

10

Learning from the Sequence The Use of Comics in Instruction

Gorg Mallia

Comics have been perceived as a medium of entertainment which is full of humor, adventure and fantasy. But comics can increase comprehension, motivation and interest as well. The article talks about the characteristics of comics perceived earlier and discuss a study which aims to find whether the comics had positive effects within instruction. Its focus is to find whether comics can be used as an educational tool to enable cognition at par with text and illustrated text.

Children and Comics

Comics have almost always been primarily an entertainment medium. Their appeal to people in general, and children in particular, has always been associated with a recreational setting, with only the occasional foray into the didactic. This can be seen, for example, in the well-mapped British Juvenile comics (e.g., Gifford, 1975, and 1987), which are primarily gag-based. The American superhero comics, whose life stretches from the thirties to today, also well mapped by people like

Goulart, 1983, and 1991; Benton, 1993; Jones and Jacobs, 1997; and others, are pure escapism. In fact, most comics of all genres throughout the world (Horne, 1976) are clearly indicative of a medium whose main aims are humor, adventure, and fantasy. As a result, comics within pedagogical contexts have always been relegated to the affective domain, most often used as attention grabbing elements – as signposts to more symbolically encoded instruction.

The genesis of modern comics was not juvenile, but a mirror of the not-so-pleasant lives of the late eighteenth and nineteenth century proletariat, serving their aspirations and denouncements (Kunzle, 1990). Even before that, the work of predecessors of the comics form such as Rowlandson and Hogarth spelled out a society that reeked of corruption and the sleazier side of social and political humanity (Perry and Aldridge, 1967). Gifford, 1975, talking about Great Britain, insists that:

“When the first comic paper was created by James Henderson [in 1874] children were nowhere in sight. Funny Folks cost one old penny for its eight packed pages of ‘Funny Pictures, Funny Notes, Funny Jokes, Funny Stories’, but even that humble brown coin was beyond the pocket of the Victorian child. So Henderson designed his comic for adults: The cartoons were political, the Comic Fancy Page topical and the stories satirical.” (p. 6)

But it was not long before the very graphic humor, possible because of the visual-verbal nature of the genre, attracted the young, and the comics changed to accommodate the younger age groups. The humor, adventure and fantasy in the comics on both sides of the Atlantic claimed more and more youngsters. The humor was often black in nature at first, and looked at from today’s perspective, incredibly politically incorrect. But it did attract millions to the comics format. It instilled in readers a literacy in the unique language, which was made of sequential storytelling that was primarily visual, but elaborated on by the textual dimension. An interesting by-product of the nature of the genre is that, though it was complex and elaborate, comics visual literacy seemed to be more easily acquired by the young than the symbolic literacy of morphemic syntax.

Often cartooned in style and following the economy-of-line technique, comics successfully created “the illusion of life which can do without any illusion of reality”

(Gombrich, 1977, p. 284). This quality was introduced at the very inception of the genre at the hands of Rodolphe Töpffer. At the same time the pictures made sense “largely on the basis of their reproduction of real-world informational cues” (Messaris, 1994, p.166), and they instantly appealed to the young.

Comics were also not like book illustrations, which according to convention, “should continue or enhance the narrative or verse that it accompanies ... not overwhelm it, or contradict it ...” (Whalley and Chester, 1988, p.11). They were stories in themselves, conveyed by a unique language in which the sum total of elements is different from each of the elements themselves.

In the words of the guru of the genre, Will Eisner (1990):

“In its most economical state, comics employ a series of repetitive images and recognizable symbols. When these are used again and again to convey similar ideas, they become a language – a literary form, if you will. And it is this disciplined application that creates the ‘grammar’ of Sequential Art.” (p.8)

There has been an ongoing love-affair between children and comics. Admittedly, sales to children have dropped drastically in almost all countries that offer such information. This is primarily because of the competition for young attention by so many interactive media that often, ironically, use cartoons or cartoon language as part of their architecture. But the definite link between comics and childhood remains.

