongside research. Lessons learned from exemplars such as PRIMAS and BTEC should be adopted in all training initiatives in the post-secondary level. Within this context, training should extend beyond training and CPD for teachers and lecturers to training of classroom assistants and administrative staff. Training and CPD should also be accredited through a system of ongoing professional development, and used as a means of individual teacher performance evaluation.

6) The Task Force should set up a sub working-group with the Institute of Education and the NCGE to determine the core training programmes most urgently required by teachers at post-secondary level. The NCGE will also establish and facilitate standards for professional learning,

aligned with the country's long-term education goals, to ensure that teachers can participate in these learning opportunities. In turn, teachers must take advantage of the opportunities available.

As an indication, the following areas are deemed important by the working group:

- 21st century skills
- Digital literacies
- Flipped classroom methodologies
- Modular assessment systems
- Blended learning
- Open educational resources

Strengthening teachers' confidence in their own abilities is particularly vital if training and CPD is to be effective. Teachers benefit from even minimal amounts of collaboration with colleagues. Collaborative practices, such as observing other teachers' classes and providing feedback, or teaching as a team in the same class, could – and should – be introduced at school. School leaders could make schedules more flexible to allow for team teaching.

7) There needs to be a commitment to lever on the opportunities afforded by technology to revitalise teacher training (see recommendation 8). Training and CPD content would greatly benefit from online learning programmes for teachers which can be used by teachers on a demand basis, as opposed to prescribed schedules. The Task Force should work with its partners to ensure that technology is not perceived by teachers to be an instructional burden. For instance, it can be very difficult for teachers to manage learning experiences and activities when they have to support multiple platforms and device types, and some activities may be incompatible with some devices. In this situation, teachers may revert to activities of the lowest common denominator that work on older and less robust devices at the expense of a more effective learning experience - or even abandon technology in the classroom altogether. The ability to curate and share digital learning content needs to become an important component of teacher training.

There are additional benefits such as sharing peer-knowledge through connected learning applications and online forums. Technology can facilitate the sharing of best-practices and encourage collaboration among teachers working in different schools (*see recommendation 8*).

8) School principals and heads of department should receive training in, and have opportunities to assume, instructional leadership. Policy makers should consider providing guidance on leadership and distributed decision making at the system level. TALIS data shows that when principals undertake leadership training they were also more likely to develop a professional-development plan for their school, observe teaching in the classroom as part of a teacher's formal appraisal, and report there is high level of mutual respect among colleagues at the school. School principals also need to be made aware of the importance of leadership training, and the correlation to overall school performance thorough improved decision-making. Teachers who are given opportunities to participate in decision making at school also report greater job satisfaction and, in most countries, greater self-efficacy. Teachers in nearly all countries who reported that they participate in collaborative professional learning activities five times a year or more also reported significantly higher levels of self-efficacy.

9) Teachers need to be more closely aware of the needs of the labour market. While the working group remains in favour of training and CPD being primarily organised by the schools and colleges, the Task Force should work in conjunction with the National Skills Council to identify teacher-training programmes that can update teacher awareness of the changing workplace and contribute to the 21st century skills required from young people. Teacher placements in industry should be considered to acquaint teachers with the changing workplace and encourage a hands-on approach to teaching.

10) There is merit in developing problem-based learning workshops to train educators by putting them in the role of students. Teachers mirror the process their learners would go through to collaboratively solve complex societal problems and subsequently develop resources to better integrate the approach into their courses.

Recommendation 9: Embrace technology to align teaching in the class with the needs of 21st century learners

Focus: Pedagogy - Teaching Methods and Teacher Training

Addresses: Challenges 1, 4 and 7

A policy on post-secondary education must embrace the advances in technology and find ways of incorporating these in today's education system. It is vital that due attention is given to the alternate methods of delivery and credentialing in order to accommodate a rapidly increasing student population and the diversity of their needs. Emerging models, such as hybrid learning and competency-based education, are revealing the inefficiencies of the traditional system for non-traditional students.

The focus should be to find ways of aligning technology to key educational challenges. There are several claims for the transformative potential of technology in education. For instance:

- Education can be made available to a broader audience at a much lower cost and potentially provide higher quality instruction at the same price.
- Promising models can be scaled up and best practices transferred and sustained over the long term.
- Insights may be gained into how and what students learn in real time by taking advantage of the greater variety, volume and velocity of data.
- Teacher productivity may be increased, freeing up valuable time from tasks such as grading and testing to planning and delivering quality teaching.
- The skills gap could be closed through creative, 'real-life' solutions to fundamental challenges faced by 21st century learners, including a lack of well-trained teachers and accessible technology infrastructure.

Used diligently, technology can be a powerful tool for educators to reimagine learning experiences. Historically, a learner's educational opportunities have been limited by the resources found within the walls of a school. Technology-enabled learning allows learners to tap

resources and expertise anywhere in the world, starting with their own communities. For example:

- With high-speed Internet access, a student interested in learning computer science can take the course online in a school that lacks the budget or a faculty member with the appropriate skills to teach the course.
- Learners struggling with planning for college and careers can access high-quality online mentoring and advising programs where resources or geography present challenges to obtaining sufficient face-to-face mentoring.
- With mobile data collection tools and online collaboration platforms, students in a remote geographic area studying local phenomena can collaborate with peers doing similar work anywhere in the world.
- A school with connectivity but without robust science facilities can offer its students virtual chemistry, biology, anatomy, and physics labs—offering students learning experiences that approach those of peers with better resources.
- Students engaged in creative writing, music, or media production can publish their work to a broad global audience regardless of where they go to school.
- Technology-enabled learning environments allow less-experienced learners to access and participate in specialized communities of practice, graduating to more complex activities and deeper participation as they gain the experience needed to become expert members of the community.

1) These opportunities expand growth possibilities for all students while affording historically disadvantaged students greater equity of access to high-quality learning materials, expertise, personalised learning, and tools for planning for future education. Such opportunities also can support increased capacity for educators to create blended learning opportunities for their students, rethinking when, where, and how students may complete different components of a learning experience. When used by capable, trained teachers, technology can be a powerful tool for transforming teaching and learning. It can help affirm and advance relationships and collaboration between educators and students, shrink long-standing equity and accessibility gaps and adapt learning experiences to meet the needs of all learners.

2) The proliferation of technology and social media in everyday life is frequently cited as a contributory factor to a raft of social problems in young people – from a lack of attention and distraction from education to addiction to screens and passive entertainment. It is vital that there is attention from policy-makers to attitudes to learning. For students to be interested in learning and eager to use the available technology to learn rather than just entertain themselves, there needs to be a sustained.

3) Systems of online learning have the advantage of utilising more than one sense to integrate the message at the same time. Learners may hear and see the lecturer, as is always the case, but also read what he/she is saying at the same time. Moreover, the learner can listen to the same clip again and again if the message has not been grasped, which is not always the case with a normal lecture.

4) Technology may be used by educators as embedded systems of support to help community learning around and facilitate personalised instruction. Technology can enable teachers to imagine ways to customise a curriculum to the abilities and needs of an individual student. Teachers can use tools and online resources to design thoughtful environments and provide students with more customised journeys through the curriculum. Technology however remains vulnerable to economic disparity: the ability to access digital learning resources is distributed disproportionately to students whose families can afford devices and connectivity, widening the very gaps that technology is capable of closing. This situation also may raise legal concerns because schools are expected to provide a free education for all students (*see recommendation 15 - Open Educational Resources*).

5) Nevertheless, no educational process can take place without intensive teacher-student interaction - technology cannot be separated from this fundamental human relationship. Simply introducing more technology in schools is no longer sufficient; if we concentrate our efforts solely on technology we risk ignoring the larger issues of knowledge and culture. Education in the digital age must be viewed above all as a cultural initiative. It begins with a new concept of school: an open space for learning — more than just a physical place, a springboard that enables students to develop skills for life. In this vision, technology is empowering, habitual, ordinary

and ready to serve the school, primarily in activities aimed at training and learning, but also in administration, bringing together all school settings: classrooms, common spaces, laboratories, private and informal spaces.

6) There is an urgent need to activate change in the relationship of educators with technology in the classroom and in the curriculum. It is also vital that there are closer linkages between MEDE digital education policy-makers and the field. The Malta National Lifelong Learning Strategy 2020 includes a strategy focusing on Connected Learning and a set of recommendations, but progress at grassroots is slow. This report recommends that the NCGE takes a lead in working with the Institute for Education, the new Commonwealth Centre for Connected Learning and public, Church and sixth form colleges to develop a short-term, organic plan for digital innovation in post-secondary education. The plan must identify cohesive programmes and actions organized into the five main areas of: a) tools; b) skills; c) content; d) staff training and e) supporting measures. This plan should be followed by a MEDE digital education strategy that articulates a medium-term vision for education in the digital age, directly linked to the challenges that teachers face in applying and promoting lifelong learning, in both formal and non-formal contexts. Within this context, sixth form is the lower rung of lifelong learning beyond compulsory education.

7) The introduction of education technology in post-secondary education should support the commitment to develop 21st-century skills (such as communication, creativity, persistence and collaboration) at post-secondary level. Technology is only one element in a portfolio of vital solutions that aim to close the 21st-century skills gap: right now, 'technology' is merely restricted to ensuring that schools and colleges have access to ICT infrastructure (Wi-Fi, whiteboards, laptop hardware). Educators need to use education technology within an integrated instructional system known as the closed loop to address skills gaps *(see Figure 13 below)*.
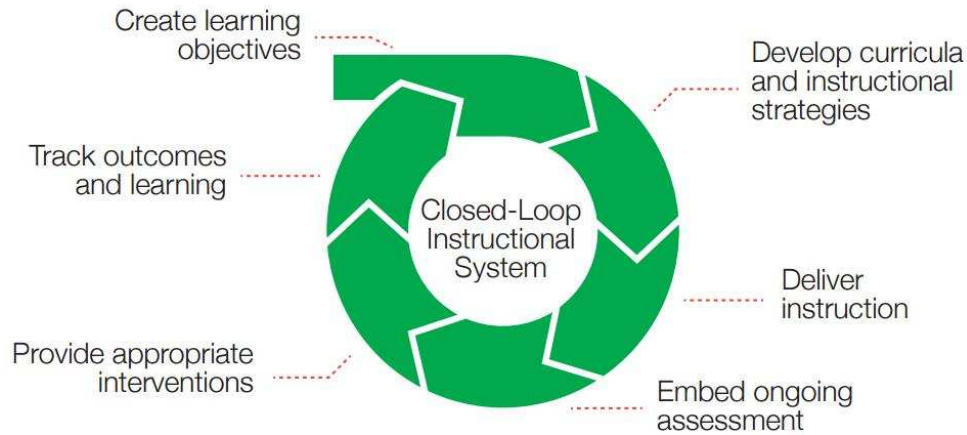
Figure 14: Closed Loop Instructional System

Source: World Economic Forum (2015)

As in engineering or manufacturing, the closed loop refers to a system that requires an integrated and connected set of steps to produce results. At the classroom level of the closed loop, educators create learning objectives, develop curricula and instructional strategies, deliver instruction, embed ongoing assessments, provide appropriate interventions based on student needs and track outcomes and learning. Technologies are deployed to further strengthen the closed loop, address 21st-century skills gaps and deliver outcomes.

8) The Task Force should identify and support a cohort of educators in all post-secondary institutions who are interested in following digital education pathways, focusing on key skills such as digital literacies that can in turn contribute to the full range of 21st-century skills. Educators need to trained to better evaluate resources that best address their needs and contexts. Lecturing online may appear to be relatively easy since technology to develop online sessions is cheap and easily accessible, yet teaching in the classroom with technology is a challenge even for experienced teachers. The acquisition of 21st century skills also necessitates a radical change in pedagogy, course work and assessment modes. Specifically:

A) Instructional resources that enable the closed loop to help address 21st-century skills gaps through the design, delivery and assessment of learning. These include personalized and adaptive

content and curricula, open educational resources, communication and collaboration tools and interactive simulations and games; and

B) Institutional resources that help the closed loop deliver outcomes by improving human capital development and strengthening management systems. These include digital professional development resources for teachers and student information and learning management systems. When education technologies are layered throughout the closed loop, technology-based solutions such have the potential to enable teachers, schools, school networks and countries to scale up solutions in ways not possible before and potentially to deliver better outcomes and learning.

9) The sixth form of the future needs is not some futuristic lab, but the redesign of classrooms as active, deeper and more personalised learning spaces, supported by the mindful use of technology. Policy-makers in Malta need to ensure that the commitment to improve infrastructure is supplemented by a corresponding commitment to digital pedagogy and supportive environments for:

- Blended Learning Designs
- Use of MOOCs and OERs as part of the curriculum, or to address gaps in some subjects and change style of teaching and learning *(see recommendation 13)*
- Flipped classroom approaches
- Peer learning networks
- Blending Formal and Informal Learning
- Improving digital literacies
- High-Quality Digital Learning Content
- Better linkages with professions

10) Digital and media literacy needs to be taught in the class, starting from primary school all the way to the post-secondary sector. With the proliferation of the Internet, mobile devices, and other technologies that are now pervasive in higher education, the traditional view of literacy as the ability to read and write has expanded to encompass understanding digital tools and information. This new category of competence is affecting how colleges address literacy issues

in their curriculum objectives and teacher training programs. Discussions among educators have described digital literacy as competence with a wide range of digital tools for varied educational purposes, or as an indicator of the ability to critically evaluate web resources. However, both definitions are broad and ambiguous. Compounding this issue is the notion that digital literacy differs for educators and learners, as teaching with technology is inherently different from learning with it. In practice, digital literacy is not a checklist of specific technical skills, but rather the development of critical thinking and reflection in various social and cultural contexts. Students today would appear to be more digitally literate than previous generations because many have grown up immersed in technology-rich environments, but research has shown that this does not necessarily equate to confidence, especially in an educational context.[32] It is vital that Malta makes a concentrated effort to introduce digital literacies in the curriculum. If necessary, the systems of knowledge at sixth form should be rescoped as digital literacies for 21st century skills.

11) The Paris Declaration, adopted on 17 March 2015, highlights the importance of strengthening children's and young people's ability to think critically and exercise judgement so that, particularly in the context of the Internet and social media, they are able to grasp realities, to distinguish fact from opinion, to recognise propaganda and to resist all forms of indoctrination

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[32] The Organization for Economic Co-operation and Development's (OECD) most recent survey of adult skills found that millennials in the US placed nearly last in digital literacy as compared to other developed nations. Illuminating this problem is the Rasmussen College study "Digital Literacy in 2015," which reports that one in four millennials want to improve their digital literacy, but 37% find the Internet "scary," more so than respondents aged 35 and over. The US is not alone; studies around the world are debunking the myth that age plays a factor in comfortably using various technologies. While this challenge is widespread in higher education, the 2016 Horizon Project Expert Panel recognized it as solvable, as many projects to foster digital literacy are already underway. At Staffordshire University in the UK, faculty have developed a community of practice around the Digital U program, which provides staff with online resources as well as face-to-face opportunities for peer-to-peer learning. Around the world, digital curation, defined by the Higher Education Academy as "the act of finding and selecting, grouping and contextualizing, preserving, maintaining, archiving, and sharing digital content," is viewed as a way to help students develop their digital literacy. For years, educators have leveraged curation tools such as Scoop.it, Storify, and Pinterest to help students critically evaluate online resources. Australian researchers, for example, have been studying the use of Scoop.it, in conjunction with goal-setting, to develop digital literacy skills and increase student engagement. The JISC Developing Digital Literacies Programme in Europe explored various institutional approaches to digital literacy development in higher education.   JISC called for approaches that focus on the curriculum; use frameworks as tools for engagement; provide timely information, guidance, and support; engage in partnerships, networks, and communities of practice; and embed digital literacies into professional development programs. Library organizations have also been instrumental in creating related literacy standards. The Association of College & Research Libraries' Framework for Information Literacy for Higher Education provides a cluster of interconnected core concepts, which organize ideas about information, research, and scholarship into a comprehensive whole.

and hate speech. The ET2020 Joint Report of 15 December 2015, which designates the follow-up to the Paris Declaration as a key priority in the new work cycle (2015-2020) through joint analysis, peer learning, meetings, dissemination of good practices and concrete measures underpinned by funding. The Resolution of the Council and of the Representatives of the Governments of the Member States, meeting within the Council, of 24 February 2016 on promoting socio-economic development and inclusiveness in the EU through education, in which they expressed commitment to enhance young people's digital and media literacy as well as their ability to think critically, along with their social skills and citizenship competences.

All students and educators need to have access to a robust, flexible learning infrastructure capable of supporting new types of engagement and providing ubiquitous access to the technology tools that allow students to create, design, and explore. The essential components of an infrastructure capable of supporting transformational learning experiences include:

- Ubiquitous connectivity. Persistent access to high-speed Internet in and out of school
- Powerful learning devices. Access to mobile devices that connect learners and educators to the vast resources of the Internet and facilitate communication and collaboration
- High-quality digital learning content. Digital learning content and tools that can be used to design and deliver engaging and relevant learning experiences
- Responsible Use Policies (RUPs). Guidelines to safeguard students and ensure that the infrastructure is used to support learning
- Privacy and security. Student-owned devices may not have appropriate safeguards in place for storing their learning data. In addition, personal devices likely will not have the security features required to provide valid assessment.

12) Learning can be measured for the benefit of learners. In the consumer sector, data are routinely collected, measured, and analysed to inform companies about nearly every aspect of customer behaviour and preferences. A number of researchers and companies are working to design similar analytics that reveal patterns in learning-related behaviours to improve learning for individual students as well as across institutions. Learning analytics also take on new meanings within the context of the one-size-fits-all approach to teaching that alienates both

students struggling with specific concepts as well as those grasping the material more quickly than their peers. As learning analytics have matured, sixth forms and colleges now have wide access to tools and large sets of data needed to begin personalising the learning experience.

13) Advancing blended learning requires the promotion of scalable innovative course designs. In addition to MOOCs and OER, technology giants such as Microsoft and Google are also facilitating opportunities for institutions to experiment with blended approaches. Microsoft runs extensive programmes using its proprietary Skype and Minecraft platforms; Google have a raft of programmes that may add value within a blended learning design including their Computer Science Capacity Awards program, Google Garage and the Growth Engine for Digital Skills. Virtual reality applications are now exploring tactile elements within online courses to improve learning outcomes. Affective computers recognise emotional and behavioural signals that trigger a reactionary process: in sixth forms, a potential application of affective computing is in blended learning situations wherein a computerised tutor reacts to facial indications of boredom from a student in an effort to motivate or boost confidence. MEDE should also lever on its role in the National Skills Council to explore initiatives that bring together private companies and education providers to shape the future of adaptive and personalised learning through technology.

CURRICULUM SUBJECT CONTENT, ASSESSMENT AND CERTIFICATION

Recommendation 10: Commission an external expert review of the MATSEC curriculum, focusing on international parity and quality standards

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 4, 5, 6, 7, 9 and 11

The working group reiterates that MATSEC is an internationally-recognised benchmarking system that is pivotal to present and future of the Maltese post-secondary education system. MATSEC helps maintain a level playing field across schools and prepares young people who wish to follow an academic route to the University of Malta or some other higher education institution. From a practical perspective, Malta does not have better, readily-available alternative for academic pathways and the system needs and ought to be sustained and developed.

Conversely, calls for the updating of the MATSEC curriculum have been made by education experts since 2005. The lack of progress in revisiting and reinvigorating the post-secondary curriculum has much to do with administrative challenges and the emergence of VET as a credible alternative to a rigid academic pathway that inevitably leads to University and higher education. The additional challenge of the MATSEC board reporting into University has also contributed to stagnation in reform, with difficulties in differentiating policy-making and accreditation from implementation and regulation of standards.

1) The MATSEC review should start from a set of fundamental principles:

A) Students should be given the opportunity to mix academic and vocational subjects in their repertoire of SEC and MATSEC subjects chosen at secondary and post-secondary institutions respectively.

B) Further education pathways are to be facilitated.

C) Any learning outcome frameworks for the post-secondary sector should be linked 21st Century Skills.

D) The post-secondary sector embraces learning up to Level 4 at age 16 to 18.

E) VET should also be available at IM/AM levels.

F) Resources are available for a broader platform for learners aged 16-18.

2) The MATSEC curriculum review should be commissioned by MEDE, and in full consultation with the current MATSEC board and the new NCGE. It should have the following objectives:

A) Assess MATSEC syllabi to determine parity of esteem of the Matriculation certificate with international academic and VET benchmarks. The exercise should compare standards and parity - not just parity with UK boards. There should be a comparative exercise in which MATSEC A-level and I-level syllabi (and exam papers) in a few subjects are compared to foreign syllabi (and exam papers) in the same subjects at the same levels. Syllabi of the IB, College AP, AQA, Edexcel, OCR, CCEA, Scottish, Ontario Canada and New Zealand syllabi are accessible among others.

B) Propose a system to improve MATSEC's permeability to and from VET pathways at post-secondary level - there should be clear handover / interface between Education and VET pathways.

D) Assess the standard of MATSEC papers with a view to determining options for syllabi to be assessed via a modular system (*see recommendation 10*).

D) Propose a system that can incorporate VET in the first year of sixth form at Intermediate Level.

E) Propose changes that can enable MATSEC assessment and certification to incorporate essential elements of 21st century skills.

3) The review panel should include representatives of teachers from the various post-secondary institutions, further and higher education, and the input of foreign experts. The review should make a comparative study of the subject content, assessment schemes and examination papers of various awarding bodies with a view of establishing general guidelines for the MATSEC syllabus panels.

4) The 2010 MATSEC review had proposed a different mix of subjects in the Matriculation certificate within the two-year course. During the first year of the course, students would study five subjects at Intermediate Level. At the end of the first year, they sit for the examinations in these five subjects. In the second year of the course, students would study two of the five subjects at Advanced level and sit for examinations in these two subjects plus Systems of Knowledge, to complete the requirements for the Matriculation Certificate. This proposal has not been implemented. Sixth forms think it could be a good idea to introduce first-year Sixth form students to subjects at Intermediate level first and then ask them to select their Advanced Levels later. This would mean a smoother transition from SEC to Advanced level than experienced currently. However, the current second year of Sixth form is so short that as tutors point out there will not be enough time to upgrade from Intermediate to Advanced level. A solution needs to be found to this dilemma.

5) The NCGE should determine how the fundamental principles of the National Curriculum Framework, the Learning Outcomes Framework (LOF) and the related Learning and Assessment Programmes (LAPs) will ensure that MATSEC at post-secondary level can depart from a one-size-fits-all approach towards a more tailored approach, complemented by equitable high quality educational routes which best meet learners' needs. Curriculum for young people between the ages of 16 and 18 should meet four criteria in that it should provide:

A) A core of learning for all, ensuring high levels of literacy and numeracy
B) An entitlement to programmes of study which prepare young people for adult life
C) Elements of choice which open routes to further study and employment
D) All young people with an opportunity to undertake work experience and community activity

6) Rather than limiting the age bracket to 16-18 year olds to the post-secondary sector, the nomenclature should focus on MQRIC levels since some students spend more than two years at post-secondary level. Some students start courses at level 4, while others commence other programmes at levels 1, 2 and 3.

7) While clearly recognising that parity of esteem, as different from parity of recognition as entry point to any post level 4 institution, can only be achieved by the market, and only after accreditation by the NAA, there should be a move in the teaching and learning pillar at level 4, from an imparting of knowledge model to an acquisition of skills model. It is crucial to establish the level required at level 4 and keep the standards with respect to knowledge, skills and competences.

8) Within the context of the expert review, there needs to be a focus on helping individual learners learn through the learning mode most appropriate to their needs as individual learners. This means that the vocational-academic divide should not be rigid, and institutions should offer courses where students can get a feel for the two approaches and make appropriate choices with regard to Higher Education in the post-18 phase. The Task Force should also explore systems that encompass both secondary and post-secondary in the same college. Despite issues relating to economies of scale, it may be feasible to encourage the specialisation of colleges in different fields, such as sciences, languages and the arts.

Recommendation 11: Develop and incorporate modular curriculum design and modular assessment into both academic and VET pathways within prescribed timeframes

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1, 9 and 11

To align the curriculum and the assessment system with the needs of 21st century learners, policy-makers need to develop and implement:

A) A curriculum that is modular in design and approach; and

B) A modular assessment system

Moreover, both curriculum and assessment systems must be:

A) Permeable and enjoy parity of esteem with the current curriculum and its summative examination system of assessment;

B) Facilitate alternative pathways; and

C) Capable of being implemented within secondary and post-secondary schools within a short timeframe - five years from the date of this report.

By permeable, we mean that a system must be flexible to enable students to move from academia to VET and other emergent and alternative education pathways and vice-versa.

1) There needs to be a consensus by policy-makers on what constitutes a modular design (or approach) and what constitutes a modular assessment.

A *modular design and approach* to the curriculum means that the curriculum is subdivided into smaller modules that can be independently created and then used in different education systems. A module is a portion of a curriculum.

A *modular assessment* is associated with a staged assessment approach whereby the student's progress is assessed at different stages of the student journey as opposed to an approach that rewards success solely on the basis of the successful passing of a one-off, single exam at the end of a period. Modular assessments incorporate both course work and examination.

