DESIGNING COURSES THROUGH VIDEOCONFERENCE AMONG THREE ELEMENTARY SCHOOLS OF GREECE: A CONSTRUCTIVIST APPROACH

ANASTASIADES PANAGIOTIS [1], THOMA RALIA [2], KOTINIS THANASIS [2], PANAGIOTIDOU LITO [2], PORPODA ARIADNA [2], TYROU IOANNA [2]

[1]Faculty of Primary Education, University of Crete, Greece; [2] Faculty of Primary Education, University of Athens, Greece
panas@edc.uoc.gr, rallou24@in.gr, wonderlast97@yahoo.com, lito@nao.forthnet.gr, aporpoda@yahoo.com, ioannatyrou@yahoo.com

Abstract

This paper presents the way four Videoconferences between three primary schools, situated in different locations in Greece, have been planned and carried out. The main thematic axis of the Videoconferences was "Greece and Sea" with a special focus on "The ship in the life of Greek population". The videoconferences are addressed to senior primary school students (age 11-12). The methodology and the activities used are based on the social- constructivist theory of learning.

INTRODUCTION

The rapid advancement of technology, evident over the last decades, has brought about many changes in our everyday life affecting the field of education as well. The Information Society offers many learning opportunities to teachers and students and its ultimate purpose is not the replacement of the trainers, but the provision of new tools, applications and services. All these are expected to give teachers, among others, the chance to improve their pedagogical approach and practices by establishing a new, open and collaborative environment in education (Anastasiades, 2004). Consequently, changes in the content and the methodology behind the educational procedure create a completely different learning environment rendering open and distance learning the precursor of the changes to come in education (Keegan, 1993). Nowadays one aspect of open and distance learning is videoconference.

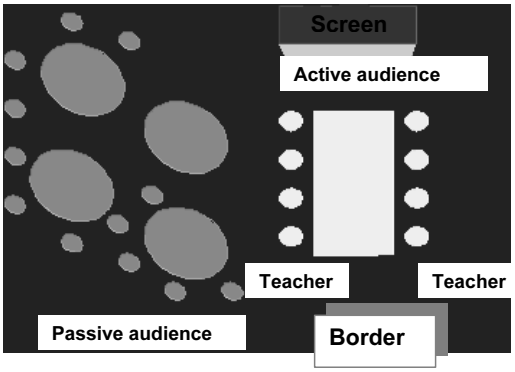
Pedagogical Frame

The teachers in order to plan the four videoconferences took into account the pedagogical approach of constructivism along with the pedagogical theories involved (Raptis, and Rapti, 2006, pp 86-130). According to constructivism, students do not just passively receive knowledge but construct meaning upon their previous experience, personal or social, during their interaction with the cultural agents and tools of their learning environment. Consequently, the process through which students' learning is developed and mediated is of primary importance.

With the use of discovery learning, students actively try to probe into the subject matter until they discover new elements and generate principles of a higher order (Bruner, 1997). Furthermore, with the application of an open-ended problem solving as well as project based method, students develop autonomous learning competences, not through the plain accumulation of knowledge and rules, but through the development of flexible, cognitive strategies in complex as well as a holistic learning environment. Interdisciplinary approaches help students to understand, to observe, to transfer and apply school knowledge easier, to gain global conception of reality and to develop their critical thinking and creativity, skills which enable them to deal successfully with problem situations (Matsagouras, 2004). Empirical research is one of the basic ways in which man explores his environment (Kokotas, Vlachos, 2000) and this can come into effect with students' active involvement in the learning process through various procedures, like observation or participation in activities related to the subject matter. In this way students are able to associate this with their previous experience and everyday life making it an inseparable part of their daily life.

Collaborative learning (i.e. jointly working on a specific subject), on the other hand, promotes decentralized, dynamic and distributed knowledge building while intercultural relationships and contact with different cultures and ideologies are enhanced. What is more, self confidence and social negotiation of meanings increases, educational motives arise and skills related to organizational and cooperation issues in group work are further promoted. Distance cooperation educational technology, in particular, opens up new opportunities for expanding collaborative work and developing new kinds of learning communities. (Dillenbourg, 1999, O'Malley, 1995)

The technical Requirements of the system for all school units are: 2 ISDN lines, teleovision, videoconference camera, video, computer and telephone. **The layout of the classroom,** as shown in the picture below, is arranged in a way that facilitates the whole process. The audience is divided into two groups. The first group is the active audience which presents the subjects while the second one is the passive that attends the whole procedure. Both the camera and the screen are situated opposite the active audience.



INSTRUCTIONAL METHOD

Three schools situated in different areas in Greece collaborated by distance in order to implement the four videoconferences. What those schools have in common, is the fact that sea and ships have played and still play an important role in the history and the life of the people. More specifically, the three schools, located in cities with long history in shipping, where: the 11ο elementary school of Piraeus, the 14ο elementary school of Volos and the 4ο elementary school of Syros. Based on specific instructional methodology (Anastasiades, 2003) four videoconferences were designed as follows:

In the first videoconference, the "acquaintance videoconference", students from the different schools get acquainted by presenting to each other their home town and schools. In the second videoconference, "virtual class", the teachers teach to a virtual class which includes students from all three schools. Few minutes before the end of the videoconference a bridging interconnection to the third videoconference takes place. During the third videoconference, students form groups consisted of students of all three schools (fraternization). Each group uses the videoconference system. In the fourth and last videoconference the fraternized groups present their assignments through asynchronous communication (email, chat, forum, etc).

