

The Contribution of Educational Technology in the Achievement of Literacy

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*«Το μυαλό των παιδιών δεν είναι
δοχείο να το γεμίσουμε· είναι εστία,
φωτιά, να την ανάψουμε»!*
Πλούταρχος

"children's mind is not a
container to fill• it is a fire to
light it up"!

Plutarch

Abstract

One of the primary purpose of the educational process is to help children obtain literacy in any form can be achieved. The educational technology can make a major contribution in this direction. The purpose of this report is to highlight the dynamic and creative cooperation between these two fields, Pedagogic and Technology and how this cooperation contributes to the cultivation of intellectual, social and communicative skills and pupil's capacity. Learning, which takes place in an enriched with learning incentives environment, which harmonizes the interests of pupils and is based on modern pedagogical principles through innovative teaching approaches and utilizing the knowledge of modern media technology, can only be creative and successful learning and leads to the creation of successful learning communities. A creative teaching, which takes place in a class where a pedagogical climate of pleasure and expectation dominated, can only be of benefit of the pupils in many ways.

Key Words: literacy, educational technology, creative teaching, climate, learning communities

Introduction

To celebrate the words of the ancient history Plutarch we should take into account that as teachers must provide opportunities to our students, so that all of them develop their capabilities and their skills as much as possible. To do that, we decided to implement a research project which aimed to investigate how students may obtain different forms of literacy with the help of new technologies (ICT). Before we present our research, it is worth to explain what we mean with the term of *literacy*, how many forms and kinds of literacy there are and how we can help our students to obtain them. How can new technologies contribute to this task?

Literacy refers to the ability of man to function effectively in a variety of environments by making use of language and communication skills, flexible and creatively (Matsagouras, 2007) in order to understand the communication conventions, the use of speech (spoken or written) in a correct way, adopting at the same time critical attitude according to the conventions and expectations of communication circumstance.

Furthermore literacy refers to the ability of man to write and read, to understand, to decode and interpret critically and visual forms of communication, such as pictures, maps, video and other multi-modal texts or even body language (Kalantzis & Cope 2001).

And of course, in a developing society such as the present one, the definition of literacy includes except from the skills in literacy and arithmetic, the management of information, the interpretation of histograms, the expression of ideas and arguments, the situations of problem solving and decision-making and also the proper and careful use of electronic texts and digital media with a view to the adoption of a critical attitude to the various original communication circumstances which is required to be involved as a person, as an employee or as a future citizen of society.

With the belief that literacy contributes significantly to the feeling of social affirming of the individual, while the lack of it creates problems in person and leads to social isolation and marginalisation, we decided to take up the implementation of this research in order to teach pupils as many forms of literacy by engaging them in a pleasant, creative and constructive environment.

It is known that a child obtain abilities of literacy first in family and in his close social environment, but the school has the most crucial role in this by providing systematic training which help the pupil to obtain these levels of literacy which is necessary in order to respond later on adequately to the needs of society, where he is going to live in. In other words, the school with suitable and appropriate strategies and methods can help students obtain the three types of *school literacy*¹ (*functional literacy, critical literacy and scientific literacy*)(Unesco, 1970), but also contributes to help them achieve social and cultural literacy. Modern societies require development which in turns leads to the need of obtaining *digital literacy*, too and generally literacy on new technologies. According to Aronowitz & DiFazio (1994), or Hill (2004), the introduction of new forms of literacy has contributed significantly to the understanding of school literacy.

Consequently, *school Literacy* is a priority of the education policy and teaching practice, while the *critical*² and *social literacy* is a necessary aspect of school Literacy. Our intention is to investigate how it is possible for students to acquire all these forms of literacy, making use of all opportunities and developing as many skills and talents they have as Gardner pointed out, through various forms of training, alternative strategies and practices with a view to acquire children language and cognitive skills in a creative way.

1. The Research Project

According to Greek National Curriculum the main purpose of education is to help students fully develop their personality and integrate successfully in class developing their abilities and skills as much as possible sharing values and knowledge which help them develop cognitive skills and emotional abilities (DEPPS; Official Gazette 303B/ 13-03-2003, Official Gazette 304B/ 13-03 -2003).

This therefore means that the state through training and education aims to create strengthened pupils with a large variety of knowledge, strong self-perception, emotional stability, critical attitude and positive mood for cooperation and self capacity. In other words the ultimate objective of state is the creation of personalities responsible, democratic and free from fears and prejudices, with social and humanitarian principles.

