



Using Web Comics in Education
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Project Deliverable Report

Deliverable nr D1 – State of the Art Comics in Education

Work Package

WP1

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**Abstract
(for dissemination)**

The use of comics for educational purposes, in printed form, began in the USA in the middle of the 20th century, and this trend expanded worldwide in the forthcoming years. As experts argued, comics could be a powerful educational medium. A recent trend in school community is the exploration of the educational use of digital comics in authentic school environments.

The scope of this deliverable is to make a literature review of studies that discuss the potential added value of comics -in printed and digital form-as an educational medium. This deliverable is the outcome of an in-depth research study which aims at investigating whether comics can be used in classrooms. The structure of the deliverable is as follows: Section 1 discusses the rationale for using printed comics as a teaching tool. Section 2 presents educational initiatives which focus on the educational use of comics. More specifically, various projects from all over the world will be presented. Some of these initiatives concern the use of printed comics (or their online version) while others concern the use of web comics in classrooms. Section 3 gives an overview of the themes of existing web comics that have been used for educational purposes. Section 4 gives an overview of the most known tools for creating web comics. Most of these tools have been proposed by their developers to be used by students in classrooms. In Section 5, the most relevant pedagogical strategies are reviewed, with reference to lesson plans that concern the use of comics in education. Finally, the deliverable ends with some concluding remarks.

Keywords List

Educational comics, comic books, digital comic books, web comics, pedagogical strategies



Comics in Education: State of the Art

1. About Educomics project

EduComics is an European Union education project under the Life Long Learning Programme Comenius Action. It aims to show how web comics can be used in the classroom in an attempt to enhance learning, engage and motivate students, and use technology in a practical and effective way. The potential for Web comics to be used in education offers educators a means of using multimedia (text, images, audio and video) with their students in most curricular areas. For example, within science, a student can navigate through a web comic book that shows different characters/actors arguing about a science topic. In languages, characters could be placed in a restaurant where they have to order a meal.

The project will collect and publish best practices on the use of Web comics in education. The best practices will include a variety of curricular areas including literacy, language learning, science education. It will also look at Web Comic authoring tools and how they can be used effectively to enhance learning strategies and lesson plans.

The project will create training material for teachers and organise seminars for teachers in Greece, Cyprus, Italy, UK and Spain. These attending teachers will be able to apply strategies and lesson plans in their schools.

2. About the workpackage 1: Survey and Analysis of the usage of web comics in education

The aim of workpackage 1 (wp1) is to perform a literature review about the use of the web comics in schools. A report on existing educational web comic books will be created in which partners will collect existing learning strategies that suggest the use of educational web comic books as instructional media. The EduComics partners will review studies of the published literature, discuss with peers from their countries and others, make liaisons with international organisations who use comic books in education. The partners will collect the most common strategies of the educational use of comic books, well known educational comic books, and authoring tools for web comics. This will be the first attempt worldwide at conducting a systematic collection of resources about educational comic books and, especially web comics.



3. Definitions

Although rigid definitions of comics are often controversial, in general, their exploration is likewise an important and worthwhile exercise because they offer us the opportunity to identify, categorize, evaluate and interpret comics as far as education is concerned. Kunzle (1973) proposes the following definition:

"a comics consists in a sequence of separate images with a preponderance of image over text that appears (and was originally intended to appear) in a mass medium and tells a story which is both moral and topical".

Comics is, according to Eisner (1993), sequential art, thus emphasizing that comics is a form of art, or method of expression. In his 1993 book "Understanding Comics", Scott McCloud cites:

"Juxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or produce an aesthetic response in the viewer". (p. 9).

David Carrier (2001) argues for three essential features of the comic: the speech balloon, the closely linked narrative, and the book-size scale. Finally Hayman and Pratt (2005) propose the following definition

"a sequence of discrete, juxtaposed pictures that comprise a narrative, either in their own right or when combined with text".

All previous definitions, regardless of their faults or problematic points that is not of the interest of this paper to examine- pinpoint that comics are essentially composed of sequential images or pictures usually accompanied by text narrative.

The term "webcomic" has come to describe any comic book designed for viewing on the internet [<http://comicbooks.about.com/>]. Charley Parker's Argon Zark was the first comic created specifically to be published on the World Wide Web in June of 1995. [The Artistic History, 2009]. Scott McCloud pinpointed that web comics' added value is based on the notion of the infinite canvas as well as the freedom of navigation which allows web comics to be free from constraints that pieces of paper impose on printed comics. Other artists have been experimenting with the incorporation of animation into their comics.