Modules may be relatively autonomous but it is legitimate to talk about the integration of basic, intermediate, and advanced modules in education. There should be the opportunity at all levels to choose and combine modules in different ways according to the context of each particular teaching situation. Successful education systems based on modules need objectives to be achieved within a clear and realistic time limit. This time limit is an important feature of the modular organisation, since the whole curriculum is built around the idea that time and human and material resources should be spent to achieve foreseeable results. To reduce the risk of rigidity, a modular organisation implies constant monitoring and feedback to ensure that learning is really work-in-progress.

From a practical perspective: MCAST has established courses that consist of a number of modules with students accumulating credits as they progress through the course. Secondary school students currently associate modularity with the VET system - a system embraced by MCAST and / or the fairly recent attempts at introducing VET style subjects at secondary level. All five VET subjects[33] are available as part of the secondary curriculum involve student assessment over a period of three years through a mix of assessed, practical course work and an annual exam. At post-secondary level, MCAST students are already familiar with modular approaches and assessments because of the VET culture that underpins the approach of the institution. Within the academic stream, learners and teachers are equally familiar with Systems of Knowledge as a syllabus that incorporates a modular approach - but this ends up being assessed through one-off summative examination as opposed to a modular assessment system. Within higher education, UM has adopted the credit system since 1978, starting with the Faculty

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[33] All five VET subjects available as part of the secondary school curriculum are modular and assessed in this way. SEC Agribusiness, SEC Engineering Technology, SEC Health and Social Care, SEC Hospitality, and SEC IT. The new SEC Media Literacy will also be modular and assessed as the other VET subjects.

of Education, and now all courses are structured in terms of units with credits which are assessed separately. Some courses do not have a final synoptic examination.

2) A modular approach has a number of advantages in that:

A) It allows for better evaluation and more focused revision and improvement. Modifying a module is easier and more cost effective than revising a course or one large module.

B) Parts of the course can be used and reused elsewhere in other courses.

C) Courses that are already in a modular format are ultimately more flexible and easier to convert for delivery in other formats.

D) Focuses teachers' attention on learners' needs for personalised instruction. It is more possible to imagine the greatest ways to customise the curriculum to the needs of the individual.

E) Lowers the emotional and psychological stress experienced by students when encountering summative assessments - modular assessments have the potential to achieve greater equity within the student community.

3) An overall modular system in post-secondary education is only feasible if clear and student-friendly academic, vocational, training and apprenticeship assessments are put in place: all sectors need to work collaboratively with international and national standards. Modular, credit-based assessments should build on the principles of ongoing or continuous assessment. The student's progress is assessed in different modes, over a period of time in different learning contexts. Evidence of acquisition of specific skills, performance and progress over time is documented for both reference and quality assurance purposes. The focus of summative assessment is to evaluate and capture acquired learning (the outcome of a programme), typically but not exclusively, at the end of an educational experience. The adoption of a combination of assessment instruments further supports the validity and reliability of the assessment process. These may include any combination of one or more of a set of assessment instruments such as:

Presentation / Story Telling; Oral; Practical work; Web-based upload; Computer-based assessment; Fieldwork; Group work; Peer Assessment; Problem solving; Project work; Written Assignment; Written Test etc.

4) Modular approaches must be underpinned by credible assessment systems that are not flexible but 'fit for purpose'. The present system of both width and depth, in the form of the MATSEC certificate (which includes both IM and AM subjects) should therefore be retained. Again, from a practical perspective: the MATSEC board is suggesting a system whereby a student would sit for 5 intermediates during the first year and then concentrate on two of these plus SOK for A-level during the second year. This would provide flexibility for students who may need more time to achieve all the modules involved as well as allowing students to try and engage with the subject before deciding to sit for A-level. Some students may also be able to sit for three A-levels if they feel they can cope.

5) Modular assessment may not be practical for all studies - but there needs to be a clear commitment by policy-makers to reduce the weighting of examinations on the learning journey, and to back this up with a budget to secure the resources necessary to make this commitment a reality. Policy-makers must figure out the most practical way of replacing a system where students sit in a class for a certain amount of time and get graded at the end. The modes of assessment must be diversified to become fit for purpose in that they demonstrate what the student has learned. An assessment System should not be flexible - but it needs to serve its users well, which means that it must be appropriate to the student and the learning rather than to the needs of the tutor. Applied & vocational learning is evidenced through the creating of artefacts / solving of problems / provision of different solutions and testing them out / innovation & creativity, and other methods. Credit must therefore be given to these practices. We need to review existing practices, both locally and abroad, to be able to propose appropriate reliable and valid modes of assessment. Assessment should not be for summative purposes only, but as a way for further, formative learning.

6) Parity of esteem between different pathways is vital, despite the challenges to policy-makers in appropriate approaches to design and recognition. In 2017, there are over 1,500 students

opting for VET subjects in year 9 (form 3), demonstrating the readiness of both learners and parents to consider VET and academic pathways at par. Policy-makers' point of departure may well be MATSEC, and how MATSEC may recognise and award multiple (including modular) modes of assessment without fragmenting the existing system – but it is vital that there is alignment to the changing needs of Maltese society. Parity of esteem must also be practiced at the different educational institutions and evidenced both by all stakeholders, both internal and external. Parity of esteem is a cultural change and therefore a challenge for both learners and parents. MEDE needs to develop communication campaigns across offline and online media to support such a change.

Moreover, much also depends on the commitment of individual institutions operating at level 4 to subscribe to programmes of change - specifically:

A) The propensity of individual institutions to facilitate and accredit alternative pathways and parity of esteem within a modular approach and accreditation system - for instance, preparedness that the first year of intermediates includes VET subjects.

B) The potential and interest of each institution to decide on its own forms of level 4 certification. By certification, we mean IB, MATSEC, MCAST, some alternative standard developed by NCGE etc. A school-based assessment regime is also possible with a modular system. However, the needs of independent candidates also need to be considered: school-based assessments would not cater for these candidates.

C) The preparedness of individual institutions to explore alternative entry requirements for level 4 programmes to the current entry requirements of a set if level 3 qualifications. Although the prerogative for entry should always rest with the institution, parity of esteem predicates that each track should have equal value.

7) Modular assessment systems must provide all students the opportunity to accumulate different forms of learning within a coherent national assessment framework that leads to national certification at the appropriate level (up to MQF level 4). The challenge for the NCGE will be to

develop and implement the requisite quality assurances through internal and external verification, across the years preceding the national assessment, eventually replacing a one-time controlled summative assessment model.

8) There needs to be a sustained effort to develop more varied assessment practices which include a greater balance between ongoing formative and summative modes, and adopt a wide range of instruments including practical as well as written assessment tools. It is essential to reduce the degree of high stakes in the assessment adopted at the end of compulsory schooling and general education by embracing a no-dead-end approach to education. While acknowledging that the extent of the high stakes is mainly reliant on the level of dependence on the qualification for progression into further and higher education, training and/or employment, the transformation from a model adopting a single controlled summative assessment, into a model which considers teacher-set ongoing assessment spread over two years should help in mitigating on the current scenario. Different models may better suit different learning areas.

9) The modular assessment system must be capable of assessing and rewarding the different skills, abilities and competences of students. The top 10% or high-performing students deserve a curriculum and assessment system that best enable them to develop their skills as much as the 90%. The system needs to cater for the different needs of different student competences, and deal with them with equanimity. Conversely, the focus on learning outcomes should facilitate modular assessments and hence relative measurements of success.

10) It is vital that assessment systems incorporate the right balance between exam and non-exam progress assessments. For instance, a form of synoptic examination could carry a proportion of the final mark of a completed module. This may encourage a wider view of the subject, and potentially encourage students to integrate and relate learning from other subjects, breaking away from the 'subject divide' and encouraging inter-curricular approaches. The value of assessment through formal interviews, as in the Italian system, where students cannot "predict" questions based on past-papers and where their language or communicative skills are given primary importance, should be given a lot of attention.

11) Any proposal to develop and implement modular systems must come up with practical solutions to a long-standing conundrum. Students invest two years of their lives in a post-secondary system where success or failure is solely dependent on securing a pass or better of a summative exam. The objective of students is therefore inevitably to clear the examination hurdle as quickly as possible and secure entry into their higher education institution of choice. If the student developmental model were to be pursued, then students attending level 4 institutions would not be allowed to sit for level 4 qualification examinations before concluding the two-year programme. If the assessment were to be on-going, then the option for students to sit for exams before the programme's conclusion would simply not be available. The only way for this to happen is if assessment were to become school-based. A modular system could be introduced whereby certain parts of subjects can be sat for during the two years of the post-secondary period, rather than sitting for a summative exam at the end of the two-year programme. This system would be more flexible and allow students to have a more balanced lifestyle. *Table 12* is a summary of the typical components of a module[34].

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[34] Adapted from http://www.facultyfocus.com/articles/online-education/a-modular-course-design-benefits-online-instructor-and-students/

Pre-assessment

- Each module should include an activity that determines students' initial knowledge of a topic before taking part in the learning activities within the module. The results of this activity can be compared to assessment results at the end of the module to measure achievement of learning outcomes.

Learning objectives

- These are specific statements introducing the module's objectives, its rationale or purpose, and context activities.
- These typically include the actions, performance criteria, and conditions of what students will be able to do upon completing the module. Learning objectives provide ways for students to engage with each other in discussion and with the information and concepts opportunities to practice, apply, analyse or synthesize new information. They may include worked or practice exercises, labs, or case studies.

Assigned reading

- Specify chapters, pages, documents, slides, lecture notes and provide guided reading suggestions or points for students to look out for in the reading.

Assigned writing

- Writing assignments can range from posts to the discussion board to formal papers. Each assignment should have a clear explanation of expectations and evaluation criteria.

Exercises/activities

- Each module should have an interactive activity for the entire class or for groups, which encourages critical thinking and practical application of the material covered in the learning module.

Further study

- Use Internet resources and others provided by publisher websites to enhance learning and stimulate students' curiosity to dig deeper into the subject matter.

Post-assessment

- The end-of-module assessment should be in the same format (e.g., essay or quiz questions) as the pre-assessment to measure student progress.
- Chance to reflect and articulate students' acquired knowledge. Includes a formal or informal assessment of module's objectives.
- Feedback to students regarding their learning and accomplishment of module objectives and possibly additional resources for students to extend their learning through enriching activities and evaluation.

Table 12: Typical Components of a Module

Recommendation 12: Re-write Advanced & Matriculation syllabi with 21st century skills as basis for Learning Outcomes Framework for sector

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1, 3, 4 and 7

The development of a more effective and comprehensive skills infrastructure at post-secondary level is essential if we are to offer young people adequate opportunities to realise their potential, make a successful transition to adult life and provide the basis for long-term career and personal development.

The learning outcomes for level 4 programmes have yet to be determined, so there is no comparability exercise available of MATSEC syllabi with syllabi at the same level (i.e. syllabi at end of Form 5 (age 16) and Matriculation Certificate pre-university (at age 18)). The modular approach to the curriculum and assessment would benefit if the post-secondary syllabi were re-written such as to be guided by a 21st century skills framework. The sixteen 21st century skills identified in a recent World Economic Forum provide a solid set of skills to guide a future sustainable post-secondary education system.

1) Policy-makers should set up a working group in conjunction with the National Skills Council to determine how 21st century skills can be integrated at the LOF and assessment level of the post-secondary sector. At secondary school level, where the LOFs have already been defined, the successful implementation of the LOF for each subject will inevitably entail a paradigm shift in certain curricula, processes, assessments, pedagogy and methodology. At this juncture, it is difficult to determine the institutional and pedagogical changes that will need to take place at secondary school in the next years. At post-secondary level, industry and other social partners should become stakeholders in the process together with policy-makers from MEDE to ensure 21st century skills are inculcated in the LOFs for the sector and which are aligned to the current and future needs of industry.

2) To determine the skills being taught at post-secondary level, policy-makers would need to conduct an audit of existing teaching methods to assess teaching effectiveness. The LOF

challenge is to identify best practice in other educational systems and align these with our national context and teachers' requirements. There is an inevitable tension between knowing that change is necessary yet at the same time knowing that there are financial, human and structural resource challenges to be overcome. The National Skills Council and the real needs of industry and the skills gaps of young people starting a career need to be incentives to accelerate this change process. Such an exercise would address the widespread complaints about the length and difficulty of the local syllabi and possibly conclude whether these are justified or not.

3) To remain globally competitive and develop engaged citizens, schools should incorporate 21st century competencies and expertise throughout the learning experience and across all MQF levels 1 – 4 curricula. Basic skills must go hand in hand with other key competences and attitudes. These include the development of critical thinking, complex problem solving, collaboration, and adding multimedia communication into the teaching of traditional academic subjects. Syllabi must support and nurture creativity, entrepreneurship and sense of initiative, digital competences competence in foreign languages, e-literacy and media literacy, and skills which reflect growing needs, such as those in the green economy and in the digital and health sectors. Learners should have the opportunity to develop a sense of agency in their learning and the belief that they are capable of succeeding in school. The assessment programmes should be rigorous and include modular methods assessing both skills and knowledge.

4) To develop a learning outcomes framework that introduces 21st Century skills in the Advanced Matriculation (AM) and Intermediate Matriculation (IM) MATSEC syllabi, MEDE should oversee the establishment of subject boards with representatives of the National Assessment Authority, the National Commission for General Education and the National Skills Council. The boards need to identify the changes to be made, for each syllabus: a) course entry criteria; b) learning outcomes of the course; c) delivery modes; and d) assessment methods and requirements. This should be done over a minimum period of two years and be integrated into the modular system for post-secondary education.

There are a number of considerations that will need to be managed by the boards:

A) Each board should be able to identify relevant modules and draw up the LOFs needed in each subject.

B) The system should be flexible enough to include electives as necessary.

C) The remit of the boards should extend to both formal and informal learning.

D) The exercise should identify and develop ways to assess those skills that are difficult or impossible to assess with a pen and paper examination.

E) The focus on 21st century skills means that there needs to be a concentrated effort to stop viewing vocational and academic learning as two different silos. Both are improved when they are planned and developed in complementary ways, with opportunities for young people to access both and switch between them.

5) Training for syllabus panel setters should be provided so that syllabi are written according to pre-defined learning outcomes.

A) It is important that the process starts with a needs analysis of the stakeholders concerned, with the needs of the student given priority. MEDE, together with the NAA and the NCGE need to work in concert to ensure that training incorporates delivery modes, assessment methods and course entry criteria.

B) Training should be conducted by subject syllabi panels as in the present MATSEC system, with the significant difference that the NAA will not be limited to focusing on the academic pathway to University.

C) Ideally, subject syllabi setters and examiners should be formally trained by a unit within the Institute for Education that specialises in post-sixteen training and continual professional development. A lot of experience has already been gained through the process of development of

LOFs at secondary levels and these experiences should be utilised to the full. This experience now needs to extend to 21st century skills.

D) Syllabi setters should ensure that subjects can inter-link with others according to the needs analysis in A) above. It is important that the subjects and modules are be looked at holistically with the aim of enriching the student experience. A few AM and IM subjects already have a component of school-based assessment. These should be extended to other subjects and given a greater weighting to reflect the changes at the compulsory level.

6) Beyond essential core academic competencies, there is a growing body of research on the importance of non-cognitive competencies as they relate to both academic success and successful engagement in the labour market. Non-cognitive competencies include successful navigation through tasks such as forming relationships and solving everyday problems. They also include development of self-awareness, control of impulsivity, executive function, working cooperatively, and caring about oneself and others. The contemporary workforce calls for employees that are agile, adaptable, and inventive. Our sixth forms should be the points of departure to revamp existing programmes and creating new ones to nurture these key skills. In other countries, sixth forms are also deeper learning approaches - the mastery of content that engages students in critical thinking, problem-solving, collaboration, and self-directed learning. In order to remain motivated, students need to be able to make clear connections between the curriculum and the real world, and how the new knowledge and skills will impact them. Project-based learning, challenge-based learning, inquiry-based learning, and similar methods are fostering more active learning experiences, both inside and outside the classroom.

Recommendation 13: Use Open Education Resources and MOOCs to redesign and deliver accessible, competency-based curriculum content

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1, 4 and 7

There needs to be a significant effort to open up education. Open education is an umbrella term under which different understandings of open education can be accommodated. It goes beyond open educational resources (OER) and open research outputs to embrace strategic decisions, teaching methods, collaborations between individuals and institutions, recognition of non-formal learning and different ways of making content available. The EU is keen on establishing a common vision for opening up education in Europe, and launched OpenEdu Policies, a project running from January 2016 to March 2017 aiming to scope, refine and propose policies on opening up education for both policy makers in Member States and at European level. The policies proposed cover the 10 dimensions of open education and are based on the OpenEdu framework for openness in higher education (*see Figure 14 below*).
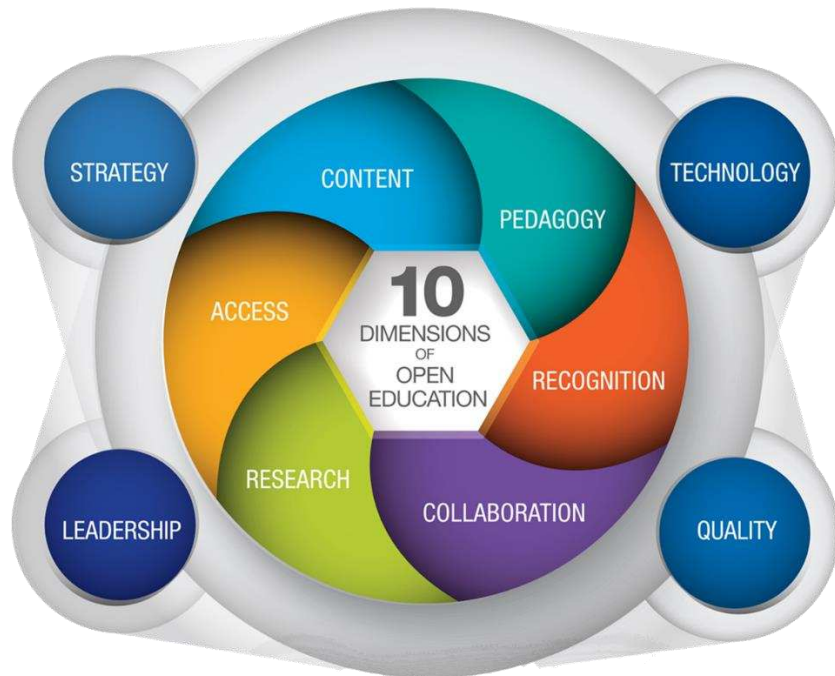
Figure 15: 10 Dimensions of Open Education

Source: JRC IPTS report: Opening up Education: A Support Framework for Higher Education Institutions

Open educational resources (OER) increase the variety, accessibility and availability of content for the post-secondary curriculum. Policy support is vital for OERs to reach their full potential as social innovation in the post-secondary curriculum. MOOCs and OER should be seen as social innovation that can be used as a catalyst for introducing new forms of teaching and learning in the short term, without the time lag of 'waiting for academics to develop the content'. At its most basic level, OER represents a plug and play model for new, compelling, quality content at a fraction of the price currently being paid for the development of 'examinable content' to be used in the sixth form classroom. At the other end of the scale, OER is one element in open education that needs to be integrated into an educational environment. Typically, this integration process involves two parts: a) how OER are originally used and b) how their use changes depending on the people using them, their goals and content.

As an illustration: in a typical implementation of OER in the classroom, the lecturer passes on information in brief spurts, normally not more that 7-10 minutes, reducing the risk of the tendency of the human mind to lose focus. The information is passed on point by point, with feedback embedded either inside the clip or at the end of the clip. In a small country like Malta we can also have the advantages of integrating online learning which would allow the student to get immediate feedback and blended learning, with assessment not being online, and releasing time for fora, focus groups and workshops, etc. where human interaction is vital.

1) OER represents an educational ecosystem which includes: a) content; b) media technologies; c) educators; and d) learners. Without proper planning for the interaction of all of these four components, any attempt to deploy OER is likely to fail. Employing OER to simply replace other education resources (e.g. textbooks) should increase access and reduce costs for learners, but will have a minimal impact on the learning setting and on formal learning outcomes. Only by using OER as a new form of learning for the 21st century can their full potential be unlocked.

2) Policy can support OERs through mandating or encouraging its use and production. The adoption of OER implies an education system that is flexible, adaptable and supportive of 'free educational resources' for learners; but also cognisant of educational resources that may change rapidly over time and in different contexts. Since there is currently no OER in the post-secondary

curriculum, government could consider changing the funding of educational resources or change the regulations for their production and use. One way of centralising and focusing efforts on the use and sharing of OER is to set up a central repository for openly licensed educational material or to support efforts to make existing OER more discoverable.

3) Since making OER available does not ensure that they are used, an entity needs to take a lead in promoting use. The newly set-up CCCL can take a lead as a 'cheerleader' for all things OER in Malta by encouraging pilots and rallying public support and working in proximity with MEDE stakeholders (NCGE, Department for E-Learning and Institute for Education) as well as public, Church and independent sixth form colleges and the National Skills Council.

4) There is also a need for a national driver for digital education with the remit to incorporate technology in the curriculum and drive change. This may be a re-purposed e-Learning Department or a new policy department. The driver has to focus on pedagogy, not technology if it is to become pivotal in re-thinking the curriculum. There is a need for professional learning technologists / instructional designers who can work with teachers to create and deliver blended and fully online courses. This driver will also contribute to innovations in assessment through the use of technology, since this is a difficult part of education to change but important if student learning is to be deeply affected. Although much innovation in the curriculum can be driven bottom-up by teachers, our view is that a more strategic and system approach is needed if there is to be some meaningful, short-term change in curriculum.

5) OER implies a new role for teachers. Flexible access to high-quality educational materials is positive for learners, but they will require new support services to fully benefit from the use of OER. This leads to a new role for teachers as catalysts for learning. Furthermore, teachers and instructors require support as they develop new skills and overcome motivational and organisational barriers to sharing or collaborating through OER. These changes must be reflected in teacher training and continual professional development courses.

6) Sixth form principals should consider establishing metrics to record the typologies and extent of online, blended and open education. This would enable sixth form colleges to compare

themselves with others and monitor their own progress in introducing technology into the curriculum. MOOCs and OERs lend themselves well to the deployment of pilots within the curriculum.

7) From a technology perspective, the learning management system (LMS) must be capable of supporting the introduction of technology into the curriculum of sixth forms. This must not be an end in itself. The range of new technology applications available has expanded greatly as has the amount of high quality digital content. The adoption of MOOCs and fully online education by high-ranked universities is reducing negative view of technology in some academic quarters. Nevertheless, there are gaps in research on the use and adaptation of OER. Policy makers should promote and fund evidence-based research for policy and practice on how OER are produced, and how they are used in certain contexts and by the key actors in the post-secondary education system - teachers, instructors, and learners.

8) The emerging global OER movement is constantly updating its strategy to embed OER into mainstream education. *Annex 6* includes a checklist adapted from the Foundations of OER Strategy Development[35] to highlight the gaps that exist in the current approaches to post-secondary education in Malta and Gozo and suggest initiatives for kickstarting sustainable approaches to OER.

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[35] see www.oerstrategy.org

Recommendation 14: Focus on reducing risk of early school leaving by offering alternative pathways

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1, 3, 9 and 10

Policy-makers need to focus on facilitating more inclusive approaches to post-secondary education to break the cycle of disengagement and low performance at further education. There is a need for a culture change where it becomes always more mainstream and culturally acceptable (even without the legal provision to back it up) that students remain in education at least up to 18 years of age. In order to do so we have to offer as wide an array of educational solutions as possible, that would in turn address the needs of different young people leaving compulsory education at 16. MCAST has been successful in attracting students to continue with their studies through a VET system which has appeal to 'hands-on' types of learners. The antithesis to the 'one-size-fits-all' regime requires MEDE and other education stakeholders to 'go the extra mile' and provide alternatives to students who, for several reasons, may see no option other than to drop out of the education institution in which they find themselves, and particularly in the first year of post-secondary

There is a significant challenge in finding solutions for young people who for some reason or other cannot or do not wish to continue their studies at post-secondary through an academic or VET stream. The reasons for dropouts are typically individual and socio-economic - ranging from students being unable to cope financially to simply being caught up in activities which are not conducive to learning. Students in the focus groups also associate dropout rates with making the wrong choice of subjects, citing the great difference in level and skills required between SEC and A-Level - Maths is an example. Teachers also point to the 'new study skills' required to succeed at sixth form as being especially problematical with some students, saying that students may also drop out because they do not have the 'learning to learn skills' required at this level.

1) Remedial support needs to be provided as early as possible. The educational system makes provision for students attending the tail-end of the secondary system to move to alternative pathways at post-secondary level, even if they have failed to secure a single SEC pass. The ALP

Centre in Paola[36] and the Ġużè Ellul Mercer School (GEM 16+) in Gzira offer a range of vocational programmes for such students. Vocational subjects at SEC 'O' level area also being offered in secondary schools in Agribusiness, Engineering Technology, Health and Social Care, Hospitality and Information Technology. The ALPs are meant as facilitators, interim pathways that enable young people to mature and to entice them into lifelong learning, whether in full-time further and higher education, or by combining work and part-time study. At GCHSS, 280 students with only two SEC passes joined the school, but opted to follow the SEC course. MEDE should consider the feasibility of having an additional ALP school in more socially-disadvantaged regions, including one in Gozo. MEDE is currently considering an 11th college to comprise schools that do not fall within the kindergarten-primary-middle-senior school model. This would bring these schools together and reinforce their ethos (such schools as GCHSS and GEM 16+). Ideally such regions should be considered as Educational Priority Areas (EPAs) and given the best resources – teachers, SMTs, social workers, psychologists and infrastructure, including well-resourced small classes and appropriate curriculum. This may appear to be an expensive option, but is likely to reap significant benefits for learners in the long run.