1.1 The problematic

The need for this research arose when we found that many students have difficulty in understanding and producing different kind of texts, which reveals that students are not familiar with this type of texts. An amount of students couldn't sufficiently respond to certain kind of texts. Our goal was to find ways of approaching these texts and help children overcome the difficulties in order to get more familiar with these kind of texts, obtain understanding and knowledge of the main elements of their structure and acquire such skills which enable them to cope with these texts creatively, efficiently and constructively. This research project carried out within a school unit and participated in it pupils of C class. The involved teachers all willingly collaborated.

¹ *School Literacy* refers to the ability of pupils to read and write through the procedure of decoding, interpretation and critical analysis of school texts or through the production of student's texts of various kinds in order to build the school knowledge (Matsagouras, 2007: 25).

² *Critical literacy* refers to the ability of student to interpret and review degradation of the text in order to identify the view of the world which manufactures and the social practices that displays the text and also in order to reveal the linguistic methods a text uses in order to find his place as a reader against the social practices and the ideas this text display (Matsagouras, 2007:25).

1.2 The Stages: First Phase

At first we collected information about the kind of difficulties which students faced up in different kind of texts through questionnaires and test self-reference, small interviews, as well as through the observation and recording calendar of critical friend.

Second Phase: data collection- initial findings

When we collect the data, we went on recording and analyzing it.

We found that on behalf of students there is a lack of knowledge on how to organize and build the ideas and how to use suitable words and syntax depending the type of the text that students have to deal. As a result students were afraid to write and showed low self-esteem. As far as the teachers concerned, was revealed a lack of knowledge on the use of strategies in the instruction of various kind of texts, as well as also a lack of knowledge to use tools of ICT.

Third Phase: the main project

After the first findings we were in contact with the students, discussed with them about our intentions, we talked about their educational needs and soon we all signed a teaching contract in order to move on with the project having the approval and thw participation of all the students. The commitment to active and participate in the procedure was unanimous and was welcomed with enthusiasm. So we designed the strategic planning of instruction, we selected the suitable methods and we supplied students with worksheets and self-evaluation forms for each phase of the program. At first we selected the narrative texts.

Teachers, after an in- service training by their School Advisor started the project and often they gathered to exchange ideas, share experiences and evaluate the course of this project and got the necessary feedback they needed to go on. The evaluation through the observation, the recording of any change of student's attitude and the discussions help teachers to organize better their work and their instruction and enhanced them.

It was very important for all to keep the timing schedule of our initial planning we had set and be active during the project.

2. Discussion

For the achievement of our initial objectives was necessary to create such a learning framework and formulate such learning conditions which provide each student the possibility of renewal or enrich knowledge and skills and contribute to the cultivation of critical and creative thinking. We chose the fairy tales and the stories as a vehicle for the achievement of our goals because we believe that the student's engagement with stories appeals to their age and their interests. In addition children's stories help students to be transferred to another space and time, to play, to identify with the heroes, to live their anxiety or face up their problem, to tackle their conflicts and difficult situations and wake up their desires, their emotions and their sensitivity. Moreover students through stories can enrich their language, their experience and cultivate their creativity, through the interpretation of semiology of a story discovering the semantic abundance of words (Anagnostopoulou 2002:78). Children can savor the discovery through the fairy tales, to decode hidden meanings or even find their own meaning in stories (Bettelheim, 1995: 11) through fiction (Hunt, 2001: 124). A tale can fed the imagination of a child and imagination means the development of symbolic function .

The specific nature and structure of stories match with the mental and emotional development of children in primary education, while at the same time as narrative kind of speech contribute to transfer cultural values. The pleasure derived from the narration of a tale can be the basis for the creation of such a pedagogical climate which helps build stronger relationship between pupil and teacher or among students. Furthermore such a pedagogical atmosphere can be the starting point for the triggering of the creative imagination of children. Appropriate activities can help students unroll and reveal the range of their capabilities, especially when these activities include a variety of games which contributes to the students' interaction.

Beside the sociable and communicative role, a tale has in particular and an educative role. Therefore, it's very important for teachers to integrate in their instruction because among others reasons a tale aid students to develop linguistic and written expression.

Moreover a tale, as a narrative text demonstrates a simple structure with accuracy, completeness and consistency.

Each tale story has a basic plot with a beginning, an action and an end and in this way may contribute further to the development of the written form of speech. The knowledge of the components and the elements of a narrative text become indispensable and very useful for the process of communication of children.

Through its simple structure, the simplicity of the style, the repetitions, the rich images, its ideas, feelings, merits it contains, through the quality and the aesthetics and its deep symbols or metaphors a tale can be a springboard for the development of a healthy personality and the vehicle for the creativity of a child.