Using the internet as a distribution medium, allows webcomic artists (especially independent ones) to release their creations to the broadest possible audience overpassing any constraints imposed by the comics industry (e.g.size, theme, etc). [Sean et al, 2004]. These arguments along with the various new representational ways of comics in the cyberspace are



discussed by Mcloud in his book "Reinventing comics" as well as on his personal web site.

4. Rationale for using comics as a pedagogical strategy/teaching tool

The interplay of written and visual elements may render comics an innovative educational medium, capable of engaging students in a way that acknowledges the visual world in which they live. One of the supportive learning theories is Clark's and Paivio's (1991) dual coding theory, which emphasizes the importance of imagery in cognitive operations. They advocate that recall/recognition is enhanced by presenting information in both visual and verbal form. In addition, Mayer and Moreno (1998) also suggested strategies so as to teach through computers, presenting narration and cartoons simultaneously. Several other researchers have explored the strengths of comics in education (e.g. Yang, 2003) providing compiled data for its usefulness as follows:

- a) Motivating. Due to human's natural attraction to pictures, comics can capture and maintain the learner's interest (Yang, 2003);
- b) Visual. Pictures and text mutually tell a story. In this "interplay of the written and visual," comics "put a human face on a given subject" resulting in emotional connection between students and characters of a comic's story, (Versaci, 2001);
- c) Permanent. Williams (1995) cites comics' "permanent, visual component" in contrast to film and animation, where the medium dictates the pace of the viewing progresses. The text medium is also permanent but not "pictorial". So "visual permanence" is unique to comics, while time within a comic book progresses at the pace of a reader;
- d) Intermediary: Comics can be a scaffold to difficult disciplines and concepts, can give to reluctant readers the non-threatening practice and to the experienced ones inspiration and confidence for more challenging texts interest (Yang, 2003);
- e) Popular. Hutchinson (1949) stated that "there should be harmony between the child's on-going life activities and his experiences in the school - new learning always is a continuation or expansion of learning already possessed by the learner". In addition, comic books promote media literacy, encouraging students to "become critical consumers of media messages" (Morrison, Bryan, & Chilcoat, 2002). Through comic



books about social aspects students may examine "contemporary lifestyles, myths, and values" (Brocka, 1979).

f) development of thinking skills: Analytical and critical thinking skills can be developed through comics according to Versaci (2001).

Taking into consideration the comics' potential as an educational medium, training courses to introduce educational comics in the teacher community need to be created. These courses have to be based on best practices and contain samples of lesson plans. The educomics project aims at training teachers to design lesson plans where students (in groups or individually) will have the opportunity to draw upon stories (often complex) that they can revise, publish and share with others in their communities.

5. LITERATURE REVIEW

Teachers' perspectives about comics in education

The use of comics in education is an unexpectedly old story. Since the early 40's many educators in USA such as W. W. D. Sones (1944) and others conducted a series of studies on using comic books in education, providing data for its usefulness. Comics-supported curriculum then appeared, while the Journal of Educational Sociology devoted the 1944's Volume 18, Issue 4 to the topic.

Furthermore, scientists, as the psychiatrist Wertham in his 1954 book, "Seduction of the Innocent", regarded comics harmful for literacy. That book led to Senate hearings and to a censorship code, so eventually pro-comics educators stopped. In the 1970's teachers, such as R. W. Campbell, R. Schoof (Koenke, 1981), and Brocka (1979), dared to use comic books again. The milestone was set in 1992, when Art Spiegelman's comic book "Maus" about the Holocaust experience won a Pulitzer Prize (Sturm, 2001), proving that comics can be an artistically mature and literate work.