Implementation of the videoconferences

1st Videoconference: Acquaintance Videoconference

In order to create a pleasant environment for the students and "break the ice" at the first awkward moments of the procedure, schools mutually exchange packages containing characteristic products of each area ("package of acquaintance"). Students use their imagination and creativity in order to prepare them and therefore get personally involved.

The pupils create PowerPoint files presenting their region, their school and the students in their class. These presentations (25 minutes each) are accompanied by songs, sketches and dances. Through the preparation of their presentations, students communicate, socialize and develop their critical thinking and creativity. During the 80 minutes of the videoconference, students get to know each other better while a positive attitude towards cooperation and a friendly atmosphere are established.

2nd videoconference: Virtual Class

The six teachers of the three classes teach the lessons based on the "Song in the new ship" by Zacharia Papantoniou and the country poem named "Gone with the ships", both taken from the second part of the book "My language" addressed to students attending the sixth grade of the primary school. All six teachers take part in the lecture. More specifically:

Introduction to the topic: Students from both sides discuss with teachers over the pictures that appear throughout the lesson and make assump-

tions about the content. (Teachers from the school of Piraeus). Use of various teaching aids and dialogic discussion are fostered. Under such conditions, students' critical thinking is activated and collaboration between them is encouraged. A few words about the writer, Zacharia Papantoniou, and some of his works which are probably already known to the students, as well as about folk songs and their subcategories will follow. (Teachers from the school of Piraeus). In this way students' background knowledge is retrieved and already known data and information are associated with new clues. Teachers read aloud the text while students try to pick out the characters involved in each text. (Teachers from the school of Volos). Through associations, assumptions and explanations students will be able to develop their critical thinking.

Students' first reaction to the texts: Discussion about the accuracy of their primary assumptions on the subject of the two texts is being initiated. (Teachers from the school of Volos). Through questions posed by both the teachers and the students, the latter will express their opinions and their assumptions, will interact and will possibly activate any background knowledge and previous experiences in order to develop their critical thinking.

Comprehension questions:. With the method of dialogic learning, students are able to transfer thoughts developed in the classroom to situations and stories they already know, activating at the same time the emotional factor. (Teachers from the school of Syros). At this phase, discovery learning is being processed, while at the same time, through the work sheets (common for all three schools), they do their assignments through writing as well as through various playful activities or through discussion. What is more, one of the main goals of the solving problem method is achieved; that is, promotion of in-depth learning so that students can reach higher levels in a motivating social atmosphere.

Towards the end of the 2nd videoconference, bridging between the 2nd and the 3rd videoconference occurs. Based on the students' answers given on the work sheets, teachers initiate a discussion, so that main topics, on which students will work on during the next videoconference, will arise. The teachers' role at this phase is guiding and coordinating.

3rd videoconference: collaboration by distance – Separating in groups

Students are divided into 6 groups of 4. Fraternization of the groups of the three schools follows. From now on each group consists of three subgroups (which means that 6 groups of 12 children each will be formed). Students are given the necessary time to tele-collaborate (about 13 minutes). During this time they coordinate themselves and reach a shared decision about the way of approaching the subject they are going to choose and the way of working on this. While the active group discusses, the passive audience takes under consideration and processes the ideas of the active group while at the same time they try to propose any further ideas they come up with.

Students' assignments must be interesting and innovative as well as based on their own experiences. They should urge students to search and gather information and audiovisual material, which will be further critically evaluated. Possible topics on which children can work afterwards are:

- The ship throughout the ages of Greek history
- The ship as it appears in the Greek mythology
- Sea and ships in the creative literature
- Sea and sailing though traditional and modern music
- Occupations related to sea and ship
- The ship in Greek mythology and mythic heroes
- Sea and ships represented through painting

The suggested instructional methodology is mostly based on the interaction between students and their innovative ideas as well as on their positive attitude towards group collaboration maintained not only in the local class but in the distant one as well. Therefore, it is expected that knowledge will be developed through experience, problem situations will be worked out or solved, students' work will be presented with multiple-representation alternative modes and finally children will have the chance to delve into the subject by using exploratory and detective methods. Students exteriorize their ideas and proposals, collaborate, dispute, search for alternative proposals, negotiate the knowledge they will work on and evaluate the whole process in which most of the personality domains can be activated.

4th videoconference: Cooperation by Distance – Presentation of students' work

The 4th and last videoconference is of great significance for the students since they will try to do their best and convince everybody about the result of their work. The time-schedule which has to be followed during the videoconference, allows 10 minutes for each group of the 3 schools. Therefore, students' presentations must be brief and substantial. With critical and active disposal students conclude their thoughts, proposals and materials. In the end of the videoconference teachers and students discuss and try to reach some conclusions concerning the use of the videoconference as well as the results of the students' work.

CONCLUSIONS

As far as the use of videoconference for educational purposes is concerned, we consider that caring out a videoconference, as long as this is appropriately designed, can be beneficial not only for the students but for the whole learning culture at school as well. First of all, students are further motivated due to the use of ICTs' and because they feel that they must give their best in order to make a good impression to the distant schools' students. Moreover, the fact that they have the opportunity to interact with students from different schools and learn about their way of living and thinking, contributes to the development and maturation of their social personality. Working in groups helps them develop the skills necessary for collaboration, which are useful not only in their school life but also later on in their social life. What is more, engaging in investigation activities helps them improve their critical thinking, their decision making and problem solving skills as well as their computer skills (using computers, effectively searching information on the internet etc). The practice of active learning facilitates the retention and construction of knowledge while it increases their intellectual and emotional abilities. Furthermore, videoconference is expected to familiarize students with various new technologies preparing them for the information society. Finally, topics are approached through a scope of different pedagogical methods in combination with advanced technological tools, applications and services in a collaborative - interactive as well as an open and motivating learning environment.

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