VIDEO GAMES AS AN ALTERNATIVE INSTRUCTIONAL ENVIRONMENT FOCUSING ON LANGUAGE ARTS: ISSUES OF RESEARCH AND IMPLEMENTATION

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Abstract

As far as the use of computer games in the classroom is concerned, there is a growing literature showing that such attempts have already been made by educators for various purposes. All of these attempts suggest some different perspectives of how video games may be used for educational as well as for entertaining purposes, but most of them lack to a great extent pedagogic and methodological foundation. Our proposal is based upon a process by the end of which learners would have developed some linguistic and communicative skills considered as important objectives of the curriculum through playing and having fun while being engaged in activities that meet cognitive needs of higher order.

DESCRIPTION OF THE PROJECT

Playing games is an important part of our social and mental development. The advent of personal computers with superior graphics systems has precipitated an explosion in game software. Hence, it has become increasingly important for game developers and educators to study the application of computers for enhancing renovating goals of education of our post- industrial era.

In the current research we approach video games implementation aspects focusing upon video game design and the course of Language Arts. Instead of merely playing games, we opted for a more constructivist view of authentic language development by calling our students to act *as video game designers* who take part in a cooperative project (Cognitive apprenticeship model), by the end of which they will have developed cognitive skills considered as some of the fundamental aims and objectives of the official extra curriculum Course Syllabus (Called "Flexible Curriculum Zone"). Moreover, undertaking such a project will offer the opportunity to educators to meet aims some of the demands put by this course such as:

- Develop experience in cross thematic curriculum development
- evaluate the skills developed by student through the application of the new instructional material and apply reparative instruction, if needed,
- offer students the chance to develop other important skills (collaboration, mind mapping, decision making) through processes of playing and fun
- offer students an integrative and authentic framework in which cognitive skills will be developed in a less fragmentary way.

Aspects of the new instructional material for Language Arts

The new instructional material is based upon the Communicative Approach or Communicative Language Teaching (Galloway, 1993) and focuses on text-oriented teaching approaches. In the last decade, research indicates an explicit tendency (Cope & Kalantzis, 1993) for text production and processing to be integrated into wider communicative activities (Fterniati & Spinthourakis, 2004). Textual competence is enhanced through

various strategies students attempt to use depending on the subject, the purpose, the audience and the text type they need to produce and not through grammar and vocabulary exercises or rules (MacArthur, Harris & Graham, 2004). However, there is a need for finding out ways of overcoming traditional, de-contextualized instructional settings as well as take advantage of the appeal new technologies' have to students for the sake of pursuing cognitive, linguistic and personality development goals.

The development of software tools allowing children to digitize their project should be the next step of multimedia content creation software (Kollias, et al, 2004). The software packages available have either minimum capabilities or drill and practice characteristics, or demand difficult for a child programming skills.

Some of the aims of this pilot study (apart from those having to do with an extended doctoral research under progress) *are*:

- acquiring useful experience and data for improving the methodological designing of our main research in progress
- evaluating certain methodological tools as well as trying out innovative models of instructional methodology and handling complex work environment
- gaining constructive experience and systematic trial of certain video games software development

Video game designing. One of the main targets of our research refers to our proposal of video game designing. Video game design should be viewed as '*a process by which a designer creates a context to be encountered by a participant, from which meaning emerges*' (Salen & Zimmerman, 2003). To be a designer one also has to be aware of the structural elements of games such as (Avedon & Sutton-Smith, 1971): purpose of the game, procedure for action, rules governing action, number of required participants, results or pay-off, abilities and skills required for action, interaction patterns, physical setting & environmental requirements, required equipment.

Taking under consideration the above structural elements, the act of design may comprise the following stages with a description of the corresponding tasks the working groups had to accomplish during the project (See table 1):

Table 1

Game Design Stages	Text & Discourse Types
▪ ***Script writing***: determining and writing the story unfolding in the game or the game's main theme	▪ descriptive informative text – fictitious scenario outline- Narrative text –Mind mapping,
▪ ***Character creation***: determining, describing and creating from scratch the main game characters or choosing from existing ones	▪ Mind mapping, descriptive informative text – character building and description
▪ ***Scene setting and direction***: the places – real or imaginary - where the game takes place	▪ descriptive informative text – visualizing scenery and landscape, imaginative description, audio-visual material
▪ ***Plot***: how the story of the game unfolds, what the player must accomplish	▪ explicative text – task instructions (recognising a number of drawn out acts) ▪ interpretative and argumentative text – task specification and instructions (directions setting a given time schedule)
▪ ***Game rules***: setting the context in which a player can act in the game, conditions of victory or defeat, what is permitted and what is not.	▪ informal outline, notes and tables ▪ explicative text – task instructions (recognising a number of drawn out acts) ▪ explicative text – task instructions (set of directions that follow a given chronology)

METHODOLOGY

The current pilot study follows the same philosophy and methodology with our main collaborative action research (see Kemmis & Taggart, 1990b), on a 23 K-12 students' sample. In this research an educational project is under study and grounded theory analytical techniques (Glaser, Strauss, 1967) have been employed. This project provides students with some means of designing a computer video game in Language Arts in a facilitative context. The guidelines of the "Course Syllabus for Greek Primary Education" have been taken into account.