In the next decades comics gained popularity again in the world of education in primary, secondary, tertiary and adult education. The establishment of both undergraduate and graduate programs in comics at Colleges and Universities all over the world renders it as a medium worthy of academic study. In addition, many educators at all levels have begun to teach their students through this medium. For example, English professor Rocco Versaci (2001) at Palomar College used comics to critically examine the definition of literature. University of Minnesota Physics professor James Kakalios (2001) in his introductory physics course "Everything I Needed to Know about Physics I Learned from Reading Comic Books" gave examples of basic principles of Physics, Chemistry, and Biology, using concepts and characters from comic



books. Neil Williams (1995), replaced his traditional *English as Secondary Language* course books with Calvin and Hobbes comic books (Yang, 2003). The same comics was successfully used in classroom by Ruggieri Colleen, teacher of English, in terms of their connections with transcendental thinking (2002). In 2002, the New York City Comic Book Museum released C.O.M.I.C.S., an eight-lesson curriculum for K-12 students teaching the reading and creation of comics.

Chilcoal (1993) offers examples of using student-made comics in History lessons. Believing that visual representation could be a cognitive tool for examining, interpreting and also connecting past to present, he has been using comics in classroom to raise interest in History and generally to help students learn. Chilcoal and Ligon (2004) also used the comic medium in lessons of History, Politics and social issues. Students created their own historical comic books in both aforementioned studies. Wright and Sherman (1999) used comics for building literacy and critical thinking skills in an interdisciplinary approach in American elementary and middle schools, where students made their own comics as well. Morisson, Bryan and Chilcoal (2002) proposed the use of pop culture media such as comics, film and music across all curriculum areas because of their significance in contemporary living, their connection with the outside world and students' activities, and because their use help students to judge critically the quality and accuracy of such media content. All of the previous authors reported that students increase skills in researching, writing, nonverbal communication and reading comprehension by locating main ideas, summarizing and organizing key plot points for their narratives.

In addition several organisations and publishers in Europe and USA have published educational comic books. French " Centre internationale de la bande dessinée et de l'image" in Angoulême (<http://www.cnbdi.fr/>) offers a large bibliography about the use of comics in education for several subjects such as History, Literature, Chemistry, Language etc. The UK publisher "Bringing classics to life" (<http://www.classicalcomics.com/>) is being creating educational comics which are adaptations of classical literature (such as Shakespeare, Charles Dickens, Jane Eyre, Charlotte Bronte etc). Marvel Comics is also set to release classic literature into comic books (Last of the Mohicans, The Picture of Dorian Gray etc) with glossary of terms for young readers and special content to assist teachers. Science and educational publisher John Wiley & Sons has paired Shakespeare with manga-style artwork in an effort to make his creations accessible to younger readers.

The "For Beginners" documentary comic book series deal with subjects ranging from philosophy (e.g. Plato for beginners) to politics and Art, while Larry Gonick's (mathematician and comic book writer) cartoon guides or cartoon history of different subjects e.g. Universe, Physics are being used in schools for many years. In the late nineties publications available from the European Commission (<http://www.ec.europa.eu/publications/>) in comics format has been designed for teachers to use in order to illustrate the activities and processes of the European Parliament, to fight against racism and to promote peace. In Greece, several educational comic books also



appeared such as: "Adventures of Asterix" in ancient Greek language, Syntax of Ancient Greek in comics, Aristophanes' comedies, or Sophocles' tragedies in comic format, Greek Mythology, etc.

Very recently, various educational web comics have started to appear on the internet. Since various online publishers of digital comics like IKcomics [<http://www.ikcomics.com/>] massively established, companies and individual artists who specialise on educational comics set up online stores. As a matter of fact, the first generation of the web comics, which had been disseminated, were digital versions of the printed comics. Characteristic examples are the UK publisher called Classical Comics Ltd [<http://www.classicalcomics.com/>], which creates graphic novel adaptations of classical literature (e.g. William Shakespeare's Henry V, Macbeth, Charlotte Brontë's Jane Eyre and others) and the American Library of Embassy of the United States of America in Nepal which contains full 4 web comic books along with teacher's guide in English and Nepali.

Of course several web comics have been authored by various profit and non-profit organisations. Typical examples are the web comics by NASA's Langley Research Center which aim at encouraging the pursuit of space education.

The look & feel of web comics differ a lot. These variations are evident when one compares the following web comics:

- The "Adventures in Synthetic Biology", by Drew Endy, Isadora Deese and the MIT Synthetic Biology Working Group, and illustrated by Chuck Wadey
[<http://www.nature.com/nature/comics/syntheticbiologycomic/index.html>]
- The web comic "Factoring with Mr. Yang"
[<http://www.humblecomics.com/factoring/>]
- Concept cartoon which are cartoon-style drawings showing different characters arguing about an everyday situation. They have been used for various subject areas including Maths, Astronomy and English
[<http://www.conceptcartoons.com/>].

