VIDEOCONFERENCE IN PRIMARY SCHOOLS: FROM THEORY TO PRACTICE BASED ON THE PRINCIPLES OF CONSTRUCTIVISM

Anastasiades Panagiotes [1], Kosmidou Ioanna [2], Panagopoulos Konstantinos [2], Balkizas Nikolaos [2], Milonas Dimitris [2]

[1] Department of Primary Education ,University of Crete, Greece, [2] School of Primary Education ,University of Athens
panas@edc.uoc.gr, iokosmidou@yahoo.com, kopanago@yahoo.gr, nikbalki@sch.gr, dmilonas@primedu.uoa.gr

Abstract

This study refers to the design and application of a series of videoconference sessions focused on the topic "Sea and Ships", which is one of the modules taught in the context of the Greek language curriculum of the last grade of Primary School in Greece. The educational design approach of the videoconferences presented in this paper has been based on a holistic, interdisciplinary approach which aims at creating a Hybrid Learning Environment that combines harmoniously face-to-face teaching with the use of distance learning technology.

EDUCATIONAL CONTEXT

The theoretical framework of the present study is based on the cognitive theories of constructivism and the sociological and cultural approaches of Vygotsky and his successors, according to which special emphasis is given on the process of learning, the cognitive tools and its facilitative situational factors (Jonassen 2000) as well as ïn the interaction between the parties involved and the sociological and cultural environment in which learning takes place (Vygotsky, 1978). According to the basic principles of constructivism, the students' pre-existing knowledge plays a determinative role in the construction of new meanings (Ausubel, 1960). Learners' prior knowledge is the foundation on which further knowledge is built up through the mediation of the learners' active interaction with the learning environment. (Novac, 1991). According to Vygotsky's view (1978), on the other hand, this process is mediated by the social facilitators of knowledge (teachers, fellow students, other experienced people) by providing them with various cultural "tools", stimulating social contexts and interactions as well as some suitable instructional "scaffolding" which helps their moving onto a higher "zone of proximal development" (Vygotsky, 1978). This global phenomenon has also been approached from the perspective of the Activity Theory according to which students, teachers, learning tools, learning material, authentic situations and internal motivation are interacting and constitute parts of an activity system. Activity iself, as a whole, is the mediating factor, the analytical unit of the learning process (Jonassen 2000). Critical pedagogy theories add some political and social meaning to this process as well, since they give emphasis on "critical-reflective thinking, participative and collaborative learning as well as on integrative approaches to knowledge focusing on the social and cultural dimensions of education too." (Makrakis, 2000).

Technological Framework: **The particular technological model per school unit is supported by:**

- ➢ 3 ISDN lines
- ➢ 1 internet connection
- ➢ 1 telephone
- ➢ 1 television
- ➢ 1 videoconference camera
- ➢ 1 video
- ➢ 1 PC

The Communication Model: **The communication model implemented is model (A) of the U.S.A. Maryland University that is presented in figure 1 (Anastasiades, 2003):**
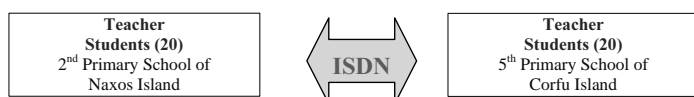

Figure 1: Model "A" of the U.S.A. Maryland University

Communication and structural setting: Each classroom is divided into active and passive audience groups (Picture 1). Active is the audience participating in the videoconference and takes turns with the passive audience during the videoconference. Students form cooperative groups which are self-coordinated and supported by the teachers of both schools.

THE TEACHING MODEL

The methodology of this study is developed and presented in three phases (Picture 2): a) Letting distanced classes get to know each other.
b) Virtual classroom c) Videoconference (Anastasiades, 2003).

Course Implementation

Four videoconferences were planned in the context of our teaching:
1st Videoconference: Acquaintance between classes
Objective. The purpose of the first Videoconference is for the students in the two classes to get acquainted.

Implementation. For this purpose, each school prepares a presentation before the videoconference according to the following topics: my place, my school, my class. A warm atmosphere and spontaneity – an element crucial element for starting a distance communication – is fostered by the both teachers. In this stage, students familiarize with the Videoconferencing process, get to know the other class's students and teacher, plan and realize cross-thematic and highly experiential activities.

In particular, the 2nd Primary School of Naxos went through the following steps in its presentation:

1st step: Presentation of the islands of Cyclades through mythology, prehistory and history, until the time they were united with the Greek state up to the point of their current development. Traditional island songs and videos are played.

2nd step: Presentation of the island Naxos with reference to the island's course through centuries. Pictures illustrating unique characteristics of the island (mountainous villages, coastal villages, churches, local architecture) and special reference to some of its high quality products (cheese, citron, etc). Traditional island songs and videos are played.

3rd step: Presentation of the 2nd Primary School of Naxos with information and sharing some experience regarding school, exhibitions and concerts.

4th step: Presentation of the participant groups' assignments as well as of some research data that reveal the students' hobbies and favorite subjects accompanied by illustrations, charts and discussion.

The 5th Primary School of Corfu Island presentation was as follows:

1st step: Presentation of Eptanissa islands. Pre-history, ancient times until the Venetian occupation. Multi-modal presentation of the islands' culture.

2nd step: Presentation of Corfu. Geography, History, Customs (Corfu Carnival, Easter ceremonies, dramatization in the open, local music bands etc). Pictures of Corfu, gastronomical and traditional products are displayed and local traditional songs are played.