It is, therefore, quite surprising that one of the most respected of all experts on the design of instructional text, James Hartley (1994), limits the use of comics in textbook design entirely to the affective domain:

“Clearly the affective role of instructions is to the fore in comic strips: their aim being to attract and motivate less-able learners. Often cartoon strips are used to present a simplified form of instruction, but there has been little research on their effectiveness in this respect. ... The general picture that emerges from studies of text with cartoon embellishments is that cartoons often enhance motivation, but they do not often increase comprehension.” (pp. 87-88)

Since I believe that comics can increase comprehension, along with motivation and interest, I proceeded with the following survey.

The Survey: Comics and Cognition

Relatively little research has been carried out regarding the possible effect of comics within instruction. As a result, not much is known about whether it can be applied *per se* as a total means of instruction, in the way that non-illustrated or illustrated texts can be.

A significant body of research has indicated that illustrations need not necessarily be important when it comes to the cognitive domain. It is generally accepted that their role is affective, their function most often a glorified decoration. They are considered an enhancement to enjoyment and an inducement to the utilization of other elements that would then help cognition. The prevailing belief is that they are not direct contributors themselves on the cognitive level, but are utilized only as a stimulus to awareness. Yet, hypothetically, comics language has the potential to go beyond its use as affective signposting and can communicate the full pedagogical message.

Though comics have relatively often been the subject of serious critical analysis, the concentration seems to have been on the ideological and structural nature of comics. When comics have been examined within an educational environment, the analysis has focused on using existing comics as a didactic tool (Volpi, 1977; Mareuil, 1980; Regan, Sinclair and Turner, 1988), rather than utilizing the comics format for instruction in what traditionally has been the domain of text-filled books.

What little research exists about comics in instruction points toward an attitude that is generally even more negative than in the case of illustrated text. The comic's sequential narrative is seen as breaking down into visual-verbal summary the essential points made by text. The offhand implications of this are that much of the information carried in the original text would be lost as a result of the process.

"Since there are limits to the amount of information (stimuli) in visualization that an individual can interact with simultaneously, one possible solution to increase the effectiveness of visualization is to limit or reduce the amount of information presented by the visual. Deleting irrelevant or superfluous information or stimuli from an illustration enables the illustration to convey its designated message quite rapidly; however, the process of reducing detail may also

unintentionally eliminate detail which would have been considered as primary learning cues" (Dwyer 1978, p.157).

The pictures are very important: "No serious consideration of the art of the comics can overlook the narrative function of pictures" (Harvey, 1996, p.3). In comics, illustration is one part of a symbiotic integration that complements the text and compensates for that text which is eliminated. The cueing becomes visual, and the peripherals, which would contribute little anyway to the text on the cognitive level, are excluded in favour of the message that needs to be communicated and understood. This is what Dwyer himself has termed "information compression" (Dwyer 1978).