School Projects

In Great Britain a report entitled "Graphic Novels across the curriculum" presents an overview of school projects where teachers have been using comics in order to promote and to extent students' interests in reading and literacy [Gibson, M. (2007)] The majority of these projects were about course subjects of English lessons, while fewer dealt with Art and History. In these projects, students studied comic books or worked in teams to create their own comics, which they shared with their fellow students and friends.



In USA, the Comic Book Project is an arts-based literacy and learning initiative started in 2001 by Michael Bitz at an elementary school in Queens and now is hosted by Teachers College, Columbia University. The goal of the project is to help children write, design, and publish their own comic books, according to their personal experiences and interests, as "an alternative pathway to literacy" (<http://www.comicbookproject.org/>). The Editorial of New York Times in January 3rd, 2008, dedicated to The Comic Book Project, reports that it "has spread to more than 850 urban and rural schools across USA."

In 2005-2006 school year, teachers at eight schools in Maryland, Baltimore County, taught lessons based on Disney cartoons as part of a "Comics in the Classroom" pilot program. Researchers at the University of Maryland, evaluated the program and found that teachers and students had positive attitudes. The Maryland State Department of Education (MSDE), in cooperation with Diamond Comic Distributors and Disney Publishing Worldwide, is expanding nowadays a new comics-based literacy curriculum, inviting teachers to take part in a new phase started in Spring 2008, in approximately 200 classrooms of Maryland elementary schools [<http://bookshelf.diamondcomics.com/public/default.asp?t=2&m=1&c=20&s=470>]. As reported in Publishers Weekly "The goal is to develop a plan and instructional strategies that support the use of graphic literature in elementary, secondary, adult, and corrections education" believing that comics "can encourage reluctant readers to read more and talented students to gain in knowledge and creativity". [www.publishersweekly.com/article/CA6624192.html]

At the School of Arts and Enterprise, a charter high school in Pomona, California, students learn a multitude of subjects through comic books. Teacher David Baldizon draws from the book "Caped Crusaders 101: Composition Through Comic Books", which explores the literary features of comics and leads students from Batman to Hamlet and from Captain America to the Cold War.

The Food and Agriculture Organization of the United Nations and the World Association of Girl Guides and Girl Scouts (FAO and WAGGGS) in order to raise awareness among children of the issues of food and food security and to educate and encourage them to take action against created and widely disseminated a comic-book entitled "Feeding Minds, Fighting Hunger". It is accompanied by a teaching guide in eight countries: Brazil, Canada, India, Indonesia, Italy, Jordan, Sierra Leone and Uganda [<http://www.feedingminds.org/>].

A project called "Common values" [<http://www.valeurscommunes.org/>] co-financed by the European Commission (2003) for the integration of immigrants, involved students, teachers and civil society of four European countries, using comics as a means of communication and development with a guide "as a tool and resource for teachers who wish to employ these comics in their didactic work". The books and the guide were piloted by three Belgian schools and showed that the project is of wide interest.



In Germany, during the spring 2008 semester, school students have been provided with a comic book account of the Holocaust (Die Suche, The Search), distributed by the Anne Frank Zentrum in Berlin, as a teaching aid for history. The book has already been used in the Netherlands and is also to be piloted in Poland and Hungary. The Search is a sequel to the graphic novel "A Family Secret", which was published in 2003. A Family Secret tells about the Netherlands during the Second World War, and has been extremely well received by both teachers and pupils [<http://www.annefrank.org/content.asp?PID=679&LID=2/>].

In Italy in 2003, a national project named "Banchi di nuvole" about teaching comics took place in 250 primary schools, aiming at the development of language arts, the use of ITC and forming an international language of communication in collaboration with six Education Regional Offices (Uffici Scolastici Regionali) of Italy. The results that were most positive were presented at an international conference in Rome (2004). A second phase started in 2005-2006, expanding the project at secondary schools. (<http://www.banchidinuvole.org/>) In addition in autumn of 2007 Lucca Comics & Games in Lucca, (<http://www.luccacomicsandgames.com/>) in the occasion of the 200 anniversary of the birth of Giuseppe Garibaldi introduced the comic book "I jeans di Garibaldi", for students of primary education in the province as part of the project "Lucca Junior e la Storia". They aim to teach students the History of Garibaldi and other current issues as patriotism, theme of war, division of southern and northern Italy, etc.