3rd step: Presentation of the 5th Primary School of Corfu through information and photos concerning the school's events and activities.

4th step: A video presenting students' expression of ideas and evaluation of their experience concerning their participation in the videoconferences. In order to perform their tasks, students used a presentation software.

Time schedule: The time schedule of this conference is similar to the ones following below:
0': Introduction:
30': 2nd Primary School of Naxos (presentations, conversation, activities)
30' : 5th Primary School of Corfu (presentations, conversation, activities)
10' : Linking ideas - Introduction to the topic of the next videoconference –

Termination of videoconference

2nd Videoconference: Virtual Class Phase
Objectives and Implementation: The purpose of the 2nd Videoconference is to introduce students to the main topic, which is Ship and Sea, and to help them elaborate their ideas and proposals concerning their collaborative work. This process involves brainstorming and mind-mapping, con-

ceptual analysis of the topic, specification of the thematic axes under examination and illumination, as well as the organization of their activities

Instructional aims: The main general aims of this project were: Allowing the students to:

- get control over their knowledge content and process
- providing them with suitable tools and support for enhancing their own interests and learning strategies, investigate data, negotiate and share knowledge with each other
- Approach cross-thematic knowledge in their own way through multimodal task representation and communication
- Giving them an opportunity to work together in groups in an unusual way and to develop collaborative, communicative and self- presentation skills (Raptis & Rapti, 2006)
- Offering students the opportunity to be familiarized with new ways of communication and work as well as develop skills related to ICT.

Cognitive objectives: Students are expected to:

- Learn about various kinds of ships, the role that sea and shipping has played in the development of Greece throughout history
- Have the opportunity to develop language and expressive skills. Develop an interest in visual arts and mythology
- Get in contact and appreciate their cultural heritage
- Spot, in various sources, select, organize and present to a distant audience information concerning historical, geographical, environmental and cultural aspects of their local society in an appealing as well as in an informal way.

Procedure-material in use: An electronic presentation, developed by the teachers, serves as a starting point for activating students' aesthetic improvisation in a multi-sensory way. At the beginning, there is only music ("Thalassa" (Sea) by Stamatis Spanoudakis). Students are invited to recognize the sound of the sea they are listening to, close their eyes and let their mind free to create images. Then, they are presented with some paintings and photos related to various marine and shipping representations. The presentation ends with another extract from Elytis' poem accompanied by a photograph of him. Students manage to associate the picture, the music and the poet and guess the poem's title.

Text analysis: a) Presentation of the poem, b) Clarifications, questions etc c) topic, reading comprehension, completing work sheets d) Suggestions on the poem's ideas, messages e) Quality characteristics of the poetic discourse f) Remarks on metrics, g) Selecting music soundtracks for the poem h) choosing pictures from which students get inspired to write down their thoughts, feelings, experience and visions.

Time schedule: (This conference follows a timetable similar to the previous one):

3rd Videoconference: Tele-cooperation, Step A

The purpose of the 3d Videoconference is to involve students in distance cooperation regarding topics they wish to work on and present next time

Procedure. In the 3d Videoconference, students are divided into 4 groups of 5 persons each, according to the unit of the topic they have chosen to present in the next session (Step b). Each group in local and distanced class has 10-12 minutes available to discuss from distance some initial ideas and reach at some conclusions. The students in the passive audience follow the conversation, share ideas and intervene to help the active audience. Finally, assignments are given to the groups:

1st group. Research for photographic material and presentation of the historical development of ship (Research visit to a marine e-museum).

2nd group. Research for paintings that depict ships in relation to historical events which Greeks have experienced and creation of a journal concerning their search as well as their attempts to "read" these paintings.

3rd group. Research for poems and traditional folksongs focused on ship and presentation of audiovisual and multi-disciplinary material.

4th group. Ship and Mythology (the students must search for myths related to ships and paint a picture).

Time schedule of the 3rd Videoconference: This conference follows a similar timetable to the previous one):

4th Videoconference – Tele-cooperation, Step B

Objective. The purpose of the 4th Videoconference is to help students to present their assignments from distance in groups and promote discussion

Implementation. During the 4th Videoconference the students present their assignments. Each group gets 15´ and has a choice on their favorite mode of presentation (theatrical, presentation, visual, in writing).

Timeschedule for the 4th Videoconference. During the last videoconference, time was given for a) An introduction (5'), b) Group cooperation, presentation and discussion (60': 15' x 4 groups), c) Brief highlighting of experience and reflection on leaning outcomes. (5') and d) Brief farewell ceremony and termination of the videoconference (10')

CONCLUSIONS

According to the participant students' evaluation, the benefits they gained from the whole experience were numerous and varying. In their own words, the young students pointed out the factor of their active engagement in an unusual learning environment (teleconferencing) which has contributed to the fulfillment of their expectations. Another interesting finding was the students' appreciation of and preference for multimedia tools as a means of instruction, work and presentation, especially in the case of expressive literature teaching. What they stressed more, however, apart from their cognitive gain from their interdisciplinary, collaborative work, was their satisfaction from the tele-communicative and social elements of this rather informal educational environment where self presentation, local community presentation, and humorous conversations could go together with official school work and academic achievement. A lot of pupils shared the opinion of Kostas, a student from Korfu: "Trying to make a good presentation of our place in front of these people was more interesting to me than trying to get good marks from an examination. I got a lot of stress but at the end I was satisfied". This rather general agreement with similar opinions coming from our participating students is consistent with the findings of a research on the distance cooperation of three schools which was carried out in Cyprus (Hambiaouris, 2005).

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