2) Many young people who drop out at post-secondary make an attempt to continue with their education at a later stage when they are more mature or when personal circumstances have changed. Systems also need to be geared up for late developers as well as those who may wish to change education or VET institution, as opposed to dropping out totally.

A) Evening classes need to be given more attention or publicity, by citizens and policy-makers respectively.

B) The introduction of vocational subjects at Intermediate and A-Level, as opposed to just SEC, may be a powerful incentive for people to stay within the education system. In the first year, students should have the chance to take both academic and vocational subjects or modules. Students should sit for all their Intermediates in the first year and continue with A-Levels in the

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[36] This is a very specific programme providing a second chance programme focused on VET. As from scholastic year 2016-17 it is also providing a second-year programme for students who have done their form 5 at the ALP, in order to facilitate the transition of students from the ALP into employment or further education at MCAST and ITS.

second year. This would enable students to try the different kinds of approaches to a subject in the first year and proceed according.

C) Credits accumulated in one subject should be recognised in the event the student decides to change subject, discipline or school in the middle of the course. Modules completed in an academic subject would be recognised and credited should the student move to another vocational subject (this already happens at MCAST). As a general principle, the post-secondary education accreditation system should be flexible enough to ensure that no acquisition and integration of knowledge and skills is 'wasted'. We cannot say that a student who has acquired a knowledge of Shakespeare, for example, has wasted his or her time when he or she migrates to a course in psychology or even sciences in the second year[37]. This will really acknowledge the importance of realising that knowledge is a series of linked systems. Both academic and vocational subjects should be accredited by the same organisation (the NAA) with the possibility of having both VET and Academic subjects in the same certificate.

3) There are emerging technologies that may enable both learners and institutions to record personalised learning data. MEDE should lever on its international networks in digital education to identify and pilot a system that can identify low performers (and therefore students who are perceived to be at risk of dropping out) such that it can design a tailored policy strategy.

4) The focus groups point to problems of parity of esteem in terms of perceptions of institutions and education routes (academic vs VET). The ALP centres would benefit from proactive public relations. It would also be beneficial for some students currently attending the ALP Centre in Paola to be offered a second year at the Centre with the objective of trying to secure a minimum of Level 3 general certificate of education[38]. The linkages between the ALP centres and organisations such as ITS and MCAST need to be nurtured and success stories celebrated. For instance, some students who previously attended the ALP centre have secured entry to ITS and are pursuing training there.

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[37] This is already happening with SEC vocational subjects.
[38] A pilot project has been introduced in academic year 2016-7, with students in second year at ALP Paola following a course in welding in conjunction with Motherwell Bridge and a course in Hospitality in conjunction with ITS.

6) Teachers need to have structured support and training to improve their capacity to provide instruction for all types of learners. Those teachers who reported spending more time keeping order in the classroom also reported less self-efficacy. Initial teacher education should include sufficiently long periods for teachers to practice in a variety of schools. More flexible classroom situations, such as team teaching, might also allow teachers to share the tasks of teaching and disciplining students. Systems that may support teacher professionalism and development are, in many countries, less frequent in high than in low needs schools. There is a missed opportunity to provide a boost to teachers in challenging situations, particularly since the positive relationship between teacher professionalism and job satisfaction is amplified in high-needs schools. The Institute for Education might be able to address this: this was one of the actions identified in the Early School Leaving Prevention Strategy.

7) Analysis shows that the degree to which advantaged and disadvantaged students attend the same school is more strongly related to smaller proportions of low performers than to larger proportions of top performers. This suggests that systems that distribute both educational resources and students more equitably across schools would benefit low performers without undermining better-performing students.

8) Policy-makers should develop a part-time route into further education for young people who, out of necessity or out of choice, would rather get a job and study on a part-time basis for MQF 3, 4 and 5 qualifications.

9) Policies related to inclusive education and integrated communities need to encourage the involvement of parents and local communities. At post-secondary level, these need to lever on better information at secondary and post-secondary school level to crystallise into programmes that:

A) Provide targeted support to disadvantaged schools or families.

B) Offer special programmes for immigrant, minority-language and rural students.

C) Tackle gender stereotypes and assist students from single-parent families.

D) Reduce inequalities in early education.

E) Provide better linkages between ALP centres and post-secondary institutions as a means of dismantling multiple barriers to learning.

F) Create demanding and supportive learning environments at school.

G) Encourage the involvement of parents.

H) Inspire students to make the most of available education opportunities.

I) Encourage hands-on approaches to subjects through internships as part of the sixth form experience.

Recommendation 15: Develop programmes that can actively contribute to student pastoral care & socio-development skills

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1, 2 and 3

Policy-makers need to insert student pastoral care and socio-development skills on an action agenda that can support young people as they navigate through academic and VET systems at a critical period in their lives. More importantly, these skills need to be built into mainstream subjects rather than conceptualised as stand-alone development programmes. Students aged 16-18 are legally still under the custody of their guardians and teachers should respect the fact that students are in the process of becoming adults. Pastoral care is about putting the needs of the student first, before those of the education system or any institution. This report reiterates the need to consider students as individuals with unique values, attitudes, perceptions, skills, ambitions and world-views. Pastoral care needs to focus on individual needs and the development of personal skills as much it needs to identify ways of facilitating and integrating the student into a co-learning community.

1) The Task Force should commission an expert report, in conjunction with MEDE, to identify quick fixes and pilot programmes that can actively contribute to post-secondary students' well-being and help them progress to the next stage of their learning journey. It may well be that some of the changes proposed appear to be micro-management, but it is vital that the disengagement between the institution and the 16-year-old student is addressed. Only one of the post-secondary schools meets students at application stage to provide help with the completion of forms and ad hoc advice by subject teachers. Teachers who do get involved in this process do so on a voluntary basis. Open days do exist, and they are well-attended by prospective students - but the opportunities for closer interaction between the teacher and individual students should start at prospect stage. All too often, over a two-year period, teachers have no understanding of students' individual capabilities, and hence does not try to use different methods of teaching suitable for different learners (e.g. blended learning may work for those who are struggling with the traditional lecture method).

2) The Task Force should work with MEDE to reform the guidance and counselling services in post-secondary education: similar reform needs to take place at secondary school level. There are currently few attempts within secondary schools to make students aware of their strengths and weaknesses and how these in turn influence personal modes of learning (St. Aloysius is a notable exception). Student support services should not be information offices on academic matters (grades, subjects required to enter a particular course etc.), but places, spaces and opportunities where the student and his tutor/mentor can engage with professionals with regards to socio-affective, social and career choices.

Institutions should consider introducing a Class tutor on the same lines as a Form teacher in secondary schools. A system can be organised whereby the tutor meets small groups (e.g. 5 students at a time) three times a year to discuss their needs, concerns, etc. Individual meetings can also be held as necessary. However, for this system to have a chance of success, it has to be structured as a new initiative as opposed to an imitation of the less than useful Form teacher system.

Reformed guidance and counselling services in post-secondary education should address:

- Personal counselling - including educational and career guidance, focusing on individual programmes to enable the student to develop skills to make right choices throughout their education and future employment.
- Assessment - including psychological or competence/performance-related assessment.
- Information on learning and labour market opportunities and career management.
- Consultation with peers, relatives or educators.
- Vocational preparation - pinpointing skills/competences and experience for job-seeking and organising visits, work experiences, placements and internships
- Referrals - to learning and career specialists.

Guidance and counselling can be provided at schools, training centres, job centres, the workplace, the community or in other settings. Any new guidance and counselling system must also improve co-ordination with other teachers and heads of Department on issues related to student pastoral care.

3) The current individual educational programmes (IEPs) available for disabled students should be extended to all students. Ideally, an IEP team should be composed of: subject specialists; subject sixth form teacher; a guidance and counselling mentor and a youth worker. The IEP team would use IEP principles and lever on emerging technologies to develop and monitor personal development programmes for all students. An IEP system which is re-designed for application with all students, can offer a number of advantages in that it:

A) Enables individual profiling of all students at an early stage of the first year of sixth form.

B) Facilitates interpersonal communication between students and teachers.

C) Alerts the institution of special needs, so that the appropriate tutor/mentoring system is activated early on. Students have traditionally been requested - tacitly or specifically - to leave their personal issues outside the class. Yet personal socio-economic issues are frequently a major problem that hinders the progress of students and leads to drop-outs.

D) Looks at the strengths and weakness of each individual student in terms of his educational profile available from secondary school. Teachers need to work at the pace of learners.

E) Engages with students to discuss hopes, fears, ambitions, problems etc. and develop an IEP which will be regularly re-assessed and adjusted when necessary. This will also enable the tutor to keep the lines of communication between the institutions and the student open and current. School connectedness is a very strong indicator of student wellbeing at post-secondary level - even more so than parental attachment.

F) Enables the institution to take corrective action during the two years of sixth form. For example, a student may need more time to achieve the required modules, in which case the IEP would be spread over three rather than two years. A student who is a more 'hands-on' type of learner could be guided to switch to more appropriate, equally-accredited courses. IEPs should become a cornerstone of more flexible systems within institutions to help students transition

from the sheltered, protected secondary school mode to the increased demands of further education.

4) Post-secondary institutions need to become communities of practice, where students at the outset are made to feel that they belong to the 'whole'; and where they can be sure they may find support in both the personal/emotional sphere and in the teaching and learning process. School connectedness is a very strong indicator of wellbeing and depression in students - even more so that parental attachment. Within this context, the institutions should support initiatives that facilitate:

A) The development of co-learning skills, which in turn facilitate horizontal networks and communities of practice.

B) Short courses on team, community and people skills. People skills and ability to work in a team are as essential as the critical skills and innovation components of 21st century learning. Students who do not find themselves in a community which encourages and supports communication between both students themselves and student-teacher-institution cannot be expected to develop these skills.

C) Sports activities should not be a one-off event or left to chance but should be part of the post-secondary time table for *all* students.

D) Project work that improves students' engagement with the world of work while still in the education system.

5) MEDE should encourage sixth form institutions, including new entrants, to develop smaller going-concerns with smaller classes, at least in the first year. This would in turn enable institutions to concentrate on developing, assessing and rewarding autonomous learning skills which underpin the majority of 21st century skills. In other words, students at post-sixteen institutions, should be considered as young people in the process of 'becoming adults' rather than fully-fledged adults. This should also be seen in conjunction with the very common

perception of teachers and administrators at this level that there is often a big difference between a student in first year and the same student in the second year.

6) Selecting the methodologies and tools to help students develop personal and socio-development skills represents a significant challenge. The notion of problem-solving as a component of pastoral care is an alien concept at sixth form, where problem-solving is more akin to what is tackled during science/maths classes.

A) The IEP process should include the opportunity to engage with students in selecting the most appropriate tools suited to the particular student's profile. In contexts where a 'tool' is associated with off-the-shelf, tried and tested techniques, procedures, equations & solutions - engaging with and explaining to the student how problems can be addressed through particular techniques and technologies could become fundamental in re-focusing attention on pastoral care.

B) By involving students in a discussion on how tools are used in problem solving, students may also engage with decision-making principles and how learning to choose the best tools for the job are important for tackling real life problems. The process could also help students understand the 'bigger picture' of a particular course and its modules, as opposed to education simply being a fragmented group of unrelated subtopics.

C) There are opportunities to inspire a deeper level of learning by introducing the problem and giving students time (days to weeks) to come up with solutions. If students are exposed to this delivery approach at a young age, there should be a positive impact on their ability to solve problems in both their education experiences and private lives. Clearly not all content in current syllabi needs /or can be presented in this way but the IEP could provide opportunities for the IEP team to use components of the current curriculum to simulate problem-solving situations.

6) Pastoral care also needs to extend to those that have specific needs. These include:

A) Vulnerable young learners because of specific socio-economic problems - these are most likely to be early school leavers.

B) Young people with mental and social care needs. Within this context, sixth form needs to operate as inclusive education, where the role of community is vital in providing support to vulnerable young people and ESLS (at home and in the school).

C) Students with a disability, including those with hidden disabilities, with personalised forms of assessment and possible alternative subjects (such as a special paper for dyslexic students, which could still enable them to follow higher education).

Recommendation 16: Involve learners in the design and testing of post-secondary curricula

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1 to 7, 9 and 10

One way of addressing many challenges identified in this report is to provide students with a degree of agency over learning solutions and move away from prescriptive, top-down solutions. This represents an urgent alignment of an education system where modes of instruction and assessment remain more in line with the needs of the past than those of young people in the 21st century. Within the Malta context, facilitating student agency over the curriculum would represent an indication of policy-makers' determination to recognise alternative pathways; and that the point of departure for meaningful change must be the learner, not the institution.

1) There is much literature on 'personalised learning', which in practice is more akin to 'personalised instruction'. Either the human or the algorithm identifies the gaps in the student's learning, and then supplies 'personalised' curriculum to fill the gaps. Either way, the student is a passive object of the personalisation. Someone or something else is deciding what the student 'learns' and how it is assessed. In practice, it is difficult for the teacher to determine if the learner is really 'learning'. Moving agency over learning to the learner means enabling the learner to make decisions on questions that are of interest, and the paths to take to knowledge: this is what truly constitutes 'personal learning'. Within this context, strategic plans for personal learning are devised by the student in conjunction with lecturers and mentors.

2) One way of involving learners in curriculum design is to introduce design-thinking methods through student focus groups, whose workings and outputs become instrumental in developing curricula for specific subjects. The rich data received from the learner focus groups during the course of this report are indicative of the great need to put learners at the centre of post-secondary solution - including consultations on the development of curriculum. Students are asked about what they liked and disliked about the subject, the teaching and assessment methods - and also for solutions. In other countries, user-centred design approaches are being facilitated by colleges engaging students online, sometimes in creative ways - but few solutions are

developed with student feedback. Many of the hardest-to-solve problems in schools involve a confluence of actors, including teachers, students, parents and society. Specifically, solutions handed down from others rarely work. Design-thinking tools used in other industries can be applied in schools to help them better understand and include all stakeholders in the solution.

3) Pedagogy must value student thinking as opposed to regurgitating information. In education, policy-makers do not typically engage with students to find what is causing them to be disengaged as end-users. Instead, assumptions are made that student disengagement means that students don't care about school or don't have long term goals and dreams. In reality, young people do have dreams and long term goals, but cannot sustain themselves 'in the moment' to overcome challenges and reach these goals. Young people do not have the regulation skills - they have other issues pulling them all the time, even though they care and want to do the right thing.

4) The fundamental problem remains that the model prescribes personalised learning as a young person with peers in a class with one teacher. Technology may stimulate the innovation needed to re-create learning environments. Some schools are responding to 21st-century learning needs by regrouping teachers and learners, rescheduling learning and changing pedagogical approaches. Teachers and students jointly develop a framework for responding to situations in ways that make students feel valued. By framework, we mean a system to help students build the communication and self-regulation skills they need. This can only succeed by soliciting input from students about how to improve the academic experience. Once educators make it clear that student perspectives are valued and that their ideas were going to be prototyped and used in the school, even the most disaffected students will be enthused. Deep, lasting learning requires conditions that schools and classrooms simply were not built for. If good teachers were hypothetically to become learners again - they are likely to have had an interest and a passion for the topicand a real, authentic purpose in learning it; they had agency and choice, deciding what, when, where, and with whom they learned it, and they had fun learning it even if some of it was "hard fun." But in the vast majority of curriculum-driven schools, students sit and wait to be told what to learn, when to learn it, how to learn it, and how they'll be assessed on it. Rarely do they get to choose, and just as rarely does the learning they do in class have any impact beyond the classroom walls.

A) The mere presence of technology in the classroom, in the form of computers or tablets in a school or in mobile phones in the pockets of learners, is not sufficient to foster true innovation in the classroom. All education stakeholders should join together so that the drive to innovate in education is felt throughout the education system, not only in isolated areas. Teachers can play a crucial role as catalysts for change. Wider partnerships and connections should also be constructed, particularly when resources are scarce.

B) Information about the learning taking place in school should be fed back to the various education stakeholders, and incorporated into ongoing waves of revised strategies for learning and further innovation. This means that processes for self-evaluation should be in place and that the knowledge base should be developed continually through meaningful research that engages the worlds of policy and practice.

C) Learning-focused networks and communities of practice should be supported, and coherence with overarching education strategies should be ensured. Policy-makers should provide the legitimacy and the system-wide perspective to push innovation. Ideally, leadership from the local level, from networks and partnerships, and from education authorities at central and local levels should all be working together to create responsive 21st-century learning systems.

D) Student focus groups would be useful in determining learners' state of readiness for new pedagogies, MOOCs, games and other emerging approaches. The flipped classroom approach could be used to involve the students on both course component and assessment. The end result is that the content, often the theoretical/lecture-based component of the lesson, becomes more easily accessed and controlled by the learner. Students can be excited to go home and search for more information on the Internet. A pedagogy that values learners' thinking encourages students' engagement during teaching and learning process.

5) Parental involvement, when properly-planned and managed, can help students take up responsibility for their own learning in a mature way and in a manner that 'avoids casualties'. The post-secondary sector needs to allow for some parent involvement keeping in mind the fact

that they are youths and moving towards adulthood. Parents and students should also be kept in the loop, from the initial stages. Students are being involved through the focus groups, and they should be present where decisions are being taken. Parents' Day at sixth form needs to be revived, since this would be a fundamental way of monitoring personal learning and progress. Formal mechanisms for parental involvement in the post-secondary sector can be an additional opportunity for parent-youngster communication while raising awareness of the need to provide youngsters with 'space' to grow and take charge of their own plans for learning, education and future career paths.

Recommendation 17: Recognise informal and non-formal learning as components of the overall development of students

Focus: Curriculum Content – Subjects, Subject Content and Certification

Addresses: Challenges 1, 4, 6 and 10

Policy-makers need to rapidly up-scale the regime and supporting procedures for recognition of informal and non-formal learning so that a system of accreditation can also be introduced at post-secondary-level. The NCFHE[39] has been developing a system of assessment, recognition and validation of informal and non-formal learning with the objective that standards and guidelines are respected through internal and external verifiers.[40]

1) The recognition and validation of informal and non-formal learning needs to extend to the post-secondary Level 4 within as short a timeframe as possible. The role of the new NCGE will be pivotal in that it needs to take over and accelerate the current process driven by DQSE at Level 1, and scale up to Level 4 for young people up to age 18. The assessment process is at the core of any strategy to integrate sixth forms at the class delivery level. In turn, informal and non-formal skills can only be embedded if the curriculum is structured in such a way as to make this possible at the LOF level. This implies a commitment to deliver changes to governance, curriculum, learning, teaching and infrastructure across the entire education system.

A) Sixth forms have not been able to incorporate non-formal learning experiences across their courses and programs at scale, despite expert views that a blending of formal and informal methods of learning can create an environment that fosters experimentation, curiosity, and creativity. In this sense, an overarching goal is to cultivate the pursuit of lifelong learning in all students and faculty. However, methods of formally acknowledging and rewarding skills of both

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[39] The NCFHE responsibilities include: a) setting the standards and principles which are to be followed; b) regulating the bodies responsible for validating learning outcomes/occupational standards; c) regulation of teaching methods in educational institutions ensuring that quality assurance systems are put in place, that learners obtain a fair judgment; d) monitoring the validation process; e) acting as catalyst to promote validation of as much invisible learning as possible.

[40] NCFHE's Sector Skills Committee and Sector Skills Units within NCFHE are meant to establish validation processes at a sectoral level. The DQSE is also in the final stages of introducing non-formal/voluntary/social engagement of students in secondary school and accrediting it as 1 SEC.

instructors and students which are mastered outside of the classroom are compounding this challenge.

B) Most learning is of an informal variety and self-directed learning systems, and yet most of the discourse is about formal learning. We need to change the systems for support of all learning, not just formal. Learning that sticks is usually learned informally while explicit knowledge accounts for very little of success in most professions. Instead, tacit knowledge and the ability to learn from others, in the moment, both face to face and in networks is vastly more important and effective. Most of what is taught in schools is delivered of the notion that this is knowledge that may be needed some day, primarily because the system is still operating on the belief that explicit knowledge is scarce. The Internet has replaced the need for investing in explicit knowledge in the classroom. Those that will flourish in the modern world will be those who can learn what they need to learn "just in time" from a variety of networks and sources and experiences.

C) The aim of the educational system at post-16 level should not be restricted to academic aspects and development of skills, but towards the overall development of each individual as a whole. Non-formal and in-formal education contributes significantly in this regard.

D) The non-formal and informal activities conducted during these two years of schooling need to be recognized, encouraged and recorded in the final certificate that a student will secure at age 18. Prior learning needs to be accumulated and recognised. Some post-secondary institutions already have a good structure for these activities, others have less. Participation in non-formal education activities allows young people to develop knowledge, skills and attitudes that are frequently said to be needed in the labour market (such as team work, self- and project management, communication, leadership and flexibility) - and in life in general. These skills are also developed through non-formal education outside the school. Marginalised groups, including NEETS, minorities and disadvantaged young people can also benefit from structured programmes promoting informal and non-formal learning.

E) Educators need to acknowledge the ongoing, relentless impact of technology on education systems, where learners can easily claim that 'all knowledge is found on the net'. However, a recent EDUCAUSE study revealed that even though students and instructors use mobile devices regularly, they still need technical, logistical, and pedagogical support from institutions to understand how these can be used for learning purposes. Solving this challenge requires institutions and employers to view informal learning in a positive light. If the acquisition of 21st century skills is paramount, then this requires a radical change in assessment modes. As the Internet has brought the ability to learn something about almost anything to the palm of one's hand, there is an increasing interest in the kinds of self-directed, curiosity-based learning that have long been common in museums, science centres, and personal learning networks. These, along with life experience and other more serendipitous forms of learning, fall under the banner of informal learning, and serve to enhance student engagement by encouraging them to follow their interests.

2) The recognition of informal and non-formal learning will have an impact on how VET is perceived by young people. Those attracted to entering the labour market because of quality and well-paid jobs need to become aware of the importance of VET and vocational professional educational training (VPET). Higher levels and broader sets of skills and qualifications are increasingly required across the economy; VET and VPET need to be linked to the value the labour market attributes to skills and job profiles. Cedefop forecasts that 48.7% of all job openings will require high qualifications, 39.8% medium qualified people and only 11.5% will require low or no qualifications. Widening the image of VET to capture the upper strata is a necessary measure to ensure that even those at the bottom may aspire to get a job or later a better job and finally a quality job.

A) Adopting gradually the concept of VPET is the next step towards a higher profile for learning by doing. There needs to be a compelling alternative to the traditional way of acquiring skills, particularly for those who have been discouraged to continue learning by the schooling system, those who have been denied a diversified educational system and those who aspire to re-skilling and up-skilling. MCAST is ideally positioned to adopt a Swiss-type prospectus, separating VET from PET but with a clear indicator that VET can lead to PET, rather than remaining with VET

level schooling. The professional branding is comparable to the academic level but not to the vocational level. This process might take a while to implement, but it is time to send a strong message that parity of esteem is not just lip service but quality learning at all levels of the NQF.

B) If VET is to become an integral part of the post-secondary education system, VET programmes need to closely match the needs of the labour market in their permeability - both in terms of occupational skills and the number of target / available jobs for young people pursuing VET. Education and training begins at sixth form with learners having the option of continuing through tertiary level.

C) VET and PET are based on clearly-defined curricula and national qualification procedures. Typically, VET and PET are very flexible: learners may pursue more advanced education and training opportunities and later change the course of their professional lives with relative ease. Continuing education and training (CET) options are also available at all levels. PET takes place at tertiary level and is the next step after vocational education and training (VET). PET provides learners with specific qualifications and prepares them for highly technical and managerial positions.

3) There is a close correlation between informal and non-formal learning and the labour market. The NCGE and the Task Force should work in tandem with National Skills Council to identify significant opportunities for change to the post-secondary sector by widening the educational choices available to meet the needs of students with different educational and career aspirations and learning needs.
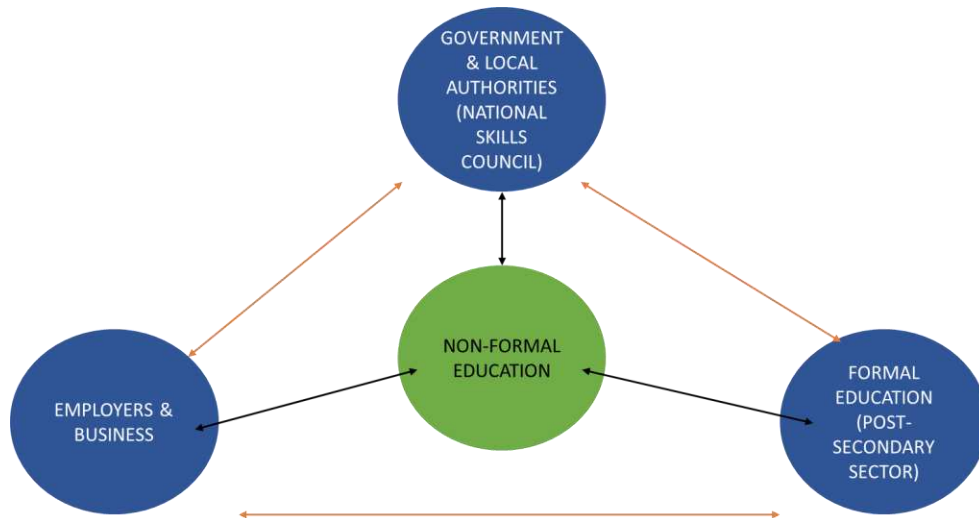
Figure 16: Key players in non-formal education

A) Formal and non-formal work learning complement each other, and should add real value to formal education and the labour market. The challenge is for MEDE, employers and educators to recognise and value non-formal education outcomes in professional contexts. The real-life experiences of young people, including work-based learning, internships and placements need to be recognised and deemed worthy of accreditation. These could include industry specific and general skills training. This education is complementary to formal education, self-governed, structured, intentional and can be developed individually or in a group. Blended, digital and work-based learning can all contribute to re-designing and re-aligning formal education to the real needs of young learners and the labour market. The National Lifelong Learning Strategy 2020 has an entire strategy on connected learning and makes numerous references to work-based learning.