In Belgium, a project for an ICT-platform of Free University of Brussels (for pupils and teachers of secondary level) suggested comics for students to find and decode the scientific experiments of the heroes in the comic books. A number of mysteries had to be solved and the final solution was presented. In its three editions, more than 7000 pupils participated. (<http://comix-files.vub.ac.be/>) The platform consists essentially of three subprojects: the ComiX-files (1st stage of secondary level (12-14)), Stimulus (a virtual science class for the second stage of secondary education (14-16)) and the Virtual Museum (3rd stage of secondary education (16-18)).

Titles of Educational Digital comics

All the aforementioned projects and others prove that the didactic initiative of using comics in classroom expands worldwide with positive results. In those projects several educational comic books for a variety of subject areas have been created.

An indicative list of educational webcomic strips and web comic books per subject areas is presented in Annex I.

Research studies show that even web comics of various forms, e.g. web comic strips, web comic books, and concept cartoons, are a valuable learning resource for informal assessment, motivating students, enabling students exchange their ideas and construct knowledge collaboration, and promoting learner involvement and motivation (Naylor et al, 2001).



Two are the current trends in using web comics in education, which are being promoted by the educomics project consortium:

1. The creation of a new generation of web comics that take advantage of the potentials of hypermedia. Web comics of this new generation will incorporate actors which might be graphical animated characters that will talk to each other via balloons that will contain texts with hyperlinks to additional resources such as videos, images, sound files, diagrams, photographs, links to web sites, etc.
2. Helping students forge an alternative pathway to science education and literacy by making them content authors who will write, design, and publish original web comic books either individually or in collaboration. The trend is to put students in the role of creators, rather than merely receivers of information.

The software industry has developed tools for the presentation and authoring of digital comic books.

6. Tools for the presentation and authoring of digital comic books

The various tools for the presentation and authoring of digital comic books could be categorised as follows:

- i. Interactive viewers of educational comic books, such as KABAM by Centers for Disease Control and Prevention U.S.A. (U.S. Department of Health and Human Services) which presents stories with dialogues and asks the student to interact with the book, asking for their opinion which may influence the development of the story.
- ii. Interactive comic books for self-assessment, such as the aforementioned Concept Cartoons. They show different characters arguing about science topics. The cartoons are designed to provoke discussion and stimulate scientific thinking as students discuss a range of viewpoints, put forward by the cartoon characters. Children having read some pages of the comic book, are asked to answer to multiple-choice test which has the form of unfinished dialogues among the cartoon characters.
- iii. Comic creators which allow the design of web comic strips or web comic books by importing pictures and dialogues and by giving the potential of storage, management, even sharing the produced material.



The most well known tools for creating web comic strips are:

- Garfield Comic Creator (<http://www.garfield.com/fungames/comiccreator.html>)
- Comic Strip Creator [<http://www.comicstripcreator.org/>]
- the Make Beliefs Comix [<http://www.makebeliefscomix.com/>]
- Comic Creator by ReadWriteThink
<http://www.readwritethink.org/materials/comic/index.html>
- Mashon Comic Creator [<http://www.mashon.com/editor/>]
- KABAM! Comic Creator [<http://www.bam.gov/>]
- StripCreator [<http://www.stripcreator.com/make.php#>]
- Disney's Comic Creator
[\[http://disney.go.com/surfswell/comiccreator.html\]](http://disney.go.com/surfswell/comiccreator.html)
- Futurama Comic
[\[http://tfp.killbots.com/comicmaker/comic_maker.htm\]](http://tfp.killbots.com/comicmaker/comic_maker.htm)
- Gnomz [<http://en.gnomz.com/>]

The most well known tools for creating web comic books are:

- Comic Book Creator (<http://www.hypercomics.com/>)
- Comic Life Comic Life (<http://plasq.com/comiclife/>)
- ComicLab: A WebComicBook Creator [<http://www.itisart.com>]

Some characteristic reviews about various authoring tools for web comics can be found on various web sites, such as:

- <http://www.indiereview.co.uk/features/articles/online-comic-creator-tools-a.html>

7. Lesson plans and strategies for using comics in the classroom

Various websites provide teachers lesson plans and articles about the educational uses of comics:

- BBC/ British Council Teaching English webpage (<http://www.teachingenglish.org.uk>, Clare Lavery suggests activities for using comic strips in classroom from beginner level to advanced level for a variety of language and discussion activities, believing they are powerful teaching tools.