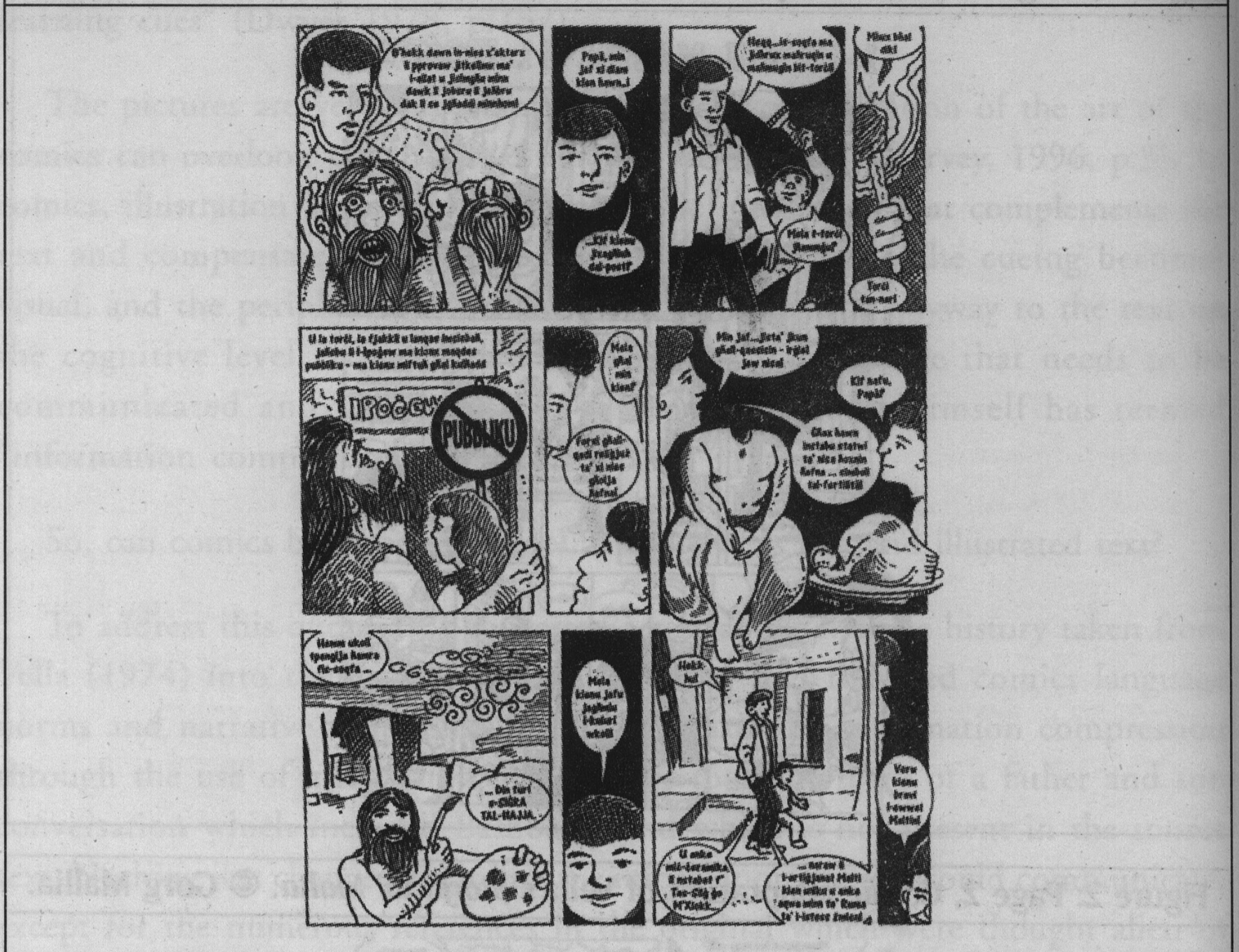
So, can comics be a cognitive tool as effective as text and illustrated text?

To address this question, I converted a text about Maltese history taken from Vella (1974) into the comics format. In doing so I followed comics language norms and narrative techniques, going for maximum information compression through the use of a narration device. This took the form of a father and son conversation which included flashbacks and which is not present in the source text. Nothing was changed regarding the information the text could communicate, except for the numerous references in the original which were thought alien to the format and left out. The book from which the text was taken also has an illustrated adaptation by a number of authors and an illustrator, Joe Mallia.^[1]

For the experiment to take into consideration existing methods of instruction, I also prepared an illustrated version of the text, using photos as well as textbook and visual aids illustrations by Joe Mallia. The resulting three versions were:

- 1) Text only version, taken directly from the source – one and a half pages of 12pt on 14 text, with another page comprising 12 references in 10pt on 11 text;
- 2) Illustrated text, same as (1), but adding a visual dimension. This treatment contained seven black and white line illustrations and three black and white half tone photos, all captioned, amounting to nearly three pages, including the 12pt on 14 text, plus another page with the 12 references set in 10pt on 11;
- 3) Comics version of (1), spread over three A4 size pages containing 36 panels of black and white artwork of varying size and no references.

Figure 3: Page 3, Comic adaptation of Vella's *Storja ta' Malta*. © Gorg Mallia.