B) Formal communication channels with specific business sectors are essential - particularly those which depend on innovation and creativity, two competences and capacities at the core of non-formal education. A hybrid college /industry culture should be facilitated in which students work with academics and business leaders to accelerate new ideas and turn them into products or services. A useful starting point is an exchange of information between key stakeholders to develop mutual understanding and shared concepts. Informal and non-formal learning needs to

be explained to individual sixth form colleges, Government agencies, employers' groups, recruitment organisations and civil society.

C) Non-formal education and youth work must be open to all young people, including those not in education and employment, and used as a means of motivating them to become active members of society. Often, non-formal learning is linked to youth work whereby individuals participate on a voluntary basis, and is often structured on learning objectives, with specific learning support.

D) The relevance and quality of learning from non-formal education providers must be improved, especially those that employ youth workers. The Task Force should use its privileged relationship with MEDE to facilitate the provision of accessible and user-friendly tools to improve non-formal education and youth work. The training context for youth work must be discussed and recognised as 'fit for purpose' by the NCGE: the focus groups discussed the few opportunities for internships at sixth form as meaningless and degrading.

4) Policy-makers should explore the merits of a dual-track approach to learning to be introduced for 16-year-olds. In principle, most VET programmes should be of the dual-track variety (i.e. part-time classroom instruction at a VET school combined with a part-time internship or apprenticeship at a host company). Within a European context, the majority of the MCAST programmes are of the less common variety, with an entirely school-based VET programme, full-time classroom instruction and no apprenticeship. Formal and informal learning at sixth form can be blended at individual institutions. The challenge is to develop ways of recognising and integrating students' previous work and life experience into curriculum design and delivery as 'non-formal and prior learning'. The NCGE will need to work with the NAA to find creative ways to leverage informal resources into coursework. Finding a balance between the connected and unconnected lives of learners is a significant challenge that cannot be defined easily - let alone solved. As educational technology is rapidly advancing and evolving, it is difficult to always discern when and how to properly implement it to foster real transformation.

5) Recognition of non-formal and informal skills should be an additional incentive for MEDE to launch a project for profile reporting of both formal and non-formal learning. As reported elsewhere, major institutions such as MIT Media Lab and Open University are exploring how the global Blockchain can be used as a new learning repository system. The objective is to create a new system to record, house, curate, secure, and distribute evidence of learning - within this context, every individual would become a lifelong registrar of his / her own learning, with evidence of learning stored securely and automatically validated and accredited[41].

6) The European Commission has been instrumental in acknowledging the benefits of informal learning and setting policy precedents[42]. There are already some EU instruments in place such as Europass and Youthpass to validate competences acquired through non-formal learning. Non-formal education and learning should be included in youth guarantee plans. Erasmus+ programmes also offer opportunities for young people to study, train, gain work experience or volunteer abroad[43].

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[41] In January 2017, MEDE signed a memorandum of understanding with the Learning Machine Group, who are currently collaborating with MIT Media Lab on an open system to recognise learning, using Blockchain technologies. See https://medium.com/learning-machine-blog/blockchain-credentials-b4cf5d02bbb7#.eq2v17uo3

[42] See *Recognition of Prior Non-Formal and Informal Learning in Higher Education* at http://eacea.ec.europa.eu/education/eurydice/documents/focus-on/152.pdf. The report describes an assortment of initiatives including Common European Principles for the Identification and Validation of Non-formal and Informal Learning and the European Guidelines for Validation of Non-formal and Informal Learning. Understanding societal changes and their impact on education is key to these programs. The world is moving away from the one-job-for-life culture towards a career succession that involves fast-paced, technology-rich environments. In the past few years, the EC has adopted the Council Recommendations inviting European Union countries to develop validation systems that enable individuals to obtain recognised qualifications based on informal learning experience. Part of solving this challenge means finding methods for recognizing informal learning at universities and colleges.

[43] 1. Erasmus+ programmes support: a) staff mobility (key action 1) for education, training and youth sector staff to teach or learn abroad; b) individual ability (key action 1) for all types of student to study, train, gain work experience or volunteer abroad; c) strategic partnerships (key action 2) that provide grants for long-term cooperation projects among education institutions and youth organisation with peers in other countries to foster quality improvements; d) knowledge alliances and sector skills alliances (key action 2) that address education and business, to foster entrepreneurship by improving curricula and qualifications through cooperation between the world of work and education; e) Erasmus for young entrepreneurs within the COSME programme funds exchanges for new entrepreneurs to benefit from coaching by experience entrepreneurs in other countries.
2. The Erasmus+ programme component 'Strategic partnerships' provides grants to long-terms cross-sector cooperation projects;
3. The Social Business initiative addresses legal and financial aspects to foster social entrepreneurship in Europe.
4. Social Innovation Europe connects policy makers, business, academia and third-sector workers with innovators from across Europe.

PREPARING FOR CHANGES TO INFRASTRUCTURE

The following set of recommendations (18 to 24) primarily relate to improving accessibility and resources to improve 21st century learning in the post-secondary sector.

RESOURCES

Recommendation 18: Invest in ongoing regular waves of quantitative and qualitative research on the sector

Focus: Preparing for Changes to Infrastructure - Resources

Addresses: Challenges 2 to 6

Policy-makers need to invest in relevant, ongoing waves of quantitative and qualitative research to provide concrete data for a programme of change, and future-proof solutions. Transparent and ethical data collection methods and clear learning outcomes for specific subjects are the starting point for secure accurate, reliable qualitative and quantitative data.

1) This report levers on the collective experience of the members of the working group, desk research and the findings of two qualitative focus groups with learners and teachers. MEDE should lever on its proprietary networks, including its relationship with the NSO and access to EU funds, to commission ongoing waves of quantitative and qualitative research. It is vital that changes made to key programmes within the post-secondary offer - particularly those that impact curriculum, assessment and governance - are monitored closely. Policy-makers need rich data and detailed impact analyses to enhance the evidence base and inform future decisions. A useful concept is ongoing 'curriculum evaluation' which focusing on objectives, subject content, teaching practices, assessment practices, available resources and learning outcomes at all levels, not just post-secondary. This should be the responsibility of the NCGE and extend beyond quality assurance to evaluation that leads to action for improvement. Curriculum management should extend to include curriculum evaluation by specially trained evaluators who are independent of the curriculum managers.

2) In a rapidly-changing world, where skills requirements develop and sometimes disappear with the next technological development, school systems have been resistant to change for several reasons documented in this report. In the past few decades, technological advances have disrupted society and the labour market in particular, while post-secondary curricula, assessment systems and modes of teaching and learning have remained unchanged. The Task Force needs to commission a research project that brings in data from the entire education cycle, entities involved in the transit of young people out of the education system to the job market, and the

labour market itself. School systems need to keep up and be responsive to the needs of society, the workplace and the student themselves if they are to remain relevant: investment in technology infrastructure will not suffice. The Task Force should work in concert with the National Skills Council to commission research on specific sectors and areas.

3) It is vital that secondary schools and sixth form colleges, and in particular school principals and heads of colleges, buy into this process of ongoing waves of research. Regular qualitative focus groups with learners and teachers in situ provide a granular level of data which can also trigger a quick response from particular individual institutions when necessary. School principals should always be advised of the rationale for a particular research programme so they may support and facilitate the research process and logistics. There must not be any prescriptive pressure on learners.

4) The results of ongoing research need to be rapidly disseminated among stakeholders and placed online to be in the public domain. The specific areas that require immediate research will of course be subject to availability of funding. The following subject areas should be considered for further research by policy-makers:

A) Qualitative studies with students who have left compulsory education to discover the reasons and the problems that they may have faced; supplemented by quantitative studies through questionnaires to parents and students of different groups.

B) Studies to understand the gender gap in student participation. At all levels, there is a higher percentage of female students than males among those taking academic courses as well as in registration for examinations (see *Table 13* below):

Percentage of 16-year-olds registering for SEC			
	Male	Female	Total
2013 (born in 1997)	79%	87%	82.8%
2014 (born in 1998)	84.4%	91.3%	87.7%
2015 (born in 1999)	83.1%	87.8%	85.4%

Table 13: 16-year =-olds registering for SEC by gender

Source: MATSEC Examinations Board 2014, 2015

The Directorate for Lifelong Learning has been conducting telephone surveys of all the students who dropped out of further and higher education to determine the reasons. Though it is very clear from the education statistics that girls seem to achieve better academic results than boys, that in itself has become a problem. Policy-makers may be more concerned about boys lagging behind, but gender gaps alone require further investigation as the causes to determine possible corresponding action. There are also gender differences in terms of subject choice - for instance when students opt for technical qualifications at levels 4 and 5. Special attention should be given to MCAST technicians diplomas (OTD and HTD) as there still seems to exist the perception that work at this level is still the domain of males. Perhaps this applies to most hands-on technical courses and if so needs to be addressed.

C) Impact of Maltese at SEC level as compulsory subject for entry into university and other studies related to language ability differences.

D) Studies relating to 21st century skills for 16-18-year-olds, including pilot subjects and training.

E) Studies relating to pastoral care, including ethos, sense of belonging and community.

F) Studies on best practices related to blended and online learning so that these may in turn be rapidly deployed within the curriculum.

G) Teaching and Learning approaches – although some mention was made to methodology and strategies, little importance/mention was given/made by both groups regarding blended/ innovative approaches and supportive technologies.

H) Research on non-formal and informal learning good practices in industry to determine how these can in turn be evidenced, collected and adopted by learning institutions. The needs and practices of industry should also inspire teaching and learning in post-secondary VET and other training institutions as well as improve the availability and quality of internships for young people.

I) Maximising opportunities for travel exchanges within the context of Erasmus and similar projects.

J) Research on optional, accredited modules to introduce at post-secondary level that can stimulate creativity and enrichment – such as Music, Drama, Dance, Nutrition and Journalism.

Recommendation 19: Determine Government's position as an employer and contributor to the sector and secure teachers' commitment to change

Focus: Preparing for Changes to Infrastructure - Resources

Addresses: Challenge 12

It is vital that policy-makers determine if the post-secondary sector is meant to be homogeneous and independent of the secondary sector in terms of quality of teaching and learning. If it is meant to be homogeneous then there may well be issues relating to parity of conditions in teachers and lecturers employed by or funded by the state who appear to be doing similar work on inferior conditions to their peers.

The teacher focus groups highlighted a strong sense of resentment in some teachers who believe that they should enjoy similar terms and conditions to lecturers at the Junior College. Teachers in state, Church and independent sixth forms claim that they are teaching at a par with their Junior College counterparts, and preparing their students for the same goals - entry into higher education or the labour market. Teachers in sixth forms as well as Junior College teach exactly the same subjects and the same syllabi at the same MQF level – yet the discrepancy in the financial packages is significant.

Although there is a consensus within the working group that the post-secondary sector should be considered as totally different from the primary and secondary sector (representing post-compulsory education and a level of teaching at level 4 of the MQF), there is no consensus on the issue of parity within different institutions. Junior College management strongly dismisses any claims of disparity, pointing to different conditions of teachers in terms of institution, status, recruitment and working conditions. 'Disparity' also implies 'unfair treatment' or inequality.

1) Normally, the free market economy would dictate variables such as conditions of employment, and teachers are free to move around the institutions that offer the best conditions. In a free market economy, the notion that the salary for lecturers/teachers should be the same for all institutions - irrespective of means, needs and specific offers - would not be deemed to be either ethical or practical.

However, public subsidies of Church schools and the Junior College's reporting relationship to University (and hence being part of the collective agreement between University and MUT, as opposed to a stand-alone agreement) make discussions relating to the parity of conditions of teachers operating in the post-secondary sector particularly challenging.

It is beyond the scope and remit of the working group to discuss the conditions of lecturers and teachers in the sector, since this is exclusively a matter which should be taken up by employers, employees and their unions. Discussions about parity may also create uncertainty, and potential knock-on effects in all stages of the education supply chain - particularly when teachers' remuneration packages are subject to negotiations with MUT, and when MUT representatives formed part of the working group. Conversely, it would be irresponsible of the working group not to highlight a long-standing issue which either needs clarification or resolution by Government.

1) Irrespective of the above, the Task Force should work in conjunction with MEDE officials to:

A) Compute the financial impact on public funds in the event conditions for certain teachers in certain institutions were to change. This exercise needs to extend not just to payroll, but also to work resources.

B) Identify the changes to services conditions required for teachers impacted by any corrective measures.

C) Articulate the potential knock-on effects on other stages of the education supply chain. Clearly, a new collective agreement would need to be signed if any corrective measures were to be taken as a direct consequence of this exercise.

D) Re-assess the terms and conditions of work at GCHSS, potentially as a stand-alone operations review exercise. Any adjustments in remuneration packages could also be addressed in a phased manner. The presumption here is that the same pay is offered to Sixth Form teachers in Church schools.

2) As a short-term measure, and once the quantum has been quantified, administrators in sixth forms should be compensated with the same work resources offered at Junior College.

3) The majority of the recommendations in this report imply change and, more importantly, significant buy-in from teachers and the MUT to a sustained period of change in the post-secondary sector. The following are suggestions of how discussions on pay packages with teachers in specific state schools, or those supported by Government funding, could be linked to the formal commitment of teachers to support change in the education system. Policy-makers need to find a means of incentivising educators and SMTs to re-engineer their institutions, their teaching practices, and 'go the extra mile' for the benefit of learners.

A) MEDE needs to work closely with MUT so that teachers are involved at the start of any change programme, so they may also provide structured feedback throughout the stages, irrespective of the level of complexity of the programme. Different modes of feedback should be sought.

B) It is vital that a forum is set up facilitate communication and collaboration between teachers in different schools, and between teachers and learners. Many of the changes being proposed in this report need improved feedback between teacher, school and student. Improving interpersonal relationships within schools can mitigate the otherwise detrimental effect that programmes of change might have on teachers' job satisfaction and feelings of self-efficacy. School leaders should provide appropriate physical spaces within sixth forms and colleges where teachers can meet with colleagues and learners in informal settings.

C) School leaders and teachers need to embrace a culture of open and transparent engagement between teachers, school administration and students. Teachers should be empowered to play a role in decision making at the school level. Effective school leaders are those who can make evidence-informed decisions, provide the instructional leadership that teachers need to help all their students succeed in school, and create a collaborative school environment in which teachers take part in school decisions. When teachers participate in decision-making in their

schools, they report greater confidence in their own ability to teach. School leaders who provide their staff with opportunities to share in decision making tend to report greater job satisfaction. Distributed leadership is not only important to help alleviate some of the burden imposed on school leaders, but it can be beneficial to teachers as well.

4) The commitment to improve the quality of teaching has to extend beyond teacher training and CPD and skilled education administrators. More should be done to structurally promote and reward excellence in teaching:

A) Teaching and research staff may well have very different aspirations, and therefore different perceptions of what constitutes a successful and meaningful career path. School leaders need to be conscious of these differences if the right teachers are to be teaching the right courses.

B) There should be much more care taken in the appointment of teachers at post-secondary level. While academic qualifications are important, teaching, communication, engagement and empathy skills are of vital importance in selecting new applicants.

C) Sixth forms should be able to engage teachers on the basis of merit. In the case of GCHSS, teachers who are already teaching at a secondary school may apply for and be eligible for a transfer, subject to qualifications. This inevitably casts doubt about GCHSS's ability to operate as an autonomous institution.

D) In discussing changes to packages and terms and conditions of employment, policy-makers should consider the propensity of teachers to embrace a tutor/mentor system whereby each teacher is assigned a number of students to support through their post-secondary journey. The ability to provide pastoral support in addition to teaching duties should be recognised by the relevant institution.

E) Teachers, like students, should be given the opportunity to experience work-places at regular intervals in order to update their knowledge of what the ever-changing work-place requires. Mentors and tutors should visit students on work-placements and internships and provide

relevant feedback. This feedback should be part of a reform in the feedback system which should move from simple marks to a profile system which depicts students' abilities.

Recommendation 20: Change timing of MATSEC Exams

Focus: Preparing for Changes to Infrastructure - Resources

Addresses: Challenge 11

The MATSEC Board should establish an expert group to examine the implications of changes to the timing of MATSEC examinations, and resolve any entry implications with University.

1) The following solution is considered to be workable:

A) The first MATSEC examination session is moved to May-June, with results published in mid-August.

B) The second/supplementary session is moved to November-December, offering a full range of subjects for examination in this session, as in the first MATSEC session.

C) Results of the first session will be published around mid-August and those of the second session around end of January.

D) The oral and listening comprehension exams as well as the practical work in schools is conducted on a continuous, ongoing basis.

E) The University of Malta would need to be prepared to accept students on a provisional basis.

2) Those students who enter an institution on a provisional basis would only be admitted on the basis that they had achieved a number of pre-determined points. It would remain the pre-requisite of individual institutions whether to accept provisional students or otherwise. MCAST already has flexible provisions for its students, and therefore did not need to accept students on a provisional basis. Students who fail to achieve entry into level 4, start at level 3.

3) The working group believes that this system has a number of advantages:

- It would avoid discrimination.

- It would give students and schools more time to prepare for the examinations.

- Teaching and student learning time in the second and final year would be increased by about 4-5 weeks.

- The full range of subjects will be offered for examination in both sessions.

- Students who only obtain partial qualifications required for admission to university or the sixth form college will have a standing year during which they can upgrade their qualifications.

3) There are also some concerns that may need further investigation:

- Students just starting Form 5 or the second year sixth Form may be tempted to sit for the examinations in the November/ December session with undesirable consequences for schools and colleges.

- The examinations of the first session are held at a hotter time of the year than those of the second session.

- There is a risk of absenteeism during the supplementary session.

4) Once there is agreement on any changes, MATSEC would need to develop a coherent communication strategy targeting all stakeholders in civil society to explain the benefits of shifting the September session of MATSEC examinations to November-December.

Recommendation 21: Request the University of Malta and MCAST to review entry requirements for all courses

Focus: Preparing for Changes to Infrastructure - Resources

Addresses: Challenges 9 and 10

Policy makers should request that the University of Malta and MCAST review entry requirements for all courses at Level 5.

1) If 21st century skills are to underpin the new learning outcomes for the post-secondary sector, the two state higher education institutions should conduct a review of their internal entry requirements for all subjects to ensure that these are updated to acknowledge the attainment of such skills in the 'feeder' stage of post-secondary education. Critical thinking, communications and learning to learn skills should be given special attention as pilot courses. Evidence of the acquisition of these skills, and not just knowledge of the subject, should be required for entry to courses. Course planners should ensure that their course requirements put more attention on 21stcentury skills than knowledge. Course entry requirements should become more flexible to give a chance to students who have the skills and abilities to adapt to learning new knowledge. Many students have difficulty deciding on a future career when they finish post-secondary education.

2) As recommended in the case of entry to post-secondary institutions, both University and MATSEC should supplement open days with options to discuss application forms with students who have the grades for entry, but are unsure of how they can apply the skills attained at sixth form to further and higher education.

3) Post-secondary institutions should consider offering a revision course for their students who do not manage to qualify for the Matriculation Certificate in the June/July session of examinations. Currently the University does not admit provisional students. University should also consider accepting provisional students who have only one element missing in the Matriculation qualifications: students with such dispensation could be provided with conditional acceptance, subject to acceptable progress in the first year of undergraduate experience.

4) The University should consider offering a Foundation course starting in mid-February (second semester) for students who manage to qualify for the Matriculation Certificate in the November/December session of examinations.

5) Should policy-makers embrace modular assessment at post-secondary level, both University and MCAST should make the requisite changes at entry level to ensure that assessments are accredited accordingly.

6) The present system is also non-inclusive with regards to hidden disabilities such as ADHD, Autistic Spectrum disorder, and dyslexia and dyscalculia. Some students find it very difficult to achieve some particular requirement. Often these have to go abroad to foreign universities or colleges to achieve their dreams because these are much more flexible in course requirements. For example, some high-achieving autistic students still find it extremely difficult to achieve a SEC pass in Maltese. These young people are being barred from following university studies and have to wait years until they can apply under the maturity clause. This is not just resulting in undue distress, but above all a waste of talent which the country cannot afford. Solutions need to be found to accommodate these exceptional cases.

7) The University should consider following the example of several VET universities overseas who have much more flexibility in terms of course entry requirements and use other tools of assessment rather than the traditional terminal summative written assessment as entry qualifications. For instance, the University of Applied Sciences and Arts in Northwestern Switzerland accepts students without having to take an entrance examination. Oxford University puts much onus on its own Thinking Skills Examination as an alternative course requirement in the case of certain courses. So, for example, a student with dyscalculia who would like to follow a law course may take this exam instead of Maths O-level. Special entry provisions should be put in place to attract students with disabilities, after consultation with disability experts and NGOs.

Recommendation 22: Commission internal report to determine available funding regimes to re-engineer Post-Secondary Sector

Focus: Preparing for Changes to Infrastructure - Resources

Addresses: All Challenges

Policy-makers should use this report to secure incremental funding for the post-secondary sector. The majority of recommended changes to curriculum, assessment and governance and the investment in 21st century skills training will inevitably increase the strain on educational resources. The funding of pilot programmes should be a priority.

1) Government should consider prioritising innovation in its funding arrangements for the post-secondary sector. Rather than providing blanket funding to all sectors and colleges, policy-makers should work with individual principals and introduce mechanisms such as performance-based funding, and funding linked to projects with prescribed elements (e.g. innovation and excellence) and timeframes for implementation. The quantum of funds available to schools should be directly linked to agreed commitments to implementing change.

2) To be effective and systemic, funding should support programmes that facilitate changes to curriculum, assessment and governance that modernise existing systems for the net benefit of learners. The resources should be used to assist the enablers of innovation at the system level including: leadership for institutional change; learning technology tools and course design; professional development of teachers; communities of practice; the development of shareable resources; and the support of evaluation and research evidence. Funding can also facilitate collaboration within and between sixth form institutions and higher education and VET institutions.

3) Funds should be made available to accelerate the introduction of blended and online education at post-secondary stage. This investment is primarily related to the cross-training of teachers and lecturers who have to deploy new modes of teaching and learning for post-secondary studies and continuing education.

4) Funds need to made available for a system that can track individual student learning throughout his/her learning lifecycle, and relay progress to post-secondary principals and policy-makers. This would also represent an opportunity to standardise reporting processes between post-secondary institutions. Funds should also be made available for systems that can facilitate planning, application, enrolment, timetabling, progress monitoring, modular assessments, examinations and success.

Recommendation 23: Explore possibilities for increasing the number of sixth form colleges in Malta and Gozo

Focus: Preparing for Changes to Infrastructure

Addresses: Challenges 1 to 4

There is agreement that one state sixth form in Naxxar and another in Rabat Gozo are not sufficient to provide the depth and flexibility required during the post-secondary period. Policy-makers should support the establishment of new, smaller sixth form colleges in Malta and Gozo. MEDE, through its internal policy team, should determine the feasibility of a new state sixth form, and how it can also support initiatives from the private sector.

1) The Working Group discussed the possibility of secondary colleges having sixth forms on the same premises. Within this context, different colleges could then specialise in different fields, such as sciences, languages, the arts and vocational subjects. There was no consensus on this issue:

A) There appear to be advantages related to economies of scale. For instance, common management structures could be considered to ensure seamless transition for learners and teachers. The Gozo Sixth Form can be considered as a model a gradual transformation of a post-secondary institution that has close linkages with secondary education schools.

B) If the state were to propose a network of college-based sixth forms, there would need to be an assessment of the relationship between these schools, GCHSS, Junior College and the Gozo Sixth Form. There was no agreement on how this network would operate in practice; nor is there optimism that these organisations would actually cooperate as a network with new entrants.

2) MEDE should set up a working group to develop a feasibility report on a new state sixth form college. The report would consider logistics, infrastructure, pedagogy, human resources and budgets. There is a compelling argument for the establishment of a sixth form in a new location in Malta, particularly in the south of the island. This suggestion has also been made by stakeholders contributing to a revised Early School Leaving prevention strategy. MEDE has data

to suggest that more people from the north tend to go to GCHSS while more students from the south tend to go to MCAST. These two institutions were meant to attract students not on the basis of locality but on the basis of whether they want to follow an academic or a VET route. The new college could be strategically positioned between the 'large-scale preparation for university' approach adopted by Junior college and the 'secondary school mode' employed by GCHSS

3) MEDE should also consider incentives to encourage independent secondary schools to extend their offer to sixth form - for example, neither San Anton or San Andrea currently offer post-secondary education. Encouraging existing secondary schools to set up sixth forms has a number of advantages:

A) The transition from secondary to post-secondary would be considered as natural and seamless for some students.