- The National Association of Comic Art Educators, presided by James Sturm, is an organization committed to promote the acceptance of comics as an art form within educational institutions and to facilitate the teaching and use of comics in educational settings. Their website (www.teachingcomics.org) features the syllabi of existing courses, instructional units written by cartoonists and professors, and an online community of comics educators. "There really is a resurgence in this," high school teacher Jean Diamond says of comics-based projects, "and it's a fabulous way to get kids thinking creatively" (Wax, 2002).
- Diamond bookshelf (<http://bookshelf.diamondcomics.com/>)
- NACAE site offers a forum (<http://www.teachingcomics.org/bb/index.php>) where educators in comic and/or sequential art can get and share ideas about any aspect of teaching about comics, teaching with comics and teaching how to make comics. The comix-scholars@clas.ufl.edu list (<http://www.english.ufl.edu/comics/scholars/>) is an academic forum aimed at those involved in research, criticism, and teaching related to comic art.
- A strategy shown at the UNESCO site which is about a learning game where students are called to put a drawing and text together http://portal.unesco.org/education/en/ev.php-URL_ID=6624&URL_DO=DO_PRINTPAGE&URL_SECTION=201.html
- Education World offers various lesson plans such as a lesson plan that will get students thinking about their heroes. The lesson plan is entitled "Superhero Comic Strip". Students create a new superhero and write a comic strip about the superhero! (Grades 3-5, 6-8, 9-12) http://www.education-world.com/a_lesson/00-2/lp2289.shtml
- UNESCO has published a comic book which could be used for awareness-raising to increase the access of girls and women to scientific and technological subjects with the aim of motivating girls to opt for science subjects. <http://unesdoc.unesco.org/images/0011/001180/118080mb.pdf>
- The National Council of Teachers of English (NCTE), the International Reading Association (IRA), and the MarcoPolo Foundation have created lesson plans for grades 3-12, help teachers design learning activities in which comic strips play central role.
- Teaching With Comics [<http://www.teachingcomics.org/>] web site has a lot of resources for teaching with comics such as lessons and activities for teaching drawing, visual storytelling, and more.



- eMINTS has published an online catalogue of websites which are about graphic novels and using comics in the classroom [<http://www.emints.org/ethemes/resources/S00002067.shtml>]
- Scott Tingley, a teacher in a public school in the New Brunswick, Canada has created a web site called Comics in the Classroom.net for helping his colleagues effectively use comics in classroom [<http://comicsintheclassroom.net/>]
- ReadWriteThink Web site at (<http://www.readwritethink.org>.) of NCTE INTERNATIONAL READING ASSOCIATIONS provides access to practices and resources in reading and language art instruction. In the page "students material" the interactive tool "The Comic Creator" is suggested for students to compose their own comic in order to use technology, while developing literacy skills.
- Brian Boyd, an English teacher in Thailand, created Grammarman (<http://www.grammarmancomic.com/>) a digital comic-style figure who battles grammar mistakes around the globe.
- In his site "Comics in Education" High School Teacher and Cartoonist, Gene Yang, presents his final project for his Master's in Education about the benefits of comics in education. (www.humblecomics.com/comicsedu/ comics in education) and samples of his work, such as "Factoring with Mr. Yang and Mosley" (<http://www.geneyang.com/sites.htm>) an attempt of his to exploit the strengths of digital comics as an educational tool in an online comics-based unit, teaching factoring, a difficult concept covered in Algebra.

It is extremely important to note that all proponents of the use of comic books in the classroom stipulate that comics are to supplement current materials, not to replace. Therefore no one should see the use of comics as eliminating current grade appropriate reading materials.

8. Concluding Remarks

New instructional media such as comics are able to enhance the quality of learning process. Teachers should be prepared to successfully apply comics in classrooms in order to meet the complex learning needs of students. The best way to prepare teachers is to offer teacher training seminars where they could find out about best practices in using web comics in educational settings, lessons learned as well as the functionality of the authoring tools which are available.



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