The material used throughout the conduct of the project consists of four video games 'making of' videos, several video games and other music soundtracks, several video games trailers and cut-scene videos, a collection of sound effects used in video games, children comic books and magazines, websites, encyclopaedias and bibliography related to the subject and a video creation software[1] . The tools used for obtaining the data consist of teacher and team diaries, worksheets, conceptual maps, audio-visual material, team binders.

Application The application of the project consisted of:

1. Announcement of the project and appointment of the specific subject
2. Working groups assessment (team synthesis)
3. Pre test activity
4. Task assessment for every team, including the definition of the individual team member's role according to his / her aptitudes
5. Task scheduling
6. Material acquisition and use
7. Team evaluation and self-rating on a regular basis
8. Post test activities
9. Final evaluation

Sample: In the current research, 23 upper elementary students (12-year-old) of the 'Modern Greek – English Education' private school participated.

The participants were asked whether they wished to participate in an activity which aimed at adopting a different approach to the course of Language Arts, while they were notified that the current activity did not concern their performance in the course, so it was not going to be taken into account for their grading by any teacher. They were also informed that this year they were going to form expert groups and so, they were likely to choose their personal field of expertise. The expert groups created were three, one for the development of the story (5 students), one for the development of the characters (6 students) and one to cover all the art and design aspects (4 students). The expert groups were created after the appointment of the specific subject, which would be the design and development of a video game under the title 'The Lost Island'.

The students who didn't desire to take part in the project (8 students) were offered the alternative to form the editorial board of the school newspaper and functioned as a control group. Both the participants and the non – participants were instructed on the text and discourse types from the new instructional material for Language Arts. Both groups were given a 'pre-test' activity: they were given five key words (island, castaway, criminals, treasure and jungle) and were asked to create a descriptive and narrative text.

The 'post-test' activities consist of two different kinds of worksheets, one for the 'designers' and one for the 'players', and the 'pre-test' activity as well. 'The Lost Island' video game consists of seven episodes. All the students played in turns four of the episodes and had to write a short informal informative text (notes) for each episode, as well as a descriptive informative text (summary), combining the four episodes into one coherent story.

FINDINGS

The findings may be briefly reviewed in the following categories:

Concerning collaboration & team work:

- All students showed sufficient understanding of how teams should work and wrote a list of how the team's members should deal with tasks and problems.
- All three groups made their decisions using voting for every issue.
- None of the groups assigned a leader, but 2 of the teams assigned a coordinator of their project.
- All the problems that occurred were solved through negotiation.

Concerning task scheduling and application:

- Two of the groups created a schedule of the tasks to be carried out, based on what they decided is needed to create a game and on the given deadlines.
- The strategy of the two groups was based on collecting all data possible and proceeding to division of tasks.

Concerning knowledge and skill acquisition (pre and post test evaluation):

- The variation between pre and post test analysis of the non-participants' data is almost negligible. (The texts of only the 2 out of 8 students showed some mere improvement, according to the evaluation of external examiners).

[1] "3d Game Maker" was used as the video development tool. Website: http://t3dgm.thegamecreators.com

- On the other hand, the two expert groups, i.e., the one for the development of the story (5 students) and the one for the development of the characters (6 students) showed great improvement after the evaluation of the tests: 8 students' responses in the post-test activity was remarkable (the rest 3 students of the same group had already achieved a high degree of textual competence before the project was undertaken). The third expert group did not arrive at such a high level of competence as they were not given the opportunity to work on text and discourse creation. However, they did show great improvement, from the aesthetical point of view, in which they tried to develop their " expertise"

RESULTS

Generally speaking, the whole process resulted in: (in terms of collaborative work in the classroom):

- Advancing the quality of students' interactions as well as their affective and imaginative experience on carrying out complex and creative learning tasks
- Offering a context where multiple text and discourse types could be produced at the same time in a highly authentic, motivating and holistic environment
- Advancing certain students' skills, like communicative and writing skills, strategic thinking, brainstorming, concept mapping, argumentation skills
- Critical thinking towards video games and their impact on children behavior
- Making learning process more enjoyable and fun

CONCLUSIONS

- Educators can benefit from the appeal and access computer games are gaining to the children's minds to facilitate students' advancement of several cognitive, social as well as personal development.
- Moreover, teachers willing to overcome specific problems that hinder educational practice, may find that video games can become unique tools of learning for the next generation children, provided that certain pedagogical principles have been met .
- Video games offer opportunities to educators to create contexts related to the students' needs or interests and thus they can overcome several obstacles deriving from traditional instruction practices
- Projects like this one may be of great help to educators in Greece who try to meet innovatory aims of the 70 hours extra curriculum Course Syllabus they are engaged in without having got much support from the official educational system (Such projects are officially welcomed in schools by September 2006)

Finally, it seems that the development of software tools allowing the children to digitize their project could be the next step of multimedia content creation software. As there is a scarcity of available educational software accompanied by pedagogically consistent learning scenarios, this innovative field of educational design creates new challenges to contemporary, active educators.

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