B) More students may potentially be encouraged to further their education.

C) The formal education experience of students will be considered from 5 to 18 years rather than to 16 years, providing a longer span view for planning and the possibility to increase the percentage of students continuing with their tertiary education. Meeting ET2020 targets for reducing early school leaving rate and increasing the percentage of learners in tertiary institutions remain priorities for MEDE. Conversely, proposals to extend the operations of secondary school would need significant planning and feasibility studies, as in 2) above. There are additional quality assurance considerations for the individual institutions. Some of the 'A' level and vocational courses are more resource hungry than others. Policy-makers would also need to consider issues relating to support and geographic distribution of resources to ensure that institutions moving up the value chain can operate sustainable operations.

4) There may be opportunities for existing or new sixth form colleges - state, church or independent - to specialise in one or more aspects of academic, vocational or applied subjects. Policy-makers should consider the impact of this type of diversification on existing sixth form colleges:

A) The majority of state, Church and independent sixth forms enjoy public trust. The arrival of specialist sixth form colleges while creating diversity in the offer could also open up discussions on the funding of public and Church sixth forms and comparisons between incumbents and new entrants.

B) Existing independent schools clearly need to remain sustainable operations, providing a return to their stakeholders.

C) Existing sixth forms may need to reconsider some core operations or align themselves with other institutions if there is a wave of new specialist sixth form colleges.

5) Irrespective of any changes that may be made to the post-secondary landscape, the working group recommends that the Junior College retain its direct reporting relationship to the UM.

Recommendation 24: Identify suitable pilots that can be implemented in short-term

Focus: Preparing for Changes to Infrastructure

Addresses: All Challenges

This report recommends that policy-makers should support a series of pilots over the next 12 to 18 months that can demonstrate concrete willingness from central Government to embrace change in the sector.

1) The Task Force must focus on what can be done in the short term to improve the education offer for 16 to 18-year-olds - otherwise the recommendations of this report risk being still-born. For instance, measures aimed at reducing early school leaving are universally acknowledged to require a long-term commitment and cross-sectoral cooperation, focusing on prevention, early intervention and compensation measures. The Task Force has to identify pilots that can start to facilitate short-term change through collaborative approaches and partnerships with external stakeholders and the community where possible. Pilots also help secure public support and engage those stakeholders who can then act as multipliers for other projects.

2) As a general rule, pilots should be capable of being replicated, and scaled up. For the full impact of change to be realised, growth needs to be exponential rather than linear. Pilots should ideally introduce systems and structures that will help students acquire skills, rather than knowledge; that will help them become autonomous, critical learners able to succeed in the learning environments they find themselves.

3) There is a need to maximise opportunities to radically re-think the post-secondary institution and the classroom as the locus of the traditional learning space. In other countries, learning spaces in colleges are being redesigned to accommodate the new pedagogies and active learning models. Traditional classroom setups that position rows of seats in front of a podium are being remodelled to facilitate deeper learning experiences and interactions. The Task Force could work

with individual sixth form institutions to re-design specific learning areas and classrooms as pilots for change[44].

4) Pilots for change should extend to changes to teaching and learning regimes. These could include, but are not limited to:

A) Modular teaching and learning approaches. The experience in the VET subjects currently being taught in secondary schools (state and non-state) from year 9 (form 3) upwards needs to be considered as a pilot for modular systems - at least as understood by learners. Practical assessments are held over three years on a module basis, with assessment marks accumulated over three years leading to a final mark being set at the end of year 11 (form 5). Elements from this system could be adopted in other subjects as well, both at secondary and post-secondary level.

B) Modular assessments, including assessments without summative examinations. The challenge is for higher education and VET organisations, including the new NAA, to deem that these assessments are fit for purpose.

C) Leadership programmes for teachers. This aspect has been very high on the school improvement agenda for years, and needs particular attention within the context of post-secondary educators dealing with the complexities of the sector.

D) Flipped classroom methodologies.

E) Blended learning. Teacher abilities in developing blended learning courses and non-academic subjects should be recognised and rewarded.

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[44] Singapore's Nanyang Technological University Learning Hub is home to corner less rooms that all face a central atrium to encourage students and faculty in different disciplines to work together. The building is also designed to attract plenty of natural light to promote greater emotional well-being.

F) Informal and non-formal learning applications. There are several practical implications for post-secondary education which would need to be addressed, including how informal and non-formal learning and VET and work-based learning could possibly be completed within the two-year timeframe of sixth form.

G) Productive learning applications[45].

5) The Task Force should consider pilots for new sixth form colleges whereby learners, parents and students choose to opt out of the current post-secondary education system in favour of an experimental school set up that explores elements of 4 above. Clearly, this solution implies securing a critical mass of people and significant government support. There needs to be buy-in into the very need for alternative pathways before there can be buy-in into pilots. It goes beyond raising awareness as making it clear to those who are unhappy with current systems that alternatives will be supported – and that these will not be inferior in quality. The proposal to have a new state sixth form in the south could also be a pilot for an alternative post-secondary college, built on an opt-out regime by key stakeholders.

6) Policy-makers should use the Systems of Knowledge course as a high-profile pilot for transformation into a course with a totally modular approach, and modular assessment.

A) The course should remain an integral part of the post-secondary curriculum, but there needs to be a radical change in the way the subject is being taught and assessed. Students in the focus groups were not opposed to the Systems of Knowledge (SOK) and acknowledged that it provided an opportunity to learn outside the box of their selected subjects: the complaints focused on the formal, terminal summative assessment process applied to the SOK, like any other A-level. Students' approach to the subject are inevitably warped by a tradition of passing exams. The subject simply becomes yet another obstacle to the ultimate objective of securing the certificate, to be hurdled over as soon as possible. Inevitably, any 'joy' of learning and the curiosity drive are stifled.

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[45] See http://www.ineps.org/pdf/Productive Learning - short summary.pdf

B) Shifting the course to a composite of modular units with different modes of assessment at the end of each unit could revitalise the course. The system of assessment could range from interviews and written assignments to the delivery of a creative project.

C) Students believe that the course should be widened to cover areas such as photography, archaeology and metal work; and that it should accommodate a wide range of approaches - not only academic but hands-on modules. Components of the project should also be delivered online, with class engagement using flipped classroom approaches.

D) The reformed Systems of Knowledge component of A-Level course-work should continue to be compulsory. It should consist of a series of electives and serve as an introduction to subjects that students may later on delve into in greater detail - a 'hands-on' introduction, similar to the courses being introduced by the Centre for Liberal Arts and Sciences at the University of Malta, albeit at foundation level.

5) Pilots with industry and social partners, potentially developed in conjunction with the National Skills Council, should be encouraged. These could range from new syllabi and assessment modes to a new VET sixth form which relies in its entirety on work-based learning and apprenticeships. For instance, students could be organised in teams that are structured to reflect the contemporary workforce of a particular sector. Industry needs to be on the forefront in the setting up of such a structure, contributing in terms of resources, expertise and vision. University, MCAST and ITS together with other possible tertiary institutions also need to be stakeholders in this educational structure. The National Skills Council could facilitate new stakeholders in the system; these would in turn benefit from learners that are well prepared for the labour market and lifelong learning. Students could become privy to guest lecturers and mentors from industry.

PREPARING FOR CHANGES TO GOVERNANCE

Policy makers can change the framework conditions of formal educational settings by modifying rules, promoting new tools and reassigning the division of labour for the production of high-quality educational resources. The flexibility and adaptability suggested by many of the recommendations in this report present a challenge for existing quality assurance procedures, which assume a hierarchical structure of quality control and relatively static educational materials. Nevertheless, this report believes that new systems of regulation and quality assurance are necessary to ensure there are improvements to service provision, and bring these in line with the requirements of 21st century learners.

During the term of the working group, MEDE was involved in parallel processes to amend the Education Act for the purposes of updating compulsory education. MEDE has proposed draft bills of the Education Act which includes a new Education Regulatory Act that proposes the establishment of new structures. The objective is to better delineate between the different aspects of governance within compulsory, post-secondary, higher and further education.

The following set of recommendations (number 24 to 27) focus on the structural changes that need to take place within the governance of the sector to ensure policy-making can make an impact on the quality of teaching and learning in the short term.

The recommendations in this section focuses on the governance of general education three main domains:
1.   Service Provision
2.   Regulation
3.   National Assessment and Certification

Table 14 below broadly differentiates between these domains.

Service Provision	National Assessment and Certification	Regulation

Supporting the holistic* development of learners *by:*
• Providing the appropriate context (including psychosocial well being) and resources (physical and human) for learning;
• Developing & Delivering Accredited Learning and Assessment Programmes (LAPs) aligned with the NCF & LOF, supporting all learners in acquiring the intended learning outcomes;
• Contributing, Owning, Implementing and Adhering to Regulatory Verifications, Directions & Guidelines;
	Assessing and Certifying Learning Nationally for ALL Learners in General Education for, through and with Service Providers *by:*
	
	• Designing, leading and administering adequate, relevant, rigorous, reliable and practical National Assessments on Accredited LAPs at:
	  o End of Primary School;
	  o End of Middle School;
	  o End of Secondary School;
	  o End of Upper Secondary School;
	• Organising and administering International Assessments performed in General Education;
		Regulating General Education Nationally Across Sectors and Cycles up to MQF Level 3/4 *by:*
		
		• Establishing Standards for General Education on:
		  o Educational Institutions;
		  o Serving Professionals;
		  o The Curriculum;
		• Quality Assuring Standards in General Education:
		  o Ex-Ante QA;
		  o Ex-Post QA;
		For the various stages (Child Care, Kindergarten, Primary, Middle, Secondary, Upper Secondary) of General Education;

* Defined in the NCF as leading to the development of lifelong learners, active citizens and equipping them with employability skills;		

Table 14: Core Functions of Service Provision, Regulation and National Assessment & Certification within General Education

The recommendations will enable:

a) Separation of roles and adoption of processes coherent with the expected roles within the local educational system;

b) Rationalisation and convergence of related functions, synergising on the country's limited pool of expertise and resources;

c) Improved coordination in the day to day dealings related to the identified functions.

Recommendation 25: Set up National Commission for General Education (NCGE)

Focus: Preparing for changes to Governance

Addresses: All Challenges

As proposed in the draft bills of the Education Act, the NCGE will be established as the national designated authority responsible for the regulation of education offered to learners up to 18 years of age, while the NCFHE would remain responsible for the regulation of education offered to learners of 18 years and over, and retain its role as the national guardian of the Malta Qualifications Framework (MQF).

The extension of NCGE responsibilities to include learner opportunities for students up to 18 years of age is crucial in the context addressed by this report. The NCGE will be pivtol in establishing the expected learning experience (curriculum) for the two upper secondary years at the required MQF level 4, regulating the standards with respect to knowledge, skills and competences.

The DQSE is currently the competent authority for the regulation of compulsory education including pre-schooling years and has recently been elucidated in the law in force to be responsible for providing accreditation of programmes offered to learners within compulsory education age up to Level 3 of the Malta Qualifications Framework. Such accreditation includes where applicable, informal and non-formal activities. Performing such functions broadly implies the setting of national standards in compulsory education and quality assurance of such standards.

1) The NCGE will take over some of the functions of the existing DQSE, which will dissolve upon the constitution of the NCGE as an autonomous entity responsible for general education, embracing the regulation of all formal and non-formal education between the ages of 0 to 18, and up to MQF level 4 in Malta.

2) The NCGE is to be governed by a Board having a comprehensive stakeholder representation (to include representatives from: the National Assessment Authority (NAA - as discussed in this

report); service providers – State, Church and Independent Schools; the MUT; receiving Institutions – the University of Malta, MCAST, ITS; Parents' Associations; NCFHE; and constituted bodies representing the community (MCESD). Furthermore, the NCGE Board, the Board for the National Commission for Further and Higher Education (NCFHE) and the Board of the Authority designated for National Assessment would best be collectively governed by a Permanent Committee for Education that ensures coherence, consistency and relevance of policies and practice throughout the various governing bodies.

3) The primary function of the NCGE will be the regulation of general education in Malta for both formal and non-formal learning. *Table 15* is a snapshot of the proposed remit of the NCGE:

NCGE REMIT	
Formal Education	• Pre-compulsory Education – Child Care (0-3 years) and Kinder (3-5 years) • Compulsory Education – Primary (5-11 years) and Secondary (11-16 years) • Upper Secondary Education (16-18 years)
Non-Formal Education	• Non-formal Learning provision of accredited programmes up to MQF 3 (eventually 4) • Non-formal Learning provision of non-accredited programmes • Tuition Centres offering educational provision, beyond compulsory schooling, to learners within general education leading to certification of learning by nationally and/or internationally recognised bodies

Table 15: Proposed remit of the NCGE

At this juncture, the detail of the key functions of the newly-constituted NCGE can only be indicative. *Figure 16* provides a snapshot of the functions that are likely to be within the remit and responsibility of the NCGE.

Establish, publish and regularly review national standards for general education for the following interdependent elements:

INSTITUTIONS
- Resources required (Infrastructure & HR)

PROGRAMMES
- Formal
  - Set the National Curriculum Framework (NCF) and update as required.
  - Develop LOF emerging from the NCF, which defines the standards in terms of learning outcomes at Learning Area, Cross Curricular Theme and Subject level up to MQF level 3 (while ensuring congruence and adherence to Framework Level Descriptors established by the NCFHE as the National guardian for MQF.
  - Establish core entitlement for General Education and define flexibility that better meets individual learner needs through General and Vocational Education and General and Applied Education as from Middle School.
  - Extend NCF and LOF to cover Upper Secondary Education to MQF level 4.

INDIVIDUALS
- Define expected characteristics and/or qualifications for specific roles determining adequacy as applicable

Establish, regularly review and implement Quality Assurance (QA) mechanisms that ensure adherence to relevant legislation and national standards in general education through:

PRE-DELIVERY (EX-ANTE) QA & ACCREDITATION:
- Institutions (educational institutions offering educational experiences to learners between 0 to 18 years):
  - Formal (Local or International Schools with a provision for Boarding Schools)
    - Child Care Centre
    - Kindergarten Centre
    - Primary School
    - Secondary School (Middle / Senior Secondary School)
    - Upper Secondary School / Sixth Form
  - Non-formal
    - Accredited Non-Formal Learning Programme
    - Tuition Centre (offering non-accredited programmes or programmes accredited independently from the centre leading to a formal qualification)
- Programmes
  - Formal
    - For Schools offering a Local Curriculum: Programmes emerging from the NCF and LOF up to MQF level 3 until end of Compulsory Education and MQF 4 for Upper Secondary Education
    - For Schools offering an International Curriculum: Recognition of internationally accredited programmes
  - Non-formal:
    - Programmes having identified outcomes within NCGE set framework for non-formal learning
- Individuals
  - Formal:
    - Approving individuals prior to engagement in specific roles upon meeting expected requirements on basis of identified characteristics and qualifications
  - Non-formal:
    - Establishing and placing responsibilities on the identified applicant

PROCESS & OUTCOMES (EX-POST) QA
- Establishing Internal QA to be adopted by schools, through School Development Planning focusing on local needs in alignment with national priorities
- Cyclical and/or other forms of External Schools Reviews focusing on Educational Leadership and Management, Teaching and Learning and the School Ethos, whilst ensuring adherence to legislation, regulations and established standards

Figure 17: NCGE Primary Functions

The NCGE will de facto have a key regulatory role in the lifelong learning journey of Maltese citizens. *Table 16* is a snapshot of the overall lifelong learning landscape, and illustrates how the responsibilities for the key roles of service provision, assessment and regulation are designated in the new education framework.

	TYPICAL AGE	STAGE DESCRIPTION	INTENDED MQF LEVEL	SERVICE PROVIDER	NATIONAL ASSESSMENT	REGULATOR
LIFELONG EDUCATIONAL JOURNEY	0 - 4	• Child Care • Kindergarten	• N/A	• State (through DES & FES) • Church • Independent	• N/A	• National Commission for General Education (NCGE)
	5 - 10	• Primary School	• N/A	• State (through DES) • Church • Independent	• End of Primary National Assessment – National Assessment Authority (NAA)	• NCGE
	11 - 15	• Middle & Secondary School	• Up to MQF 3	• State (through DES) • Church • Independent	• End of Middle School National Assessment – NAA • End of Secondary National Assessment (SEC) – NAA	• NCGE
	16 - 18	• Post Secondary Educaton: Upper Secondary School	• Up to MQF 4	• State (through DES & UOM) • Church (DLS & St Aloysius) • Independent (St Edward's & St Martin's)	• End of Upper Secondary National Assessment – Matriculation Certificate (Intermediate & 'A' Levels) - NAA	• NCGE
	18 - 24	• Further Education		• State (MCAST, ITS) • Independent	• Assessment and Certification being the sole responsibility of the respective accredited and regulated Service Providers	• NCFHE
		• Higher Education	• Up to MQF 5, 6, 7, 8	• State (UOM, MCAST) • Independent		• NCFHE
	24+	• Adult Education				

Table 16: Overview of Governance in Lifelong Education in Malta

Recommendation 26: Restructure and reposition MATSEC into the designated Authority for National Assessments (NAA)

Focus: Preparing for changes to Governance

Addresses: All Challenges

Assessment is an integral part of education, informing whether or not the goals of education are being met. Depending on its intended purpose, assessment can be of, for and as learning. The Maltese formal educational system is characterised by high stakes, controlled, summative assessments (examinations) which, whilst marking a degree of success, have arguably usurped the educational process to varying degrees. There is an urgent need for policy-makers to re-think and redefine a more contemporary, yet similarly valid, reliable and practical, national assessment framework.

The MATSEC board continues to report into the Senate at the University of Malta, although the Board's constitution has over the years been widened to have a representative membership of the major stakeholders in education. The Board is responsible for the setting of syllabi and papers at SEC and MATSEC level and MATSEC examinations are predominantly meant to lead to further academic development. There are increasing opportunities for the introduction of MATSEC subjects in vocational and related areas.

1) This report reiterates proposals made in 2005 and 2010 for the MATSEC board to move from an institution reporting into the University of Malta's Senate for education at all levels to a new institution which is independent of any other institution. The proposed Education Regulatory Act, in which the NCGE is being set as the national regulator for General Education (education offered to learners from 0 to 18 years of age), provides an immediate opportunity to re-assess the direct and exclusive reporting relationship of the MATSEC Board to the UM's Senate, such as to ensure there is alignment between the NCGE and the Board.

2) A decision to sever the MATSEC Board's reporting relationship with the University of Malta is likely to create uncertainties with key education stakeholders: this may well be the reason why previous policy reports' recommendations for such a severance were never implemented.

3) The question of the governance/autonomy of MATSEC / NAA needs particular attention. Transparency in relationships is a pre-requisite for an institution whose remit should be regulatory - as opposed an authority writing the learning outcomes of subjects. Autonomy is of crucial importance if the NAA is to have credibility in the eyes of all stakeholders. There may be functions of the NAA that should not be questioned unless gross incompetence or worse is proven; there may be other functions that require an overview, say by the NCGE. Inevitably, there needs to be a discussion on the future role of MATSEC, and the timeframes for its migration into the NAA, between policy-makers and the relevant stakeholders.

4) Discussions are to commence on the division of responsibilities for assessment between the regulator and the awarding body involving all stakeholders (post-secondary institutions, receiving institutions, MATSEC and the regulator).

5) For MATSEC to transition into the NAA, there will be a need for amendments to existing legislation[46]. This legislation should establish the aims, functions, composition of the NAA on similar lines as the regulations that establish the NCGE in the Draft Education Regulatory Act. *Annex 12* presents an outline of the regulations that could form the basis of discussion involving all stakeholders. Within this context, it is important for MEDE to engage in timely discussions with the Rector of the University of Malta in order to develop a phased-in action plan in consultation with all stakeholders.

6) It is vital that the establishment of the NAA coincides with the establishment of a Government Board that ensures coherence of NCFHE and NCGE practices and ensure these are in alignment with national policies. This Supervisory Board could be called upon to particularly regulate macro situations where consensus cannot be secured between the two parties.

7) In addition to its role as an awarding body, MATSEC has tacitly evolved into an independent benchmarking system separate from the schooling system. International equivalency authorities

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[46] *Leġislazzjoni sussidjarja 327.18 statut għall-eżamijiet tal-matrikola u għaċ-ċertifikat tal-edukazzjoni sekondarja.*

have accepted the MATSEC Certification System at SEC and Matriculation levels and the standards that have been set need to be safeguarded.

7) During the period of discussions leading to the establishment of the NAA, a number of initiatives can be launched. For example:

- MATSEC together with NCGE needs to lever on the work already done for the Learning Outcomes Framework for the educational journey from pre-schooling to the end of compulsory education.
- MATSEC and the NCGE can also explore how sixth forms and educators can take a more active part in their respective students' assessment of learning, and to have a direct bearing on the certification that students will carry beyond schooling. There needs to be consideration for sixth form schools and colleges to play a greater role in the assessment process - since they are in the 'front line' of assessing the learning taking place.
- The criticisms from both the learners' and teachers' focus groups on the parity of standards between MATSEC and international examination boards need to be addressed as a priority, including criticism of the undue influence of University lecturers in the setting of syllabi. It must be noted that although University representatives chair the Advanced and Intermediate syllabus panels, there is consensus and agreement by school representatives on what should appear in the syllabus. Furthermore, the syllabus does not dictate how it should be taught in sixth form; this remains at the teachers' discretion.

The migration of the MATSEC Board into the NAA needs proper planning and seamless implementation. The Task Force should set up a sub-working group to develop a coherent transition plan with realistic timeframes to be endorsed by all stakeholders, including the Ministry. *Annex 5* provides further detail on the framework for such a transition plan.

ANNEXES

Annex 1: Working Group

The Working Group on the future of Post-Secondary education was the following:

Dr Alex Grech - Chair and Lead Report Writer

Mr Joseph Cauchi - Research & Analysis

Dr Claire Felice Pace - Secretary to the Working Group

MEMBERS

Fr. Jimmy Bartolo – Church Schools Association

Mr Kevin Bonello - MUT

Dr Charles Bonello - Faculty of Education, University of Malta

Mr Gaetano Bugeja –Department of Curriculum Management, MEDE

Dr Mario Cardona –Department of Lifelong Learning

Dr Silvio De Bono – MCAST

Mr Daniel James Cassar – Sir MA Refalo Sixth Form, Gozo

Ms Edel Cassar – NCFHE

Mr Pierre Fenech - ITS

Mr Joseph Gauci – Giovanni Curmi Higher Secondary, Naxxar

Mr Joe Gerardi - Gian Franġisk Abela Junior College

Mr Vince Maione - MCAST

Mr Ian Mifsud - DG DQSE MEDE

Ms Jacqueline Micallef Grimaud – MCESD

Ms Bernie Mizzi – Independent Schools Association

Mr Dario Pirotta - MATSEC

Prof. Frank Ventura – MATSEC

Mr Paul Xuereb – Principal, ĠanFranġisk Abela Junior College

Annex 2: Acronyms

AM	Advanced Matriculation
BTEC	Business and Technology Education Council
CVET	Continuing Vocational Education and Training
CEDEFOP	European Centre for the Development of Vocational Training
CCCL	Commonwealth Centre for Connected Learning
DQSE	Directorate for Quality and Standards in Education
EACEA	Education, Audiovisual and Culture Executive Agency
EADTU	European Association of Distance Teaching Universities
ECTS	European Credit Transfer and Accumulation System
ECVET	European Credit Transfer System for Vocational Education and Training
EQF	European Qualifications Framework
ESCO	European Skills / Competencies Qualifications and Occupations
ETC	Employment and Training Corporation
ETF	European Trading Foundation
EU	European Union
EUCIS-LLL	European Civil Society Platform on Lifelong Learning
EUPA	European Union Programmes Agency
FES	Foundation for Educational Services
CGHSS	Giovanni Curmi Higher Secondary School
HTD	Higher Technical Diploma
ICT	Information and Communication Technologies
IEP	Individual Education Diploma
IL	Intergenerational Learning
IM	Intermediate Matriculation
IVET	Initial Vocational Education and Training
JC	Junior College
LLL	Lifelong Learning
LOF	Learning Outcome Framework
MCAST	Malta College for Arts, Sciences and Technology
MCESD	Malta Council for Economic and Social Development

MGSS	Malta Government Scholarship Scheme
MOOC	Massive Open Online Course
MQRIC	Malta Qualifications Recognition Information Centre
NAA	National Assessment Authority
NCF	National Curriculum Framework
NCFHE	National Commission for Further and Higher Education
NEET	Not in Education, Employment or Training
ODL	Open and Distance Learning
OER	Open Educational Resources
OTD	Ordinary Technical Diploma
PIAAC	Programme for the International Assessment of Adult Competencies
PISA	The Programme for International Student Assessment
QA	Quality Assurance
QRIC	Qualifications Recognition Information Centre
SEC	Secondary Education Certificate
TALIS	Teacher and Learning International Survey
UM	University of Malta
VPET	Vocational Professional Education and Training
VET	Vocational Education and Training

Annex 3: Glossary of Terms

Access to education and training means the conditions, circumstances or requirements (such as and training qualifications, education level, competences or work experience) governing admittance to and participation in educational institutions or programmes.