These were tested on 90 fourth formers (average ages: 14-15 years, 45 girls and 45 boys) coming from four different schools. 60 were from different streams in Junior Lyceums, and 30, also differently streamed, were from area secondary schools.^[2] In a 45 minute session^[3] the text, illustrated text and comics treatment were given to each of 30 students. Once they had read the treatment they were given, the texts were collected and the students had to answer a questionnaire comprising 28 questions. The questionnaire was intended to test (a) short-term recall, primarily cognitive retention, and, to a lesser degree, (b) acquisition of knowledge, (c) comprehension of the text, and (d) imaginative application of facts acquired.

The structure of the questionnaire was varied. Technically: 12 questions had 3 multiple choice answers from which the participants needed to choose 1; 4 questions had a controlled number of spaces in each of which single word answers had to be inserted; 12 questions left space for open ended answers, in which the

participants could write between the length of a sentence and a short paragraph, as spaces varied from a single line (questions 12, 17, 19, and 21) to 8 lines (question 28).

The content was primarily divided into two sections. The first, comprising 26 questions, dealt with recall of text content. The intention was to see which of the treatments best aided fact retention. The second, comprising the last two questions, asked for opinion and speculation instigated by the text. The intention was to see if there was any difference in inspiration instigated by any of the treatments.

A seven-question demographic survey was also carried out. In this, three of the questions were intended to determine background inclinations towards the visual by the participants. They were asked to give their favourite subjects at school, in which subject they did best, and what they preferred to do in their spare time, whether to read a book, listen to radio, watch television, use the internet, or play a video game. Little or no significant difference in inclinations was discovered, though in the case of the internet and video games, not all had the equipment at home. Nonetheless, the results indicate that the students all seemed to be "equal" in predisposition to text and visuals. The subjects in which the students got the best marks generally varied from those they preferred, but the tendencies remained in favour of a text base, with arts/languages minimally predominating.

Data from each question for each treatment were comparatively analysed. In all cases, chi-square analyses were also run, and no statistically significant dependence between the data and the treatments was found, meaning that most differences in scores among all three treatments were minimal. But even though they were small, numeric differences did give a clear enough indication that the comics treatment competed well with the more accepted media of instruction.

Recall of content of the comics treatment was very close to that of the illustrated text treatment, and both fared better than the text-only treatment.

The intention at the outset was to find indications of whether the comics as a medium can be used as an educational tool to help cognition on the same level as text and illustrated text. The latter two are the formats predominantly used to date in school textbooks, with comics relegated to the role of attention grabbers

rather than that of teaching tools by themselves. The lack of distinction made between the illustrated text and comics treatments went some way towards corroborating the belief that the comic can be at least as effective a teaching tool as the others. This proved to be the case in both the areas of testing recall and of investigating creative goals. The fact that the comics treatment fared as well as the more pedagogically accepted illustrated text denies its popular typecast instructional role.

But even if we were to think in terms of attention stimulation alone, the reaction of the participants can empirically bear out the results of all research carried out to date on comics as a tool within the affective domain. Most participants were happy when they were given the comics treatment. Others indicated lack of interest when handed the picture-less text. If this is a case whereby "states of affection and acts of cognition are inferred from psychomotor acts" (Kibler, Cegala, Miles and Barker, 1974, p.34), then there can be no doubt as to which of the three treatments fared best with the research participants. The indications here are clear that comics are at a distinct advantage as attention grabbers and as ways of inducing reluctant students to become interested in and follow what is usually given to them in a "traditionally" text-based package.

This quantitative research was followed up by informal interviews with a sampling of the students who had been given the comics treatment. Only one open-ended question was asked ("How do you think the comic helped you learn what was in it?"), which, though difficult to validate scientifically as admissible research, was intended as no more than a directed stimulus to garner spontaneous opinions from the students.

The main thrust of the answers was that the comic told a story in continuously paced pictures, and that they could see what the characters were talking about. This helped them remember more than just having pictures that described what was being read but did not tell a story. Since the comic was short and in black-and-white line, little could be said about colour and drawn-out narrative, which other (as yet unpublished) research I have carried out on published comics yielded as the main points of interest. The indications here are that the sequence, aided by the character treatment, helped associative retention in ways that the stepped

pictures of illustration might not do. As a result of both the quantitative and qualitative enquiries, it can be stated that the comics medium has in its very nature the tools for knowledge and procedural recall.