Taking into account the pedagogical benefits of storybook, we decided to use them because we believe that tales can

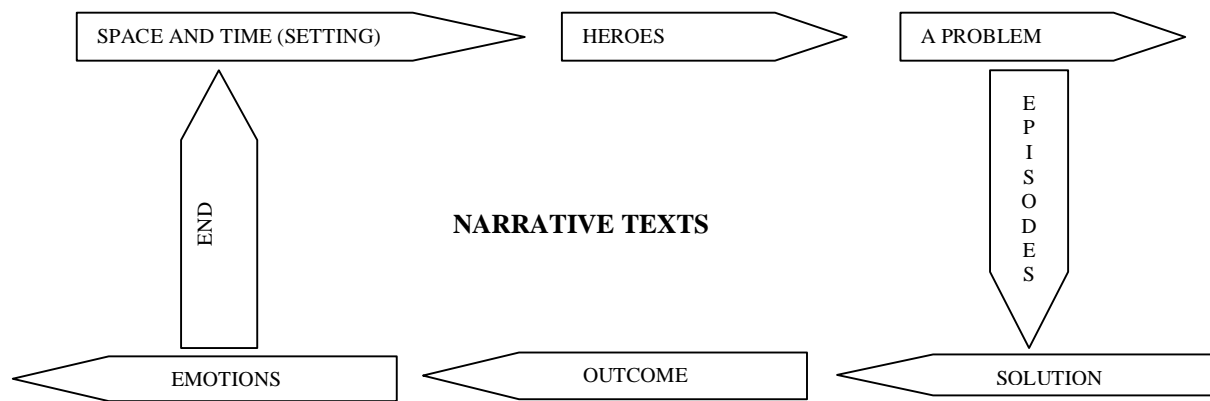
- cultivate children's imagination, give the potential to students to develop as many as possible types of intelligence, according to the theory of Gardner and generally contribute to the achievement of a fully personal development (intellectually, emotionally and socially) of the child and help make pupils literate and creative.
- A tale can set aside the dialog and the linguistic expression, promoting pluralism of views and opinions. Also help pupils enrich their vocabulary.
- it can engage the interest of pupils and move hearts and minds to the discovery of "a personal history", a symbol, a meaning.
- It became the vehicle to bring students in contact with various forms of art (music art events, drama, drawing).
- It contributes to be built strong relationship through co-operation and teamwork.
- It also develops the critical and creative thinking of students and finally,
- it transfers values and merits and at the same time offer enjoys and aesthetic cultivation.

For these reasons we've applied the tale in order to help students to exercise in telling stories, learn about the components of narrative texts, be able to use narration orally or in written form. In the project we have incorporated new technologies, because we believe that the educational benefit of such cooperation is double. Firstly because students will achieve the targets, that is the cultivation of linguistic expression -written and orally. Secondly, because educating students in ICT, help them develop their skills and get familiar with new technologies. In addition we train them cultivate their capacity for critical approach of the new information and communications technologies, which may be necessary in a world where the growth of knowledge and technology is a reality.

Moreover through the pairing of (combination of) literature and ICT we could take advantage of the dynamic interaction of these fields to help students achieve multiple forms and types of literacy (school, social, functional, critical, visual, language, digital, technology literacy, etc.). The familiarity of children with new technologies with the contribution of a tale as a vehicle for achievement of narrative texts, contributes in turn to the maintenance of social cohesion among children by providing equal opportunities and sharing equal chances to students to develop common attitudes and values and get awareness of European citizenship with the simultaneous development of co-operation spirit and team work.

Besides we must not forget that the involvement in writing a text requires a learning of a sort of "technology" with the use of certain materials (such as paper and pencil or word processor), but in any case this process is not a neutral one through which simply transferred information. On the contrary, like reading, writing a text is the result of a complex social process, as well as associated with various social practices, with the overall social dynamics, the various forms and power structures, social class, gender, identity, etc. (Hasan & Williams 1996• Street 1995). Briefly we will present the steps of the main project and will conclude with the evaluation of it. A sample of the work of children in class is given in the site reported at the end.

Initially we narrated a tale "a weird traveller" a book of Filomila Vakali Sirogianopoulou (ed. Patakis). Then through appropriate questions we attempted to analyse the story in order to understand the basic structure of it. Students underlined the key- words and expressed their opinions. So we ended up with the extracting of the basic elements of narrative texts, which can be attributed schematically as follows:



Then we designed the strategies to access narrative texts mounting through alternative exercises. Finally, when all students understand the structure of a narrative story, they draw the pictures, play the story via art drama and find a suitable music for it. With the cooperation of the teacher of Computer Studies, students used the software 'Kidspiration', for the construction of the conceptual map to draw the structural elements of a story. Then, with a program called "Constructing Ideas", an educational tool that helps children to build their story methodically and well organized in such a pleasant and creative way, each child tried to create its own story. In this way all children got familiar with the parts of narrative text in a more pleasant and interactive way. Then they were moved on to create collectively, altogether a digital story using multimedia.