Accreditation means a process of quality assurance through which a programme of an education or training is officially recognised and approved by or training programme the relevant legislative or professional authorities following assessment against predetermined standards.

Active learning means a process whereby students engage in activities, such as reading, writing, discussion, or problem solving that promote analysis, synthesis, and evaluation of class content.

Adult education means general or vocational education provided for adults after initial education and training for professional and/or personal purposes, and which aims to: a) provide general education for adults in topics of particular interest to them (e. g. in open universities);b) provide compensatory learning in basic skills which individuals may not have acquired earlier in their initial education or training (such as literacy, numeracy) and thus to; c) give access to qualifications not gained, for various reasons, in the initial education and training system; and d) acquire, improve or update knowledge, skills or competences in a specific field: this is continuing education and training.

Andragogy means the process of helping adults learn. As opposed to pedagogy, where the teacher is the focal point, andragogy shifts the focus from the teacher to the learner.

Apprenticeship means systematic, long-term training alternating periods at the workplace and in an educational institution or training centre. The apprentice is contractually linked to the employer and receives remuneration (wage or allowance). The employer assumes responsibility for providing the trainee with training leading to a specific occupation.

Assessment means the sum of methods and processes used to evaluate the attainments (knowledge, skills and competences) of an individual, and typically leading to certification.

Assessment of (Formal) Learning refers to strategies designed to confirm what students know, demonstrate whether or not they have met curriculum outcomes or the goals of their individualized programs, or to certify proficiency and make decisions about students' future programs or placements. Assessment of learning is designed to provide evidence of achievement to parents, other educators, the students themselves, and sometimes to outside groups (e.g., employers, other educational institutions). This assessment becomes public and results in statements or symbols about students' learning. It often contributes to pivotal decisions that will affect students' futures. It is important, then, that the underlying logic and measurement of assessment of learning be credible and defensible.

Assessment for (Formal) Learning is the process of seeking and interpreting evidence for use learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there. It also alludes to assessment as a process rather than an event, to planning for gathering information, to interpretation and reflection, to the agency of learners, and to the appropriate adjustment of future learning and teaching.

Assessment as (Formal) Learning is the process by which students are able to learn about themselves as learners and become aware of how they learn – become metacognitive (knowledge of one's own thought processes). Students reflect on their work on a regular basis, usually through self and peer assessment and decide (often with the help of the teacher, particularly in the early stages) what their next learning will be. Assessment as learning helps students to take more responsibility for their own learning and monitoring future directions.

Awarding body means an awarding body that issues qualifications (certificates or diplomas) formally recognizing the achievements of an individual, following a standard assessment procedure.

Blended learning means the environment in which learning occurs online and in person, augmenting and supporting teacher practice. This approach often allows students to have some control over time, place, path, or pace of learning. In many blended learning models, students spend some of their face-to-face time with the teacher in a large group, some face-to-face time with a teacher or tutor in a small group, and some time learning with and from peers. Blended learning often benefits from a reconfiguration of the physical learning space to facilitate learning activities, providing a variety of technology-enabled learning zones optimized for collaboration, informal learning, and individual-focused study

Competence means the proven ability to use knowledge, skills and other abilities to perform a function against a given standard in work or study situations and in professional and/or personal development. In the EQF, 'competence' is described in terms of responsibility and autonomy.

Connected Learning means a theory of learning that strives to connect and leverage all the various experiences, interests, communities and contexts in which learners participate—in and out of school—as potential learning opportunities. Connected learning represents a framework for understanding and supporting learning, as well as a theory of intervention that grows out of our analysis of today's changing social, economic, technological and cultural context. Increasingly, connected learning is associated with a model of learning that holds out the possibility of re-imagining the experience of education in the information age. It draws on the power of technology to fuse young people's interests, friendships, and academic achievement through experiences laced with hands-on production, shared purpose and open networks.

Credits mean one of the tools designed to facilitate the implementation of credit transfer systems at national and European level. They are used by authorities, education and training providers, awarding bodies and learners to support arrangements for accumulation and recognition of learning outcomes towards a qualification and for Trans-National mobility. Credits [credit points] are allocated to Qualifications and Awards to the units of which a qualification is made up. One credit (ECTS/ECVET) in Malta is considered as being equivalent to a workload of 25 hours of learning. The term workload refers to an estimation of the time an individual typically needs to complete all learning activities such as lectures, seminars, projects, practical work, work

placements and individual study required to achieve the defined learning outcomes in formal learning environments.

Curriculum means a set of actions followed when setting up a training course: it includes defining training goals, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers.

Digital competence means the ability to understand media (as most media now is digital), search for information and be critical about what is retrieved (given the omnipresence of social media); and be able to communicate effectively with others and be aware of safety and privacy issues. All these abilities belong to different disciplines: media studies, information sciences, and communication theories. An example of a digital competence framework is that being developed by the Joint Research Centre of the EU.[47]

Digital literacy means having the knowledge and ability to effectively and critically navigate, evaluate and create information using a range of digital technology tools. A digitally literate person can use technology strategically to find and evaluate information, connect and collaborate with others, produce and share original content, and use the Internet and technology tools to achieve many academic, professional, and personal goals.

European Credit Transfer and Accumulation System (ECTS) means a system developed by the European Commission in order to provide generally valid and accepted procedures for the recognition of study qualifications gained by students on courses outside their home country. It is also intended to provide more binding conditions, more flexibility and a greater degree of clarity in the organising and running of courses for foreign students. ECTS gives students the opportunity to clarify definitively with their home university how many courses or classes they should attend while they are abroad and under what conditions the qualifications they obtain will be recognized by the home university on their return.

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[47] see http://ftp.jrc.es/EURdoc/JRC83167.pdf

European Credit System for Vocational Education and Training (ECVET) means the European Commission's technical framework for transfer, validation and, where appropriate, accumulation of learning outcomes by individuals, to achieve a qualification. ECVET tools and methodology comprise a description of qualifications in units of learning outcomes with associated points, a transfer and accumulation process and complementary documents such as learning agreements, transcripts of records and ECVET users' guides. This framework aims to promote: a) mobility of people undertaking training; b) accumulation, transfer and validation of learning outcomes (either formal, non-formal or informal) acquired in different countries; c) implementation of lifelong learning; d) transparency of qualifications; e) common trust and cooperation between providers of vocational training and education in Europe. EVET is based on the description of qualifications in terms of learning outcomes (knowledge, skills and/or competencies), organised into transferable and accumulable learning units to which credit points are attached and registered in a personal transcript of learning outcomes.

European qualifications framework for lifelong learning (EQF) means the EU Reference tool for describing and comparing qualification levels in qualifications systems developed at national, international or sectoral levels. The EQF's main components are a set of eight reference levels described in terms of learning outcomes (a combination of knowledge, skills and / or competences) and mechanisms and principles for voluntary cooperation. The eight levels cover the entire span of qualifications from those recognising basic knowledge, skills and competences, to those awarded at the highest level of academic, professional and vocational education and training. EQF is a translation device for qualification systems.

Further education means all non-compulsory formal, non-formal and informal learning which serves to obtain a national qualification classified up to and including level 4 of the Malta Qualifications Framework, or a foreign qualification at a comparable level.

General Education means all formal and non-formal education offered to learners between the ages of 0 to18, hence encompassing Child Care, Kindergarten, Primary, Secondary and Upper Secondary Education.

Guidance and counselling / information, advice and guidance (IAG) means the range of activities designed to help individuals to take educational, vocational or personal decisions and to carry them out before and after they enter the labour market.

Higher education means all non-compulsory formal, non-formal and informal learning or research which serves to obtain a national qualification classified at level 5 of the Malta Qualifications Framework or higher, or a foreign qualification at a comparable level.

Informal learning means learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective. Informal learning outcomes may be validated and certified. It is also referred to as experiential or incidental/random learning.

Knowledge is the outcome of the collection and assimilation of information through learning. In the EQF, knowledge is described as being theoretical and/or factual.

Learning means the process by which an individual assimilates information, ideas and values and thus acquires knowledge, know-how, skills and/or competences. Learning occurs through personal reflection, reconstruction and social interaction. It may take place in formal, non-formal or informal settings.

Learning outcome or learning attainments means the set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal. It may also mean the statements of what a learner knows, understands and is able to do on completion of learning process, which are defined in terms of knowledge, skills and competence.

Lifelong Learning means all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. Lifelong Learning encompasses the whole spectrum of formal,

non-formal and informal learning. The objectives of learning include active citizenship, personal fulfilment and social inclusion, as well as employment related aspects. The principles which underpin Lifelong Learning and guide its effective implementation emphasise the centrality of the learner, the importance of equal opportunities and the quality and relevance of learning opportunities (European Commission 2001: 3-4).

Module means as a unit, chapter, topic, or segment of instruction. It is a standard unit or instructional section of your course that is a "self-contained" chunk of instruction. A week is a common module length, but it can be shorter or longer depending upon content and your teaching style. A module aims at developing a clearly identifiable and certifiable portion of the curriculum, expressed in terms of learning objectives.

Modular design means a design approach that subdivides a system into smaller parts called modules, that can be independently created and then used in different systems.

National qualifications system means all aspects of a Member State's activity related to the recognition of learning and other mechanisms that link education and training to the labour market and civil society. This includes the development and implementation of institutional arrangements and processes relating to quality assurance, assessment and the award of qualifications. A national qualifications system may be composed of several subsystems and may include a national qualifications framework.

National qualifications framework means an instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society.

Non-formal learning means learning which is embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support), but which contain an important learning element. Non-formal learning is intentional from the learner's point of view. It typically does not lead to certification.

Open education means a way of carrying out education, often using digital technologies. Its aim is to widen access and participation to everyone by removing barriers and making learning accessible, abundant, and customisable for all. It offers multiple ways of teaching and learning, building and sharing knowledge. It also provides a variety of access routes to formal and non-formal education, and connects the two. Open education is open to: 1) the requirements and individual needs of learners and to 2) the requirements of the labour market and society in general. This type of openness calls for changes to the content, the teaching process and the support services offered to learners. Therefore 3) Open Educational Resources become the kingpin in the change. It is the adaptability of educational materials which improves fitness for purpose and in turn encourages and facilitates changes to 4) learning support services and to 5) teaching efforts.

Open Educational Resources mean teaching, learning and research materials that make use of appropriate tools, such as open licensing, to permit their free reuse, continuous improvement and repurposing by others for educational purposes.

Personalised learning means instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner. Learning objectives, instructional approaches, and instructional content (and its sequencing) all may vary based on learner needs. In addition, learning activities are meaningful and relevant to learners, driven by their interests, and often self-initiated.

Productive learning means a way of education in or outside regular schools, where it replaces the last years of compulsory education. It may include any of the following: a) Practical orientation: 3 days a week working and learning in "real situations of everyday life" in companies or institutions, the other 2 days of the week learning in a study workshop at school; b) Vocational preparation and occupational orientation by getting to know 6 different practical places in 2 years; c) Individual Learning with weekly educational consulting by the educator, individual learning plans and tasks selected by oneself; d) General education and personality development: social competencies, competencies in methods, independence and self-confidence;

and e) New Fun in Learning: with Productive Learning the individual activity shifts in the center of the educational processes which provokes the student to (re-) recognize the sense of learning;

Prior learning means the knowledge, know-how and/or competences acquired through previously unrecognised training or experience.

Qualification means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards. It may also mean the requirements for an individual to enter, or progress within an occupation.

Qualifications Framework means a system of coordination for comparing qualifications by relating them to each other, for promoting the quality of education and training provisions, for establishing standards of knowledge, skills and wider competences and for introducing and maintaining procedures for access to learning, transfer of learning and progression in learning. The scope of a Qualifications Framework may be comprehensive of all learning achievement and pathways in a country or may be confined to a particular sector.

Quality assurance means one or more processes which safeguards the quality of compulsory, further and higher education within the economic, social and cultural context, on a national, European and international level; use of appropriate measures as a means of improving the quality of teaching, learning, training and research; and communicate the outcome of such findings within an internal and external framework of accountability.

Recognition of competences means all learning activity undertaken through life, which results in improving knowledge, know-how, skills, competences and/or qualifications for personal, social and/or professional reasons.

Recognition of learning outcomes means formal recognition is the process of granting official status to skills and competences either through the award of certificates or through the grant of equivalence, credit units, validation of gained skills and/or competences.

Skills means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the EQF, skills are described as cognitive (use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).

Social partners mean employers' associations and trade unions forming the two sides of social dialogue.

Twenty first century skills mean a broad set of knowledge, skills, work habits, and character traits that are believed — by educators, school reformers, college professors, employers, and others — to be critically important to success in today's world, particularly in education programmes, contemporary careers and workplaces. Generally speaking, 21st century skills can be applied in all academic subject areas, and in all educational, career, and civic settings throughout a student's life.

Upper Secondary Education (ISCED 3) means the final stage of Secondary Education in Malta preparing learners for qualifications up to level 4 of the Malta Qualifications Framework. Instruction at this level is often more subject-oriented than in Secondary Education (ISCED level 2). The entrance age to this level is typically 15 or 16 years, upon completion of Secondary Education. Particular routes at this level establish general and/or specific minimum entry requirements into courses. In the more traditional academic route this level is typically associated with two (2) academic years preceding University, whilst in the more vocational routes this level is more flexible blending seamlessly into Further and Higher Education

Validation (of Informal and Non-Formal Learning) means the process of assessing and recognizing a wide range of knowledge, know-how, skills and competences, which people develop throughout their lives within different environments, for example through education, work and leisure activities.

Annex 4: Further Reading

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Annex 5: Key issues for consideration on transition of MATSEC to the National Assessment Authority (NAA): Governance, Functions and Processes

These notes supplement Recommendation 26 and should provide the basis for one of the first strategic initiatives to be implemented by the Task Force.

1) The Task Force should set up a working group to oversee the reconstitution of the MATSEC Board into the National Assessment Authority (NAA) responsible for assessment for the levels identified in *Table 16*. As a guideline, the transition and rebranding should not take longer than 24 months to be implemented, from the date the working group is appointed.

2) Within this framework, MATSEC would retain its accrued identity and governance by a Board with a constitution of stakeholder representatives but widen its national assessments beyond serving the sole purpose for academic progression primarily aimed at the University of Malta. In the first phase of its transition into the NAA, the MATSEC Board would be accountable as portrayed in *Figure 17* below.

Figure 18: Suggested reporting framework for MATSEC Board

Much depends on the nature of the newly proposed structures and processes, the resources allocated for their effectiveness, the quality of the leadership in each organisation and the willingness of policy-makers to deliver change in the assessment regime. The gradual introduction of the new governance procedures, including the establishment of the National Commission for General Education (NCGE), should help secure stakeholder confidence in the

new structures and processes. The evolved regulatory body will increasingly take responsibility for the regulation of provision of courses at postsecondary level, and will progressively become the accrediting body for such courses at MQF Level 4. It is being affirmed that proposed changes should not preclude any partner, including UM, in participating as a stakeholder in the evolved institution.

3) In order for MATSEC to fulfil additional responsibilities and functions, it is proposed that it should gain an evolved organisational structure, merging MATSEC with the Education Assessment Unit (EAU), currently part of the Directorate for Quality and Standards in Education (DQSE) at MEDE. As the designated authority for national assessment, MATSEC should develop in-house expertise and establish processes that are sufficiently flexible to include recognising and supporting new modes of teaching and learning.

4) MATSEC / NAA would be responsible for the functions summarised in *Figure 19* below:

Design and develop (occasionally endorse) relevant Learning and Assessment Programmes (LAPs) emerging out of and building on the NCF and the related LOF, adopting adequately quality assured just, valid, reliable and practicable national assessment certifying all learning at MQF 1, 2, 3 and 4, seeking accreditation from the national authority designated with regulation prior to adoption.

Generally, develop and adopt a variety of ongoing and summative national assessment tools and modalities that best meet individual learner's needs whilst retaining the expected reliability. These could support the following:

- End of Primary Education National Assessment
- End of Secondary National Assessment (SEC) (Certifying learning at MQF 1, 2, and 3)
- End of Upper Secondary National Assessment (MATSEC) (Certifying learning at MQF 4)
- Any other National Assessment that may be required from time to time

Develop, maintain updated, and publish detailed regulations for information purposes and to help nurture a rigorous and reliable implementation of national assessment by all involved, including but not limited to, service providers.

Develop and lead quality assurance mechanisms as may be required to suit the different modes of assessment, which may include the adoption of appropriate Internal and/or External Verifications, so as to ensure the reliability and validity of national assessment.

Issue Certification endorsed by the national authority designated as the regulator and seek to establish recognition of such certification by receiving educational institutions and/or employers.

Identify, propose, lead and administer international assessments in education.

Collect and maintain accurate, relevant and comprehensive data, including but not limited to learners' attainment in national assessment securely.

Provide the designated authorities with data and/or access to data as provided for in Subsidiary Legislation 440.09 Processing of Personal Data (Education Sector) Regulations.

Figure 19: Primary Functions of MATSEC Board / NAA

5) From a strategic perspective, the transition from the MATSEC Board into the NAA should be a staged approach. One option is that within a short timeframe (say six months), the MATSEC Board would start responding to the NCGE for national assessments up to MQF Level 3, while for national assessments at MQF level 4, the Board would continue to respond to the UM for academic subject areas and start to respond to MCAST/ITS for vocational related subject areas. The UM, MCAST and ITS would also liaise with the NCGE to also ensure vertical coherence (smooth transition from MQF 3 to MQF 4) of programmes. This would help ensure that the objectives of the MATSEC syllabi are re-defined and widened beyond the pre-requisites of the UM.

6) From a process perspective, among its roles, the NAA will need to establish Quality Assurance regimes that ensure that the internal and external assessment of secondary and post-secondary students is carried out fairly and consistently to national standards that have been updated for 21st century learning. In the case of Internal Quality Assurance, this requires a recognised national assessment centre (typically a licensed school) that adopts a set of internal mechanisms, processes and procedures to ensure validity, reliability, practicability, equity and fairness in its operations. These are in turn established by the NAA, whose function it is to ensure standards of assessment are applied uniformly and consistently. The existence of an internal quality assurance regime for assessment purposes is meant to ensure that these principles are upheld uniformly. Assessment centres need to adhere to internal quality assurance regulations established by the NAA by:

- Identifying a senior official from amongst the Senior Leadership Team (SLT), acting on behalf of the Head of School, as the Centre's focal person.
- Ensuring that all candidates have equal and fair access to [learning and] assessment.
- Ensuring secure access to relevant documentation, including but not limited to students' work.
- Keeping members of the respective community, including learners, educators and parents/legal guardians, abreast and accurately informed of developments related to national assessment.

- Organising ongoing and summative national assessment within set parameters, as well as performing all the required internal quality assurance and supporting external quality assurance.

- Administering national assessment in adequate environments, which meet the stipulated standards.

7) In the case of External Quality Assurance, this requires mechanisms, processes and procedures to be adopted by the NAA in line with local and international expectations on validity, reliability, practicability, equity and fairness, to ensure standards of assessment are applied uniformly and consistently. The purpose of external verification is to ensure that these principles are met, also by:

- Regularly accrediting national assessment centres as meeting the established standards to perform such function, including consideration of capacity to adhere to internal quality assurance requirements.

- Giving direction on, disseminating and lending expertise as may be required on internal quality assurance standards expected from national assessment centres.

- Performing regular announced and/or unannounced checks by identified External Quality Assurance officers acting on behalf of the national authority responsible for assessment, on documentation, processes, procedures and resources (including human and physical) adopted by accredited national assessment centres.

- Externally quality assure, through accurate and thorough examination of evidence by impartial professionals operating as Quality Assurance officers answerable to the national authority responsible for assessment, internal quality assurance processes and work of learners (which may be a census as well as a sample) identified as part of the ongoing assessment contributing to the national assessment.

- Taking overall responsibility for supervision of an adequate administration of national assessment (ongoing and summative) in national assessment centres, including closely monitoring of the invigilation provision by centres during national assessment.

- Reporting on and providing feedback at the various levels (individual, institutional and national) about commendable as well as inadequate practices being adopted by national assessment centres.

8) Nevertheless, adequate quality assurance mechanisms need to be enacted to retain the level of rigour, reliability and validity required for a 21st century education framework. It is inevitable for formal education happening at this stage to have a direct impact on what is designed for the preceding years and vice versa, hence the need to ensure a coherent journey that gives due consideration to the contribution of schools and teachers.

Such process will positively influence:
- the pedagogy and teaching methodologies focussing more on authentic learning;
- the curriculum and the diversification of programmes within it towards greater relevance for individual learners;
- the modes of and procedures adopted in assessment which whilst ensuring the required validity, reliability and practicality consider the departure from the predominant model of an exclusive synoptic exam;

9) Periodically, the legislative and regulatory frameworks and practices for quality assurance and accreditation in post-secondary education (including recognition of prior learning) should be reviewed to ensure that they encourage and facilitate the provision of more flexible education formats, including courses that are blended or fully online. In this respect, NCFHE, ENQA and other relevant European networks could support the sharing of good practice in the development of criteria on the recognition of new modes of assessment, teaching and learning.

10) It is important to learn from the experience of the SSC&P (Secondary School Leaving Certificate and Profile). The correlation between the SSC&P and SEC has been recently assessed and it was ascertained that whereas there is discrepancy at MQF level 2, there is a very close correlation at MQF level 3. It may be contradictory and confusing to have two certifications for the same level. Hence it should be determined which are the strengths of the

SEC and the strengths of the SSC&P, and merge the two. This experience can be used for certification at MQF level 4.

The number of passes at SEC level obtained by 16-year-olds can serve as an indicator of proportion of youngsters who have the required qualifications to join one of the institutions, seek employment or remain NEET (Table 1 below)[48].

Year		16-yr-old cohort[49]	Registered	% registered	Did not register	% Did not register
	Total	4826	4191	86.8	635	13.2
2010	Males	2479	2067	83.4	412	16.6
	Females	2347	2124	90.5	223	9.5
	Total	4613	4095	88.8	518	11.2
2011	Males	2403	2033	84.6	370	15.4
	Females	2210	2062	93.3	148	6.7
	Total	4944	4087	82.7	857	17.3
2012	Males	2555	2051	80.3	504	19.7
	Females	2389	2036	85.2	353	14.8
	Total	4835	4002	82.8	833	17.2
2013	Males	2547	2012	79.0	535	21.0
	Females	2288	1990	87.0	298	13.0
	Total	4488	3937	87.7	551	12.3
2014	Males	2308	1947	84.4	361	15.6
	Females	2180	1990	91.3	190	8.7
	Total	4308	3670	85.2	638	14.8
2015	Males	2183	1811	83.0	372	17.0
	Females	2125	1859	87.5	266	12.5

Table 17: Number and percentage of the 16-year-old cohort who registered / did not register for any SEC Examination

Year		16-yr-old cohort	Registered	Pass (Gr 1-5)	Did not register
2010	Total	4826	4069	3029	757
	Percentage		84.3	62.8	15.7
2011	Total	4613	3954	2958	659
	Percentage		85.7	64.1	14.3
2012	Total	4944	3974	2969	970
	Percentage		80.4	60.1	19.6
2013	Total	4835	3914	2871	921
	Percentage		81.0	59.4	19.0
2014	Total	4488	3879	2891	609
	Percentage		86.4	64.4	13.6

Table 18: SEC English Language: Number and percentage of 16-year-olds who passed with grades 1 to 5

[48] All references MATSEC Board.
[49] Data relating to 16-yar-old cohort: source NSO (2016)

Year		16-yr-old cohort	Registered	Pass (Gr 1-5)	Did not register
2010	Total	4826	3817	2706	1009
	Percentage		79.1	56.1	20.9
2011	Total	4613	3770	2611	843
	Percentage		81.7	56.6	18.3
2012	Total	4944	3755	2703	1189
	Percentage		76.0	54.7	24.0
2013	Total	4835	3689	2719	1146
	Percentage		76.3	56.2	23.7
2014	Total	4488	3707	2875	781
	Percentage		82.6	64.1	17.4

Table 19: SEC Maltese: Number and percentage of 16-year-olds who passed with grades 1 to 5

Year		16-yr-old cohort	Registered	Pass (Gr 1-5)	Did not register
2010	Total	4826	3876	2719	950
			80.3	56.3	19.7
2011	Total	4613	3803	2509	810
			82.4	54.4	17.6
2012	Total	4944	3791	2597	1153
			76.7	52.5	23.3
2013	Total	4835	3723	2504	1112
			77.0	51.8	23.0
2014	Total	4488	3733	2834	755
			83.2	63.1	16.8

Table 20: SEC Mathematics: Number and percentage of 16-year-olds who passed with grades 1 to 5

Year		16-yr-old cohort	Qualified	Percentage
	Total	4826	2136	44.3
2010	Males	2479	979	39.5
	Females	2347	1157	49.3
	Total	4613	2051	44.5
2011	Males	2403	927	38.6
	Females	2210	1124	50.9
	Total	4944	2152	43.5
2012	Males	2555	947	37.1
	Females	2389	1205	50.4
	Total	4835	2077	43.0
2013	Males	2547	994	39.0
	Females	2288	1083	47.3
	Total	4488	2200	49.0
2014	Males	2308	991	42.9
	Females	2180	1209	55.5

Table 21: Number and percentage of 16-year-old cohort qualified for admission to Junior College & other sixth form colleges

	Total number	%	Post-sec prospects
All cohort	4575		
Registered for exams	3907	85.40	
Did not register	668	14.60	Work / not traceable
No passes Grade 1-5	470	10.27	GEM / work / not traceable
One pass	364	7.96	GEM / work / not traceable
Two passes	243	5.31	GCHSS / MCAST/ ITS/ Work
Three passes	230	5.03	GCHSS / MCAST/ ITS/ Work
Four passes	188	4.11	GCHSS / MCAST/ ITS/ Work
Five passes	206	4.50	GCHSS/ MCAST/ ITS/ Work
Six passes and more	2206	48.22	6th Form Colleges

Table 22: SEC Passes with grades 1 to 5 of Form 5 students in 2014-2015

Exams in June/July	Results	Outcome
	Students with full M.C. qualifications	Join university course
	Students with partial M.C. qualifications	Join Jun. Coll. Revision course[50]
	Students with the required 6 SEC passes	Join Jun. Coll. or other college
	Students with less than 6 SEC passes	Join GCHSS
Exams in Nov. / Dec.	Students with full M.C. qualifications	Join Foundation course at University[51]
	Students with partial M.C. qualifications	Stay on at Jun. Coll. Revision course/ GCHSS
	Students with the required 6 SEC passes	Stay on at GCHSS
	Students with less than 6 SEC passes	Stay on at GCHSS

Table 23: Situations following change in timing of MATSEC situations

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[50] In this case, Junior College needs to offer a revision course for their students who do not manage to qualify for the Matriculation Certificate in the June/July session of examinations. In the current scenario, the University does not admit provisional students. If this is deemed too rigid, the provisional students are accepted provided that they have only one element missing in the Matriculation qualifications and that they satisfy the special requirements of the course they wish to join.