Conclusion: Instructional Potential

The comics medium can be an important instructional tool that can work within the cognitive domain. The survey described above is a basic, exploratory study of the subject, but it has yielded some interesting and heretofore not noted results. It has begun to prove that comics can actually teach by themselves, and are not just an interesting but redundant insert within an instructional text that utilizes other channels more traditionally associated with teaching.

This research implies that comics have the intrinsic potential of being a valuable affective and cognitive tool and can be used in instruction for, among others, motivational and retention purposes.

(Gorg Mallia, Ph.D., Division of Communications and Instructional Technology, Centre for Communication Technology, University of Malta.)

Endnotes

- [1] Joe Mallia is one of Malta's foremost instructional illustrators. He worked in the Education Department throughout most of his working life, creating among others the history textbooks most commonly used in the junior classes (late primary and early secondary) in Malta.
- [2] The achievement motivation and general academic performance of students in the Junior Lyceums is expected to be normally higher than that of students in area secondary schools, since Junior Lyceums are streamed through restricted accessibility by competitive examination.
- [3] 45 minutes is the normal time for a lesson in Maltese secondary schools. The questionnaire was administered under test conditions to the students in their own classrooms. Each class held approximately 21 students, meaning that each treatment would be given to roughly seven students per session.

References

- Benton, M. (1993). *The Comic Book in America* (updated edition). Dallas: Taylor Publishing Company.
- Dwyer, F. (1978). *Strategies for Improving Visual Learning*. Pennsylvania: Learning Services, State College Pennsylvania.

- Eisner, W. (1990). *Comics and Sequential Art* (expanded edition). Florida: Poorhouse Press.
- Gifford, D. (1975). *Happy Days: One Hundred Years of Comics*. London: Jupiter Books.
- Gifford, D. (1987). *Encyclopedia of Comic Characters*. Essex: Longman.
- Gombrich, E. H. (1977). *Art and Illusion: A Study in the Psychology of Pictorial Representation* (5th edition). Oxford: Phaidon Press.
- Goulart, R. (1983). *Great History of Comic Books*. Chicago: Contemporary Books.
- Goulart, R. (1991). *Over 50 Years of American Comic Books*. Illinois: Publications International.
- Hartley, J. (1994). *Designing Instructional Text* (3rd edition). London: Kogan Page.
- Harvey, R. C. (1996). *The Art of the Comic Book: An Aesthetic History*. Jackson: University Press of Mississippi.
- Horne, M. (Ed.) (1976). *The World Encyclopedia of Comics*. New York: Avon.
- Jones, J., & Jacobs, W. (1997). *The Comic Book Heroes*. Rocklin CA: Prima Publishing.
- Kibler, R. J., Cegala, D. J., Miles, D. T., & Barker, L. L. (1974). *Objectives for Instruction and Evaluation*. Boston: Allyn and Bacon.
- Kunzle, D. (1990). *The History of the Comic Strip: The Nineteenth Century*. Berkeley: The University of California Press.
- Mareuil, A. (Ed.) (1980). La Bande Dessinée (Special issue). *Des Livres et des Jeunes* 2(5). Quebec: Ministère des Affaires Culturelles.
- Messaris, P. (1994). *Visual Literacy: Image, Mind, & Reality*. Boulder: Westview Press.
- Perry, G., & Aldridge, A. (1967). *The Penguin Book of Comics*. Middlesex: Penguin Books.
- Regan, C., Sinclair, S., & Turner, M. (1988). *Thin Black Lines: Political Cartoons & Development Education*. Birmingham: Development Education Centre.
- Vella, A. P. (1974). *Storja ta' Malta* (Vol. 1). Malta: Klabb Kotba Maltin.
- Volpi, D. (1977). *Didattica del Fumetto*. Brescia: Editrice La Scuola.
- Whalley, J. I., & Chester, T. R. (1988). *A History of Children's Book Illustration*. London: John Murray with the Victoria and Albert Museum.