Because elder children are more familiar with ICT, in order to attract more their interest we tried the digital storytelling, which is the extension of oral or written narrative, invested with digital and interactive applications, which can be exploited constructively at all levels of education, with significant educational results.

The digital storytelling can be an alternative means of communication, with duration and continuity. To take advantage however of teaching and effective digital storytelling in modern school, it is necessary and very important for a school to provide those conditions which constitute a sufficient technological knowledge. Moreover it is also significant that teachers are acquainted with new technologies and digital media, in order to use them satisfactorily. In addition, it is particularly important the existence and the use of educational software and tools for narration. This was the reason why we tried to match Language and Educational Technology because we believe that this cooperation will be for the benefit not only of all students (including those with special educating needs) but also of the acquisition of social skills such as mutual understanding, team work, collaboration and co-operation in group teams, development of dialogue, acquisition of creativity.

According to Lathem (2005), the digital narration combines the traditional oral storytelling with the media and the various communications tools, and it is designed to enrich and reinforce the written or the spoken speech. Creating a visual story means to imagine and write the story, to draw the pictures or to select suitable photos/sketches from websites, dress the story with music, sound and video. If a digital story is designed in an appropriate way, enabling students to participate, to act and narrate even their personal stories (Joe Lambert 2002), this task is indeed of great pedagogical importance.

The main advantage of digital storytelling is to ease the delivery of digital media that support the design of instruction. Teachers can use multimedia, which nowadays most schools have (e.g. , computer, digital camera, scanner and systems sound analysis) as well as several software tools and systems or digital platforms, addressed to students of pre-school and school age students (StoryRooms, Alborzi 2000), StorytellingAlice, scratch, STORYBIRD, etc).

With the use of multimedia the educational process becomes more enjoyable and creative, free from the passivity, the habit and the conformism that usually distinguishes it. Students work together as a team, collaborate, decide collectively, interact with each other, develop their creativity and activate all the forces and their skills. In additional ideas and works are experimenting free from the fear of failure or disapproval. This aspect of instruction help students develop digital literacy and review the way of their thinking with the use of multimedia (Semali, 2003).

The story was created by the students themselves, who worked together on the design and integration of digital storytelling in the context of integrating instruction (Language, aesthetic education, music, draw, drama, ICT) and the constructivism.

Students in groups work together creating a story exchanging ideas, thoughts and experiences, choosing the illustration, the images, the music theme and incorporating multimedia to create a digital story which can be seen on the website of the school. The story is transformed to e- book with a special program (Flipsnack).

3. Results

The results of this project which is part of an action research were more than encouraging and positive, as well as:

- Students managed to achieve literacy 95%. After this project, all the pupils got gradually used to narrative texts in whatever forms required (oral, written, digital).
- As far as the understanding, interpretation and critical treatment of the texts concerned, students now recognize the structure of narrative texts and can transform this knowledge or expand it to new forms flexibly.
- Students also achieved many kinds and forms of literacy (linguistic, social, digital, functional, cultural, visual, scientific, media, etc.).
- As far as the use of ICT concerned, all pupils were trained in ICT and learnt how to use it constructively using criteria. Students were trained to navigate with safety in educational digital environments for their benefit to promote their knowledge. They obtained knowledge on media, computer and information Literacy.
- As far as the social skills concerned, students and teachers worked together constructively, they exchanged views, built on experience, found new paths in learning, adopt attitudes and perceptions through arguments and debates, interacted, through a spirit of teamwork, friendly, cooperatively, developing mutual respect.

The most important thing is that apart from the achievement of educational goals, all pupils enjoyed the process by unrolling their imagination and their creativity and cultivating their critical thinking. The use of digital media and ICT has contributed to cultivate positive enhancement and attitudes to all, teachers and students. It is also achieved a better grade of socialisation of students and communication among them, the quality in education is promoted, ensuring the active involvement of all pupils in a variety of activities carried out during the course of the program. In addition all students were motivated as everyone found at every stage of our work something to do according his own interests.

The program has been implemented in the Flexible Zone- a zone in which many programs can be performed- and in the hour of Language and Computer Studies, while any problems and questions or difficulties arose, were overcome quickly with the support of teacher of Educational Technology Studies.

We would like to conclude with the words we started: learning, which takes place in an enriched environment, which takes into account the interests of pupils and is based on modern pedagogical principles and innovative teaching approaches is a creative and successful learning. And a creative teaching, which takes place in a pleasant pedagogical climate, can only be of benefit of the pupil at several levels.

Because: *"The minds of children are not a container to fill; it is a fire to light it up!"*

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