[51] In this case, the University needs to offer a Foundation course starting in mid-February (second semester) for students who manage to qualify for the Matriculation Certificate in the November/December session of examinations.

Annex 7: Open Educational Resource Checklist

The following extract has been adapted from the Foundations of OER Strategy Development[52], and included as a checklist for policy-makers to highlight the gaps that exist in the current approaches to post-secondary education in Malta and Gozo and suggest initiatives for kickstarting sustainable approaches to OER.

TOP STRATEGIC PRIORITIES FOR OER

- Build OER content to fill gaps in key disciplines or contexts and enable productive reuse, including openly licensed ancillary materials (slides, assessment items, etc.) and openly licensed competency maps and lists of learning outcomes.
- Develop and implement open licensing policies that require public and foundation funded educational resources are openly licensed by default.
- Create and communicate effective research studies in conjunction with OER development and use.
- Grow and foster communities that support, in a grassroots manner, the development and mainstreaming of OER.
- Develop models or strategies for OER adoption, development and/or evaluation that can be replicated in other contexts.
- Build key tools that enable more effective development, management, discovery and reuse of OER.
- Broaden our focus to include the practices of educators and learners that can be achieved with a shift to open resources, for example, open pedagogy, open educational practices, open assessment, open credentials, etc.
- Better communicate the value of OER to educators, policy makers and other key constituencies.
- Scale OER in a specific sector, i.e. primary and secondary (K-12), tertiary (higher) education, workforce development, lifelong learning, etc.

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[52] see www.oerstrategy.org

OPPORTUNITIES FOR ADVANCING OER

There are three components necessary for OER adoption: 1) Users (awareness of and motivation to use OER), 2) Content (OER and tools to use them, and 3) Context (community and systemic support for sustainability).

USERS

- Increase Awareness: It is essential to raise awareness of OER as an option, both as an alternative to proprietary materials (and publishers' new lease-not-own models) and also in new markets underserved by traditional publishers. Also, there is a significant awareness opportunity within populations already using openly licensed materials without fully realising that they are using OER or that they can exercise 5R rights.

- Build Evidence Base: Improve the body of evidence showing the positive impacts of OER, focusing on contexts where OER presents an especially critical solution to a problem. This includes efficacy research that looks at key areas such as improved learning outcomes, business models, innovative reuse, improving equity, and cost savings. It also includes compelling case studies and stories that illustrate positive impacts.

- Improve Communications: Build a stronger case for OER to strengthen its branding and value proposition. Be more active in communicating by developing resources, coordinating messages, and working with other segments of the open movement. Consider the key target audiences of OER, and tailor resources to reach those audiences. Assets such as compelling human stories, infographics, and plain language resources will be key.

- Embed OER in the Teaching Profession: Take advantage of ready-made pathways for professors and teachers to become aware of and learn to effectively use OER. In the short term, this could be linking OER with professional development activities that educational systems already conduct. In the long term, this would be integrating OER into teacher training and preparatory programs.

- Engage Key Constituencies: OER adoption is not just about engaging the teachers, education institutions and policymakers who make resource decisions. Other constituencies, particularly librarians and students, can play a key role in helping to catalyse and support

these decision makers in learning about and shifting to OER. Librarians are experts at finding, curating and sharing resources. This community wasn't originally deeply engaged in OER, but has increasingly become involved. Students are also key as the beneficiaries of education, and also the largest constituency in terms of numbers. Students can also be mobilized to raise awareness and as a catalyst for action. Other key constituencies include copyright officers, accessibility services, bookstores, financial aid, instructional technology, and instructional designers.

- Empower the grassroots: Without grassroots support from educators, OER policies will never fulfil their potential. In particular, the promise of reuse cannot be met without the engagement of users with open resources.

- Coordinate Demand with Supply: Focus on building demand in areas where supply exists.

CONTENT

- Build OER That Educators Want to Adopt: To reach the mainstream, it is important to build OER that meet the needs and expectations of educators. For educators accustomed to traditional materials, this often means "turnkey" resources that are ready to use and convenient to adopt. For educators looking to expand the way they teach, this may be easily remixable, adaptable, interoperable resources that can be easily tailored and shared with students. The specifics may vary by context, but a greater focus what educators want can help OER adoption spread on a faster and wider scale. Once practitioners are using OER in a familiar form, more work can be done to support their exploration of innovative remixing and use.

- Develop Strategic Tools: While building tools alone is not enough to solve problems, there are some central challenges that can be removed through strategic, interoperable tools to support the OER lifecycle: development, curation, discoverability and 5Rs activities. The most immediate need to support adoption is tools for the effective discoverability of OER, but we also need tools that enable users to fulfil the promise of OER in terms of creation, open licensing, reusing, remixing and sharing their work with other teachers and students.

- Build Supply to Meet Demand: The OER movement has learned that the "build it and they will come" philosophy is not often successful. It is more effective to prioritize building OER in areas where educators need and are asking for well developed, curated OER. "Building

supply to meet demand" could mean something like finding 25 colleges and universities that want to adopt Nursing OER in place of expensive, proprietary textbooks and curriculum, and then building those OER with them. Given government and civil society goals for education to lead to living-wage jobs, the OER community ought to also partner with universities, colleges and schools to build OER-based academic programmes that make more people employable.

- Accessibility: The flexibility offered by the 5Rs offers significant advantages over traditional materials in making content accessible for students with disabilities. OER can be built more easily to conform to universal design for learning (UDL) principles, and existing OER can be adapted and altered to meet accessibility needs without the legal and technical limitations typically placed on traditionally published materials. This is an area where OER can naturally lead the way.

- Develop OER for Tomorrow: As OER gains momentum, there are increasing signs that traditional textbook publishers will cede areas of educational content to OER and shift to selling new types of products, such as access to learning analytics or customized learning pathway platforms. While this is a sign of progress, it is also a potential pathway to the same problems we face with traditional content today. To ensure a more open future for education, the OER community needs to build both OER and open learning pathways and analytics platforms to support the future learning needs of students and data needs of educators.

- Open Up Existing Platforms and Resources: Evangelising open can help turn existing services and resources into OER. This is a key, alternative tactic to creating new, open resources. This allows our movement to benefit from already existing resources, networks and communities, once they are openly licensed.

- Learners as Creators: Inherent in open pedagogies and open educational practices is the idea of students as creators. If harnessed effectively, engaging students in the development, improvement and assessment of content could help drive the adoption and revision of existing and the production of new OER.

CONTEXT

- International Growth: Successful OER projects tend to have a relatively small scale and have not widely spread to other institutions, regions, or countries. Using key projects as models for

scaling is a major opportunity for our movement. At the international level, it is important to build foundations of the OER movement by examining local needs and priorities, and then using and adapting best practices, advice and tools from existing projects and experiences.

- National Mainstreaming: Multiple projects prove sustainability and benefits of OER, but OER has still not entered the mainstream at a global scale. In countries with relatively developed OER activities, a key opportunity is to shift from a narrow OER community to the broad education community, by addressing broader values and needs of educators. It is crucial to develop, at national level, an integrated set of activities that combines policy work, content production and curation, and community building into a holistic model for OER growth.

- Institutionalisation: The long-term sustainability of OER depends on education institutions becoming not only the creators and users of OER, but also the support systems behind it. Efforts to embed OER in teacher training, professional development, student orientation, information literacy, tenure and promotion, and other relevant institutional processes will help build this capacity.

- Open as an Aspect of Digital in Education: The Paris Declaration describes OER as an aspect and key element of digital education. OER can be successfully introduced if merged with IT in education initiatives - and vice-versa: digital education strategies are more sound, effective and sustainable if they include OER. For example, adopting OER can free up funds for the purchase of digital devices for students.

- Government Funding: Governments are the largest potential source for funding that can bring OER to scale. In many cases, they are already spending money directly on course materials, textbooks, or on programs that create educational materials. We need strategies such as open license funding requirements (e.g., Creative Commons licenses) that will redirect some or all of that money to OER. Publicly funded educational resources should be openly licensed by default. It is also important to educate both government staff and recipients of government funds about open license requirements, how to properly mark works to receive appropriate attribution, to create and share editable files (e.g., not PDF) so the public can revise and remix, and where to submit finished OER.

- Improve Movement-Wide Coordination: Members of the movement are doing effective, impactful work, but there is a lack of coordination between segments of the movement that

may have similar or complementary aims. Increasing communication and coordination among groups within the movement can help accelerate progress through shared best practices, improve efficiency by avoiding duplication of efforts, and amplify impact by identifying areas of synergy and common messages. This could take the shape of a lateral network that connects various nodes; not a top-down or time-intensive requirement. The goal is not to stop people from doing good work, but rather to ensure that the work being done is amplified and built upon for better service to the movement as a whole.

- Connect with Other Open Movements: Movements for openness in research publishing, science, data, software, and other areas are pursuing similar goals and are facing similar challenges. While some areas of OER are beginning to forge ties, a more deliberate effort to coordinate messages and actions will help build a stronger and broader open movement that benefits us all.

EXTENT OF OER ADOPTION NECESSARY TO CONSIDER INITIATIVES A "SUCCESS"

- Disrupting the educational materials and services market so that it flips to OER as the default model for resource production.
- Shifting public funding models to pay for publishing, distribution and adoption services, rather than paying for individual copies of textbooks.
- Sufficient quantity of high quality, curated OER necessary to provide users choice.
- Mainstreaming OER among educators so it competes with the traditional publishing model in terms of reach and use.
- Entire degree programs replace commercial textbooks with OER.
- Significant number of education and training systems built with curriculum based on OER.
- New pedagogical approaches enabled by the 5R permissions of OER demonstrate superior learning outcomes and become popular among faculty.
- Measurable increase in learning achievement that leads to employability.

Annex 8: Questions used during Focus Groups

1. Do you feel that your secondary school experience has prepared you for post-16 educations? If yes, in what way? If not, in what way?

2. Do you think that Sec. Assessment system was important for your success at post-sixteen level? In what way did it succeed or not succeed? What improvements would you make to it?

3. Do you think that your Sec. examinations have been a useful indicator to you regarding success at A-level? (For example, if you were very good at Mathematics at Secondary school, or got a good grade at Sec, are you finding Mathematics at A-level at the level you expected?)

4. How do you compare your time in post-secondary with that at secondary level?

4.1 Do you need more preparation to keep up with the subject?

4.2 Have you found the teaching methods at post-secondary difficult to adjust to after your secondary school experience?

4.3 Do you think that there is enough teacher-student interaction at post-sixteen level?

5. Is there a particular reason why you selected this particular institution?

6. Had you considered other alternative pathways (academic, vocational, technical) before you embarked on this journey?

7. How useful, if at all, was the guidance and counselling that you received at secondary level with respect to post-secondary education?

7. On the whole, are you satisfied with the educational provision that you are receiving?

7.1 The level of your teachers?

7.2 The way the school is administered?

7.3 The school physical environment?

8. What other aspects are you satisfied with?

9. If not, what aspects are you not satisfied with?

10. Apart from the content of the different subjects that you are following, do you feel that you are being prepared with the skills that you will need in your future career?

11. How are certain skills, such as critical thinking, problem solving and reasoning, being addressed during teaching?

12. Are you satisfied with the current system of assessment? Should we move away from the system of 3 hour written examinations at the end of two years? What are your suggestions?

13. Should we move towards a modular system, which would make the system more flexible but imply continuous assessment?

14. Is there anything that you would like to add?

Annex 9: Summary of Learner Focus Groups

The following is a summary of the key issues discussed during focus groups held with students in March and April 2016 at: at the University of Malta (first year students), Malta College for Arts Sciences and Technology (MCAST), Junior College (JC), St Martin's College Sixth Form, St Aloysius College, Giovanni Curmi Higher Secondary School (GCHSS) and Sir Mikelanġ Refalo Sixth Form.

On average, there were 6 to 10 students in each student focus group. The same set of questions (*see Annex 7*) were used to trigger an open discussion with students as with teachers, animated by one or two members of the Working Group. In the case of MCAST, three separate focus groups were held. All sessions were recorded and transcribed. This summary is an analysis of these individual session transcripts.

1.   Secondary School Experience and Post-Secondary

When asked about their Secondary School experience as a preparation for post-Secondary education, all students stated that they did not feel they had been adequately prepared for what they had to manage in terms of content, skills and attitudes.

1.1   Many students said that they had been spoon-fed at secondary school, with learners expected to 'consume whatever was served on the syllabus plate, and regurgitate the same material' at the norm-referenced examinations at the end of five years. What was important was to replicate / write down in the final pencil and paper test what one remembered of the information that had been passed on in the class. There was consequently little effort to assimilate but merely to accommodate knowledge - and that only in so far as passing the examination was concerned. One could pass the exam if one had the attributes to remember 'facts' on the day and the skill to write it all down on paper and forget these forever as soon as the examination was over. Students attributed this to the whole system of summative examinations where one's potential future career depended on written performance and where such factors such as luck in sampling items, mood and ability to handle stress and tension contributed more to 'success' than any actual ability or acquisition of 'knowledge'.

Some students reported that their learning had been so superficial that even though they had passed an examination in a particular topic, they had found it difficult to recall any knowledge by the time they attended post-secondary three months later. If they were fortunate, the teacher had to go back to fundamentals, before they could proceed with the course work. For example, they may have remembered the formulae but not necessarily applied these at A-level since they had never actually understood the concept.

1.2   Almost all students reported that their secondary school learning had depended on the luck of having a good teacher whose own enthusiasm for the subject and skill in imparting this made up for the shortfalls of the system. These teachers managed to engage the learners and hence encouraged inquiry, curiosity and discovery learning with the consequent acquisition of knowledge. The intellectual and emotional excitement of engagement was perceived as the key factor in learning. This perception continued on to the post-secondary experience. Such perceptions were to be found all across the board, a clear indicator of the key role the teacher still plays in the learning process. The selection and training of good teachers is of vital importance to the educational system.

1.3   Participants said they had no idea of what to expect from postsecondary education at the start of their postsecondary learning journey, attributing this to shortfalls in secondary school preparation in terms of content and skills required at Level 4. Content at A-level was very different and much more difficult than at SEC level. Maths and Physics were singled out as examples of the "total" discrepancy between these levels with students saying that it felt as if they had started a new subject and of being plunged at the deep end. Subjects chosen on the basis of the student's performance at SEC often turned out to be the wrong choices for A-levels. Students felt this may well be one of the main causes for dropout rates at post-secondary.

1.4   Students also claimed that they had not been prepared for post-secondary in terms of the skills required. Success at SEC had meant recall of information and no questions asked because everything outside the strict boundaries of the subject syllabus was out of bounds. Questions were not encouraged, except by the rare "good" teacher who managed to engage them. Even

these, very often, could not follow through the ideas they had engendered in their pupils because of syllabus constraints, making many students question the value of having so many examinable subjects, often 11 or 12, which narrowed the chances of real engagement. Any potential to nurture curiosity through learning would have been drained out of young people a long time before they got to postsecondary, tending to generate instrumental rather than integrative types of motivation. Students attribute this to a culture where nothing matters more than passing the exam. If one rejects this imperative or does not have the support required, especially from the home, one can expect "failure".

1.5   Students said they had not been trained in the core 21st Century skills of communications, critical thinking, reasoning, etc. These learning-to-learn skills or lack of them, meant that when students moved from a "spoon-feeding" secondary school situation to one where autonomous learning was not only encouraged but expected, students often found themselves in a quandary regarding what was expected of them: it was inevitable that some gave up. Many students reported that they have never been provided with any study skills training at Secondary schools – it should not be a surprise that the lack of acquisition of these skills made success at Level 4 difficult.

1.6.   It is clear that the most important 'learning to learn' skill in the Maltese context is English. Some students thought it unfair that they were expected to learn subjects and be assessed in English, thinking that it gave some students an unfair advantage. Some resented foreign students in their classrooms because the teacher had to use English because of them, and advocated language of instruction streaming. This path makes higher levels of education virtually unattainable. At the other end of the spectrum, English-speaking students are thinking exactly the same thing about Maltese, failing to see why they should be expected to have high levels of a language which they do not speak at home, and which is not the primary language of instruction in either compulsory, post-secondary or higher education.

The Language question still has to be resolved in our schools and as an entry point into University, where some very capable students who arguably may not consider Maltese to be their

mother tongue are effectively barred from entry into University because of a lack of a SEC in Maltese, and have to pursue alternative routes.

1.7   Guidance and Counselling at secondary school was generally reported as very ineffective. Guidance had meant simply being informed of the subjects required to attend a particular university course, with little or nothing as to the skills and attitudes required in the different career options open to them. All participants said that more experience of the course and workplace was needed before one could make an informed choice. Some students reported that the last time any representative of a post-secondary school had talked to them had been at form three / early form four: even at this stage, guidance and counselling was regarded as a distraction from the real business of absorbing the temporal knowledge needed for the examination. In the few cases where students had been given the opportunity of visiting workplaces or been offered short work places, the results were perceived by participants as having been very positive reinforcing or negating preconceptions. It should be stressed that the need for greater hands-on approaches was a consistent view - from university students to St. Martins, GCHSS and MCAST itself.

2.   Modes of assessment

2.1.   There was widespread dissatisfaction with the terminal, summative, pen-and-paper modes of assessment at SEC level, with doubts being cast on their validity and reliability. Dissatisfaction with such modes of assessment was carried over into most of the Post-Secondary sector with the exception of MCAST, which had used and developed a continuous assessment policy since its inception. MCAST students approved of the system of time-constrained tests, school Assignments and home assignments as a system. It is clear that this system allows for the flexibility required as well as providing avenues of continuous feedback which are essential to learning.

2.2   It is an axiom of adult learning that feedback should be personal and immediate. It is clear that the present systems of compulsory and post-secondary education rarely allow for feedback to the student but assign the individual to a scale. Thus, one of the most fundamental principles of learning and teaching is consistently ignored in terms of formal feedback. Some

schools, such as GCHSS, provide three-monthly feedback on some subjects, with marks based on a combination of classwork, tutorial marks and time constrained tests.

There is a need for and appreciation of regular feedback. The frequency or form of feedback is inevitably linked to the size and teaching culture of the particular institution. GCHSS students report that they have frequent and formal feedback, but note that this comes as a price: each formal assessment session, which takes the form of tests, means that valuable lesson time is lost with more time being taken up by correction and examination time. The JC prospectus includes information on the feedback process. At JC, students are officially assessed five times during the course and have to sit for an end of year test after the first year.

2.3   Modular system and modes of assessment

Modular systems are increasingly associated with the development of 21st Century skills, as integrative modes of assessment which develop and test these skills. Thus, presentations, case studies, interviews, team communications etc. can be integrated into the courses. When asked what they thought of a staged, modular system based on credits as opposed to summative assessments, participants were almost unanimous in their support, perceiving this as an equitable solution for the majority of the problems of the present summative examination system. Those who had doubts said they were unsure of having to study throughout the course as opposed to a spurt at the end of the year. There were also some concerns about the problems associated with sampling and to some extent, validity of results.

2.4   Hands-on approach

The lack of preparation of the present system for 'the real world' was a constant theme in all focus groups. University students, for example, were concerned about a lack of a 'hands-on' approach, and that what they were learning in theory was very different from what was expected of them in practice – presumably in the world of employment. Students at post-secondary who had done summer work also mentioned that there is a noticeable gap between theory and practice: students at MCAST insisted on more hands-on experiences. There is clearly a need for institutions to determine how this need can be addressed in the various subjects.

3. School Systems

At face value, the institutional offer provides a number of options for young people to pursue post-secondary studies, irrespective of their preferences and orientations. The obvious difference is the numbers of the JC and GCHSS student cohorts as opposed to the much smaller Church or fee-paying, independent schools. Each school has its own ethos and dynamics depending on size, ownership, ideology and orientation. There are also differences in the entry requirements of schools. JC will only accept as students those that are 'fully qualified' (i.e. do not need to re-sit any SEC examination). There is a caveat in that students are also allowed to apply provisionally to join JC if they have 'resits' in September. Church and independent schools require a prescribed number of SEC passes at set grades. JC, the largest institution of its kind, requires higher qualifications than those requested by GCHSS. Students entering need six SEC passes to attend JC, and five to attend GCHSS – in the case of GCHSS, students follow the matriculation course (which is the equivalent of what students at JC follow). VET institutions such as MCAST also set different criteria for the number of SECs a student is expected to possess on entry into the system.

Students report a radically different reality between secondary school and sixth form colleges that 'either makes you or breaks you'. Some post-secondary schools are close to the secondary school mode of teaching, with both its advantages and disadvantages, while others are more oriented towards the lecture method with its more impersonal mode, which is attractive to some but not to others. The most extreme case is JC, which has a large student cohort and, for some subjects, lecture-style environments with a large number of students per lecture. JC also has a very vibrant student life that potentially makes it easier for students to integrate into university life later on. There are a number of fully-qualified students who opt for GCHSS as opposed to JC or a church or independent school, despite the fact that GCHSS originated as a second-chance oriented institution. Students from Gozo have very different concerns from those of their Maltese counterparts. Some students were very appreciative of the 'spirit' and ethos of the school which they felt had impacted their lives and world views

As part of the Directorate for Educational Services within the Ministry for Education and Employment, GCHSS is run much like a secondary school with relatively small classes and

students report a greater interaction with the teachers. Especially relevant here is the evidence from former JC students who moved to GCHSS, who report they felt lost and could not cope with the system. Conversely, student life at GCHSS is not deemed to be as vibrant as that at JC: some students consider the culture at GCHSS to be 'too protective'.

Other schools, such as St. Aloysius and De La Salle, are small in comparison, and so have all the advantages of size, including more opportunities for personal engagement between students and teachers. St Aloysius only accepts students with high marks at SEC, and so already 'proven' academically in terms of what examinations require. These Church schools also accept a number of students who have learning difficulties/disabilities as well as social/medical cases. Non-church schools such as St. Martin's also have the advantages and disadvantages of size. Unfortunately, St. Edward's was the only post-sixteen academic institution not represented in the sample.

All colleges give importance to extra-curricular events: St Aloysius has an annual soiree; De La Salle hosts international nights; JC offers a number of co-curricular activities that include a soiree, an orchestra and an international theatre festival, and has active student organisations.

4. Depth versus Breath

The British system of 3 A-levels for entry into University is often criticised that it is too deep and not wide enough. The IB system is often accused of being too wide and not deep enough. In Malta, where we have adopted an IB model, students sit for 3 intermediate examinations, 2 Advanced levels and SOK. Originally the Intermediate was supposed to consist of a third of an A-level, but it is almost universally acknowledged that in most cases, the syllabus is far deeper than that, with some syllabi including most of the topics of A-level but at a slightly lower depth. This means that compared to other countries, the MATSEC system is often perceived as much more 'difficult' than other systems. While this is not necessarily wrong, it does mean that the chances of individual students achieving their required standard at first go is probably less than in other European countries. However, although this is a common perception among students, it probably needs further study.

4. Systems of Knowledge

Initial reactions of focus group participants to the notion of Systems of Knowledge was universally negative. However, on closer examination it became clear that what students objected to was not the subject itself, most of whom appreciated the advantages offered, but the subject being treated as just another summative terminal examination. Many expressed the opinion that this took all the fun out of the subject as they had to treat it as just another hurdle to jump rather than a subject which can be advantageous in achieving a more holistic education.

5. Relations between students, teachers and institutions

Teacher engagement with subject and students seems to be crucial for successful teaching and learning. This makes the selection process of the teacher at this level very important, as teachers themselves may be more effective learning supporters at one level rather than another. Participants did not go deeply in what could be done but simply repeated again and again how important the relationship between student and teacher is. Some mentioned that the same relationship was important with regard to the administration of the institution itself, some saying that they had never seen the head of the institution, while others were pleased to report that he / she knew their names and history.

It is clear that the institution itself should become involved in building these relationships by setting up systems which will support the individual student not only in academic but also in personal terms. We need a system of mentoring which will really work and provide the security to individual students passing through probably the most difficult emotional periods of their life. The institution should provide each student with a person who takes an interest in him / her, and is willing and able to help him cope with the intellectual, social and emotional demands of the student. In other words, a student at this age needs not just a lecturer but a teacher and mentor who will help him / her holistically. More serious problems which cannot be handled by the teacher/mentor should be addressed by specialised counsellors who already can be found in most institutions. The employment of youth workers, currently in practice at Junior College, can provide a different form of support. It is also clear that some institutions are too big and the setting up of new smaller Sixth forms in the South especially should be considered.

6. Physical and Social environment

On the whole students were pleased with their physical and social environments though it was clear that some found problems in the latter sphere.

There were complaints by some students that the time-table provision was not very convenient with sometimes lessons being clustered too much and sometime not at all. For example, one could have 5 one-hour lessons in one day and the first and last only on another. Scheduling was somewhat easier in GCHSS since students can, to some extent, choose which lessons they can attend from a list of those available until each class is filled. However, students admitted that what often took priority was being in the same group as their friends. Again, the modular system in conjunction with computerised time-tabling can help resolve some of these issues.

7. Informal and non-formal learning

The importance of informal and non-formal learning was clearly appreciated by the students and school events and organisations are deeply appreciated. It is clear, however, that such powerful forms of learning need somehow to be integrated into the assessment system with participation being included within a profile reporting system rather than the examination result. A credit based system should be investigated.

8. Critical thinking and reasoning

Several participants were aware of the problems of critical thinking and reasoning in the present system and suggested ways of dealing with it, including more discussions in class etc., but were also aware of the very full syllabus which does not really cater for the development of these skills. The syllabus needs to be revamped to integrate development of these skills at every stage of the teaching and learning process.

Annex 10: Summary of Teacher Focus Groups

The following is a summary of the key issues discussed during focus groups held with teachers at Junior College (JC), Malta College for Arts Sciences and Technology (MCAST), St Martin's College Sixth Form, St Aloysius College, De La Salle College and Giovanni Curmi Higher Secondary School (GCHSS) in March and April 2016.

Methodology

The same set of questions (*see Annex 7*) were used to trigger an open discussion with students as with teachers, animated by one or two members of the Working Group.

Poorly-prepared students

This was a major concern for teachers in all focus groups. Particularly worrying were the low levels of English competence of students, causing problems of comprehension and acquisition of knowledge. This appears to be irrespective of whether or not learners had secured a SEC in English. Teachers are concerned about the poor study skills of students, and the general inability of young people to take responsibility for their learning: this is associated with a regime of 'spoon-feeding in Secondary school'. Many learners are unable to differentiate between what is important from what is not, as exemplified in rigorous note-taking in class, irrespective of the content being discussed. Students are not being prepared for research skills, but for 'cut and paste' practices. Even looking up terms used in the subject can become a problematic activity.

A teacher questioned whether there is actually a need for a teacher within the current system, since by inference, his role could be better served by a set of notes: discussion or criticism in a class are perceived to be a waste of both teacher and learner time. The secondary school system is not preparing students to even start the 'learning-to-learn' process. Neither are secondary school teachers to blame for this, since they would be worried over covering the whole syllabus to make sure their students are able to face the SEC examinations. It is not possible to amend bits and pieces to make amends - there is a need for an overhaul of the assessment and certification process at age 16. Students are conditioned into a set of attitudes and expectations which go against the whole notion of post-sixteen education. Many students are not equipped

with or even willing to learn the new set of skills required at this level. At the post-secondary stage students are still in the process of becoming independent learners. This implies that teachers/tutors at this level should not simply concentrate on teaching the subject content but also on guiding students on learning to learn. This is a crucial skill for their next stage of education, career or employment.

Some teachers expressed the view that it is not students' fault and that it was useless to demonise them: the onus was on the system and teachers to find solutions. Some pointed out the difference between the lecture and teaching mode and that it was 'cruel' to expect students to make the jump without real preparation. Furthermore, there are opposing arguments insisting that lecturing should have a greater element of teaching. At the post-secondary stage students are still in the process of becoming independent learners. This implies that teachers/tutors at this level should not simply concentrate on teaching the subject content but also on guiding students on learning to learn. This is a crucial skill for their next stage of education, career or employment

Students are sitting for too many subjects at one go

Although only six subjects are required for study, student's obsession with sitting and passing exams means that they do not have time to really go into any great level of detail and acquire and internalise the required knowledge. This 'system' seems obsessed with adding more and more subjects and insisting that all subjects are examined in the same manner to emphasise that they all have the same status. The system also leads to low expectations as students are content with securing a low grade as long as they pass. Again, the summative examination system was blamed by all teacher groups as the primary cause of many of the problems. It was not the number of subjects studied but the fact that students were expected to pass summative examinations in each. Few students dared sit for fewer subjects than those offered by the school 'just in case'. Many students compete for places in 'elite' post-secondary schools / colleges by sitting for many subject to gather as many points as possible. Some of these students stress themselves because of pressure from peers and parents.

Another problem teachers face is that many students sit for some of their intermediate examinations in the first year "to try and get them out of the way" and so concentrate on their A-

levels in the second year. This reinforces the 'examination-first' mode of learning with low expectations for achieving excellence in learning. It also reflects a mentality that reinforces the idea that what's most important is not learning but achieving certificates.

Present Examination System

Virtually all teachers in every teacher group expressed concern at the negative impact of the terminal, summative examination system (mostly pen and paper) on the whole post-secondary experience. Teachers are unhappy that post-secondary is dominated by so much emphasis on examinations, with the end result being what one teacher called "a hatred of the acquisition of knowledge."

"By the time students arrive at college, they are so passive that they only take interest in things which are clearly meant for the exam. They are so used to regurgitating knowledge...that they have lost the joy of learning."

There is little participation in subject-oriented activities such as visits to the work-place. Society itself does not appear to be as interested in the acquisition of knowledge or competencies as the acquisition of certification. These attitudes themselves had a negative effect on teacher motivation. Summative examinations are also unfair as students who have studied hard in first year are expected to remember everything they had done during the summative examination. Summative examinations tended to assess memory rather than critical analyses of the topic. When summative exams do attempt to assess critical analysis, students and teachers complain that they are too difficult. When exam questions ask students to apply their knowledge in unfamiliar situations, one immediately gets complaints from students and teachers that the questions are out of syllabus. However, an MCAST teacher pointed out that continuous assessment was also found difficult by some students as they were not used to working continuously or lacked the commitment. Nonetheless, formative assessment remains to only way forward. This has to be coupled with the elimination of doubling final examinations at form five (the EAU/school based final or mock exam and the SEC exams).

Subject overload issues

Overload is synonymous within some subjects and also with the system itself. Not all students can manage the 2 +3+1 system within two years. Width may be desirable but not if it is to be compartmentalised and examined. Not every learner is the same and some clearly need more time to absorb the material. There is a need for a system which is flexible enough not to punish, reject and alienate those who need more time to reach the required levels; but which would also allow the better students to achieve full certification within two years. Some practical skills in some subjects, for example psychology, simply cannot be assessed in a written summative examination, and yet are subjected to the same exam regime. Students remain less committed to these subjects as they ultimately do not form part of the examination which determines their futures. The syllabi are written by teams of post-secondary school teachers along with one or two university staff. It is up to them to include practical work / project work if they feel it is essential for learning the subject. Of course, one also has to think how the practical component is to be assessed fairly.

Some teachers feel frustrated that students ignore tasks set out by the teaching institution as part of its assessment when they realise that the latter does not contribute to the final result. For example, language teachers mentioned that when students were asked to read books or even watch films in a particular language as part of school assessment, these tasks were ignored as a waste of time since they did not contribute to a mark in an exam. Clearly, when an entire education regime has been built on practicing for formative, summative assessments, this is not surprising.

Present Matriculation system

The 2+3+1 system was negatively compared with the old 3 A-level system: nobody believes that the 3 intermediates are tantamount to just one-third of an A-Level each, as first envisaged when the system was set up. There is unnecessary content overload in some intermediates – yet many students opt to sit for intermediates after barely one year of sixth form and secure a pass. Some teachers were under the impression that the IBE system, on which the Maltese system was designed, sets levels for the equivalent of Intermediates as O-Level. Some expressed concern at the fact that many students are sitting for intermediate examinations at the end of the first year

and that for many, low grades were acceptable as long as this allowed them to concentrate on A-levels in second year. This "beating the system" was very problematic as many students who had passed their intermediates either did not attend second year lessons, or worse, attended because of the stipend or school regulations but were not attentive and sometimes, even distractive or disruptive.

Some teachers were critical of the one-size-fits-all pattern of the MATSEC system and opined that schools should be trusted to certify students themselves, subject to standards being regulated by an entity trusted by the Ministry for Education. These teachers believe that schools are better able to assess knowledge, skills and abilities than MATSEC[19]. The Learning Outcomes Framework (LOF) only extended to Form Five and clearly needed to be implemented for the post sixteen level. However, a lecturer at MCAST insisted that LOFs and a modular system were not enough if the overall institutional structure was rigid and inflexible. The LOF needed to be developed at the Needs Analysis level with the teachers involved as they were the ones who knew what the students really needed. It was agreed that a culture change was necessary before any of these operational changes could be achieved: teachers themselves would need to be re-trained and incremental resources allocated to the sector.

Systems of Knowledge

Teachers realised and approved of the broadening effect of Systems of Knowledge (SOK) but were critical with regard to the way it was assessed as it led to the examination syndrome. Many teachers want a much broader set of electives, but there needs to be some way of ensuring consistency between and within schools. Teachers believe it is possible to have SOK as an integral part of the informal learning system and which would not be assessed in the summative mode, as this simply added to the pressure and took out the pleasure of learning. Some teachers commented that Informal and non-formal learning are widely used interchangeably, and that there needs to be a common definition.

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[19] The MATSEC board is in disagreement on this point.

Modular system

Most participants mentioned the desirability of a modular system since the present system rewards the students' ability to pass examinations as opposed to the acquisition of skills. There is a need for clarity on what is meant by a modular system in the post-secondary system, but in general it was deemed to be a system that did not assess learners in a summative, one-off examination that primarily assessed retention of content as 'knowledge acquisition'. There was agreement that the modular system would solve or at least address some of the critical problems identified above.

System of Assessment

The present educational system, right up to MATSEC level, emphasised stepped summative examinations with little attention given to what occurred in-between, and little collegiality between the levels. Students attending post-secondary systems were often "shell-shocked" by the difference in what was expected of them and the levels of commitment required. What was needed was a modular system which was flexible enough to permit students to undertake their course over a longer period than the current two years. This would allow the possibility of other forms of in-school assessment although some teachers raised doubts that students and parents would accept a course longer than the current two years. A science teacher said that in her subject, students were expected to sit for practicals; however not only were these done towards the end of the course but were worth only 3 per cent out of the total mark. A lecturer whose subject required projects as part of the final mark said that often they could not be sure if the work had been done by the student. Other teachers opined that this risk would be easily eliminated if the student were to be subject to other forms of assessment such as presentations, practicals, experience at work etc. MATSEC had to 'trust' lecturers for this to happen – but it was very doable, and could also be conducted within a prescribed / reliable Quality Assurance regime. While the transition from Primary to Middle school, and lately from Middle school to Senior Secondary has been made easier and smoother, we still need to do much more about the transition from secondary to post-secondary. There are lots of casualties during the first year of post-sec in different institutions.

Early choice of subjects

Teachers were concerned at the fact that many students chose subjects for Intermediate and A-Level without any real idea of what was involved. They suggested five or six intermediates in first year and then a continuation of A-Level specialisation in the second year so that students could "taste" the subject before final decisions which were often taken at too late a stage in the post-secondary journey. The downside of this proposal is that there is not enough time in the second 'year' (actually about 20 weeks) to upgrade an Intermediate to A-level standard.

Drop-Out rate

This was attributed to the lack of competences which students brought with them to the sixth-form experience and consequent difficulties in coping with the work load. Many of those who give up are daunted by what is expected of them by the system. The lack of competencies regarding reading were highlighted by the language teachers: students read very little as they do not enjoy books. Another reason for the high dropout rate is high levels of stress experienced by some students.

Teachers at GCHS were particularly vocal in opining that students were not getting the level of guidance they required at Secondary school, with students not lacking basic information on what their choices involved. The difference in level between SEC and A-Level were very daunting in some subjects and led to low self-esteem.

A and B papers at SEC

Research shows that more students opt for Paper A when it would have been better for them to opt for Paper B. Much fewer students opt for Paper B when they could have obtained a better grade by sitting for Paper A. In fact, in practically all subjects the majority of candidates sit for Paper A; Maths is an exception.

There was general agreement that students who had achieved only a grade 5 found the intermediate level, let alone the A-Level, difficult to manage. Moreover, many students opted for Paper B because all they wanted was to pass although they might have achieved better grades if they had opted for Paper A. Students often chose paper B because they thought that they had a

lighter study load. But to be told to sit for paper B was not very motivating in itself. Some teachers suggested only allowing students with a very good grade to sit for A-Levels; others disagreed, pointing to many instances where some students blossomed in Sixth form despite their grade. Others observed that in the case of certain subjects, students were allowed to sit for A-Levels without having any SEC qualification at all and succeeded regardless, if they were motivated enough. A formative assessment system should eliminate the need for a paper A/paper B summative system.

Part time work and private lessons

Some students may drop out because of socio-economic reasons, including poverty – for these students, the stipend is simply not enough of an incentive to stay in the system. To note that an extension of the post-secondary course by another year as proposed earlier would exacerbate the situation of these students. Others did part-time work to afford the commodities and creature comforts which their culture regard as essential. Students who attend private lessons often do not fully participate and are often disruptive.

Recognition of non-academic accomplishments

Participants observed that some 'non-academic activities' were not being deemed worthy of certification by MATSEC, despite being recognised in the Junior College certificate. This may well be due to the fact that the JC certificate is not necessarily deemed to be very valuable to students – a situation similar to the school- leaving certificate at the end of form 5 (though one has to point out that for courses in the MCAST Foundation Programme, this form 5 SLC is a prerequisite

21st Century skills

The promotion of a 'learning to learn' attitude should be an essential component of the pedagogical skill of all post-secondary teachers. Generally, 21st Century Skills need to permeate the teaching of all subjects. The level of soft skills, which employers are increasingly identifying as vital for young people's entry in the labour market, are perceived to have actually regressed in recent years. The post-secondary system and its curriculum did not allow time for teachers to address 21st century skills, including problem solving, team building, communication etc.

Summative written examinations were not the ideal mode of assessing 21st century skills and their primacy made it very difficult to inculcate these, as students often asked whether a critical assessment of a topic was necessary for the examination.

Some teachers said that students sometimes resent being asked to express an opinion on something, or to comment as they were simply not used to this treatment in secondary school. Neither did they perceive classroom interaction, or interaction with the teacher, as contributing to their success in examinations. This puts enormous pressure on the teacher to stick to passing on / transmitting what is strictly exam material as opposed to spending time on debating, or fostering some sense of critical thinking. The knock-on effect on other areas of further and tertiary education, and on young people's ability to secure some basic 21st century skills cannot be underestimated. One teacher observed how this dogmatic approach crystallised in her own subject's examination, with questions asking students to 'only' list the advantages of GM crops – as opposed to both the advantages and disadvantages.

Some teachers pointed out that students simply regurgitated what they had memorised both in their school work and in the summative examination. They are inevitably surprised that this 'effort' was not enough to secure a successful outcome in an exam. MATSEC examination reports have also highlighted this issue in the past yet there is a general sense of resignation that it comes with the post-secondary territory. One teacher remarked that such 21st century skills were often absent in teachers themselves.

University and MATSEC

There was a lot of criticism about the relationship between University and the MATSEC system, with participants saying that everything was geared to the needs of the University rather than to the needs of the student. This was the predominant view of the GCHSS focus group (see below).

Hands-on approaches

More needs to be done to prepare students for the work place – not least a clear, common objective for both the educator, the learner and the social partner. A biology teacher described how he had organised a one-week observation visit to places such as the blood bank and

hospitals as these students intended to take up medicine. At the blood bank, instead of participating in the activities of a lab, students were asked to spend a week making sandwiches and at another hospital told to peel potatoes. The lack of coordination between institutions had a direct impact on student morale and trust in the 'extra-curricular' – despite the best intentions of the institutions and the alignment on the need to secure work experience early on in the learners' journey. One teacher said that it was important for students to learn public speaking or presentation skills but there was no opportunity in the syllabus to test this. Conversely, the coordination requires careful planning and negotiation. The school and the place of work need to be very clear and there needs to be agreement on the purpose and aims of the work experience, the skills and attitudes that students are expected to acquire, whether students are expected to write a report, and the follow-up or post-mortem activity in class. If the work experience is not planned well it is better not to do it, as illustrated by the experience of 'making sandwiches' and 'peeling potatoes'. Moreover, it is fundamental that education is not solely positioned as 'preparation for work'.

Issues specific to GCHSS

Teachers at this school were happy to note that the reputation and status of GCHSS had improved tremendously from the days when students were ashamed to say they attended GCHSS. They had concerns about the idea of a post-secondary school as part of the university, which some said was 'unacceptable' because this meant that University process would "be interpolated" into the practices of a school which was different. Post-secondary was a time where students moved from the 'spoon feeding" of the secondary school system to the University where learning would be in their own hands. The GCHSS's place should be in DES and not with University; the business of University should be tertiary education not post-secondary.

There was the general feeling that one sixth form was part of the university while the others were not. Some doubted the inclusion record of some post-secondary schools. GCHSS teachers believe that while doing the same work as other institutions, they have inferior pay, benefits and working conditions to one other sixth form college, with the inevitable consequence that many choose to move on to other schools as soon as they have the opportunity.

Teachers at this institution also were concerned that their school had the status and was run like a secondary school. They mentioned the bureaucracy involved in this system with even trivial decisions, like taking students for a geography trip being decided at a Director level rather than at a school level.

Teachers also reported that the CPD which they were obliged to attend was not meant for post-secondary but for secondary schools. Internal CPD organised by some departments at GCHSS was voluntary and more oriented towards the needs of post-secondary purposes. The weekly meetings organised by the Education Division were deemed to be irrelevant to the post-secondary level. Teachers were adamant that before teaching at post-secondary level, teachers had to have experience at other levels, otherwise they would not understand the climate of where they had come from. Perhaps teacher sentiment in GCHSS could best be summarised by quoting one teacher directly: *"Xbajna noperaw ġo sistema li m'hiex 'catered' għalina! Mhux biss kont qed nagħmel 'over and above my work', mhux talli 'I'm not paid', mhux talli 'I am not respected like other professionals".*

Importance of preparing for required change

On the whole, it was clear that participants in all teacher focus groups were in favour of change at many levels. Some expressed the hope that their suggestions would not be shelved as had so often been done. At the same time, they expressed caution at the speed of the change, emphasising that teachers had to be prepared and involved especially in the formulation of the LOFs.

Annex 11: Decisions made during Secondary School that impact the Post-Secondary sector

1. Options at the end of Year 8 (Form 2)

Students in state schools have two instances during their compulsory education where they are required to choose one or more subjects.

(i) At the end of Year 6 (Primary), students are asked to choose one foreign language i.e. Italian, German, French, Spanish, Arabic or Russian*. During the last two years of Primary education, the students have been exposed to a taster (10 lessons) of Italian, French and German during the Foreign Language Awareness Programme (FLAP), conducted by secondary school teachers in primary classes. As from 2016-2017, Spanish will be introduced in the FLAP programme too. At present, approximately 62% of the students choose Italian, 13% choose French and Spanish, 11% choose German and 1% choose Arabic.

(ii) At the end of Year 8 (Secondary), students are asked to choose two additional subjects from the following 21 option subjects:

a. Design & Technology
b. Chemistry
c. Biology
d. Art
e. Music
f. Accounting
g. Business Studies
h. History
i. European Studies
j. Geography
k. Social Studies
l. Graphical Communication
m. Agribusiness

n. Information Technology

o. Engineering Technology

p. Hospitality

q. Health & Social Care

r. Home Economics

s. Physical Education

t. Computer Studies

u. Textile Studies

Students may also choose a second foreign language: Italian, French, Spanish, German, Arabic or Russian as one of their option subjects[53].

2. Correlation between the subjects chosen at the end of Year 8 (Form 2) leading to registration for SEC examination and the subjects chosen at post-secondary institution leading to registration for Matriculation examination.

The data for children born in 1997 is used. Children born in 1997, registered for SEC in 2013 and for Matriculation in 2015. The Table below shows the number of students who register for SEC and for Matriculation within this cohort.

Cohort born 1997	No. of children	No. of children registered for SEC in 2013	No. of students registered for Matriculation in 2015
Males	2547	2012 (79%)	826 (32%)
Females	2288	1990 (87%)	1060 (46%)
Total	4835	4002 (83%)	1886 (39%)

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[53] Russian is only taught in a couple of schools due to the lack of a teacher of Russian.
State schools partly limit the choice of combination of subjects through a registration form which has a complicated and extensive choice of subjects.
Non-state schools have additional option subjects including Commerce and Economics. Most of the non-state schools limit the option choice by combining pairs of subjects together, offer a limited choice of combinations and sometimes offer additional subjects after school hours. They justify these restrictions upon the number of students that they have.

82.8% of the children born in 1997 (N=4,835) registered for SEC examinations. In particular, 79.0% of males (N=2,547) and 87.0% of females (N=2,288) registered for SEC examinations in 2013. These students registered for the core subjects and for the option subjects which they had chosen at the end of Year 8. The same cohort then registered for their 'A' Level and 'IM' Level in 2015. In total, 1,886 from the 4,835 children (39.0%) born in 1997 registered for the Matriculation examinations in May 2015. These consisted of 826 males and 1,060 females, that is, 32.4% of the 2,547 males and 46.3% of the 2,288 females born in 1997 registered for these examinations in this session. The Table below shows the subject choice of the same cohort of students across the years 2013 to 2015.

Option subjects	No. of Students born 1997 who sat for SEC in 2013 (including foreigners who come to Malta after 1997)	No. of Students born 1997 who sat for A or IM Level in 2015 in particular subjects	% of students who choose the same A or IM Level subjects as their choice at the end of Year 8.
Accounting	545	295	54%
Arabic	21	6	29%
Art	583	56	10%
Biology	1336	521	39%
Chemistry	765	282	37%
Computing	972	141	15%
Design and Technology	320	Not available	
Economics	233	128	55%
European Studies	77		
French	1361	102	7%
Geography	209	84	40%
German	326	19	6%
Graphical Communication	565	6	1%
History	216	87	40%
Home Economics	822	115	14%
Italian	1864	162	9%
Physical Education	412	67	16%
Physics	3408	601	18%
Russian	14	1	1%
Social Studies	1403	210	15%
Spanish	262	30	11%

Above data compiled from Statistical reports issued by the MATSEC Office for SEC 2013 and for Matriculation in 2015. The above table does not include the core subjects such as English, Mathematics, Maltese, etc. as they are beyond the scope of this exercise.

Conclusion

One can generally conclude that, at best, 1 in 2 students study at post-secondary education the same subject s/he had chosen at the end of Year 8.

Annex 12: Descriptors defining levels in the European Qualifications Framework (EQF)

Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes[20] relevant to qualifications at that level in any system of qualifications.

Level	Knowledge	Skills	Responsibility/ Autonomy
	In the context of EQF, knowledge is described as theoretical and/or factual.	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of the EQF responsibility/autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
1	Basic General Knowledge	Basic Skills required to carry out simple tasks	Work or Study under direct supervision in a structured context
2	Basic factual knowledge of a field of work or study	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work or Study under supervision with some autonomy
3	Knowledge of facts, principles, processes and general concepts, in a field of work or study	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for completion of tasks in work or study Adapt own behaviour to circumstances in solving problems
4	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change Supervise the routine work of others, taking some responsibility for the evaluation and

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[20] Learning outcomes are statements of what a learner knows, understands and is able to do on completion of a learning process. They are generally classified as 'knowledge, skills and competences'. In the context of the EQF, the last element is limited to 'responsibility/autonomy' since the descriptors herewith reflect statements commonly agreed between Member States for application of this Recommendation and these do not correspond fully to the conceptual definitions.

			improvement of work or study activities
5[54]	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	Comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change Review and develop performance of self and others
6[55]	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts Take responsibility for managing professional development of individuals and groups
7[56]	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
8[57]	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

[54] The descriptor for the short cycle developed by the Joint Quality Initiative as part of the Bologna process, (within or linked to the first cycle), corresponds to the learning outcomes for EQF level 5.

[55] The descriptor for the first cycle corresponds to the learning outcomes for EQF level 6.

[56] The descriptor for the second cycle corresponds to the learning outcomes for EQF level 7

[57] The descriptor for the third cycle corresponds to the learning outcomes for EQF level 8.

Compatibility with the Framework for Qualifications of the European Higher Education Area

The Framework for Qualifications of the European Higher Education Area provides descriptors for three cycles agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle