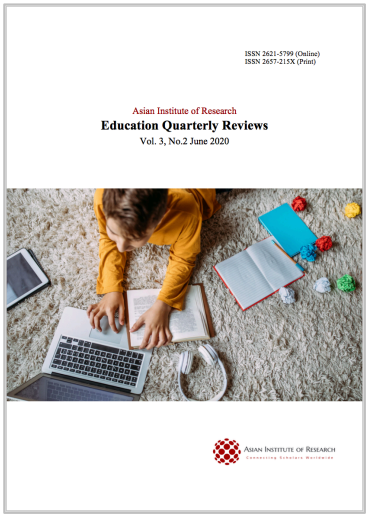


# Education Quarterly Reviews

**Kolyvas, Spyros. (2020), Innovative and Collaborative Learning in Visual Arts with the Use of Modern Educational Software. In: *Education Quarterly Reviews*, Vol.3, No.2, 194-200.**

ISSN 2621-5799

DOI: 10.31014/aior.1993.03.02.131

The online version of this article can be found at:
**https://www.asianinstituteofresearch.org/**

Published by:
The Asian Institute of Research



The Asian Institute of Research *Education Quarterly Reviews* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of education, linguistics, literature, educational theory, research, and methodologies, curriculum, elementary and secondary education, higher education, foreign language education, teaching and learning, teacher education, education of special groups, and other fields of study related to education. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Education Quarterly Reviews* aims to facilitate scholarly work on recent theoretical and practical aspects of Education.

Asian Institute of Research
Connecting Scholars Worldwide

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Education Quarterly Reviews
Vol.3, No.2, 2020: 194-200
ISSN 2621-5799

DOI: 10.31014/aior.1993.03.02.131

# Innovative and Collaborative Learning in Visual Arts with the Use of Modern Educational Software

Spyros Kolyvas[1*]

[1] Art teacher, Visual artist, MSc 1; kolyvas0@gmail.com

Correspondence: kolyvas0@gmail.com

**Abstract**
The aim of the educational scenario is to create an innovative teaching proposal in the Class of visual arts for the pupils of the last two classes of the elementary school. This teaching proposal escapes the strict framework of the school program and proposes a holistic approach to knowledge. Its application requires the use of new technologies, which contribute particularly to the design and implementation of educational scenarios where the student takes an active role in the framework of the teaching act. The use of new technologies in both the process of seeking information from the student and the use of modern digital tools and educational software fosters collaboration, excites curiosity and creativity through which they develop critical thinking, which must be at the heart of learning. The didactic results of this teaching proposal are derived from the teacher's diary and the students ' questionnaires and are of special value both during the feedback phase and in the future design of scenarios. The future uses of the micro-script by teachers who teach the course of visual arts will offer valuable observations for improving it.

**Keywords:** Educational Script, New Technologies, Collaboration, Innovation, Art Education, Critical Thinking

## 1. Introduction

The content of this educational script is compatible with the curriculum of Visual arts in Greece elementary school. The cognitive objectives and the skills of this scenario are basic goals of the visual course. This micro-scenario is a differentiated teaching method that facilitates active learning by aiming to improve learning effectiveness and the teaching and learning process. (Zhu, Wang, Cai & Engels, 2013). The experience of the work of art by children through the analysis of its structure and composition leads to liberating creative activity (Brandon, 2004). The activities of the scenario involving the use of ICT are developed in the computer lab so that pupils divided into groups

[*] About the author Spyros Kolyvas holds Intergrated master from the Athens School of Fine Arts Greece (1999) and MSc from the Hellenic Open University (2018). He also holds BA from the National and Kapodistrian University of Athens, Department of Theology School (1992). Mr. Kolyvas has received national scholarship and prize of his study in the Athens School of Fine Arts. He is a member of Visual Chamber of Greece. He works as a visual arts teacher.

of three people can work effectively with the available computers. Activities such as painting, discussion, etc. will be developed in the classroom (laboratory) where the desks are separated per groups in a circular layout to facilitate the interaction and active participation of pupils. With regard to prerequisite knowledge regarding ICT, students already know the word processor and (power point) after they have been taught in computer science and the program of creating digital exhibition spaces artsteps.com As well as the use of Wikipedia and the Wiktionary tools they have already used in the visual class.

The activities of the micro-screenplay were attempted to be drawn up in accordance with the principles and spirit of the theory of constructionist, where students are invited through group collaborative learning to discover new knowledge. Learning takes place in certain cultural contexts through a trim relationship. Interaction of students with a teacher, students with classmates and students with medium. The teacher's role is guiding **(**Christensen, Horn & Johnson, 2008). It also provides the student with the means to facilitate the search and conquest of new knowledge. The teacher through the structure of the teaching module and the targeted questions in the worksheets stimulates the student to active learning (Ferrari, Cachia & Punie, 2009: 47, Jacker & Lockman, 2000). The teaching is not based on a linear transmission of matter but starts from a student's choice project and with some questions it helps the student to process the work, to associate it with knowledge that it already possesses (previous lesson modules, experiences) to penetrate it and create its own work (Jacker & Lockman, 2000). The teacher assists the student with specific pedagogical options and practices to exploit the available resources by discovering "self" knowledge. With regarding to the use of the new tools, detailed instructions are given to the worksheets in order to facilitate the pupils in their proper use and to achieve their pedagogical utilization. We must not forget that the tool is a supportive means of achieving the learning objectives and not an end (Jenkins, 2006; Livingston, 2012). Higgins, Xiao & Katsipataki (2012) report that the research data of the last 40 years on the impact of digital technologies for consistently identify positive benefits.

1.1. Innovative educational activities

Innovative actions are an effort to introduce modern pedagogy and technology through alternative classroom teaching methods (Kozma, 2003). Innovative actions aim at creating learning mechanisms with new strategies and aim at developing the student's creative abilities (Ferrari, Cachia, and Punie, 2009). Current teaching methods often disregard creativity and may stifle it (Ferrari, Cachia, & Punie, 2009: 47, 48; Mynbayeva, Sadvakassova & Akshalova, 2017:16; Serdyukov, 2017: 8). Modern perceptions of the complexity of Gardner's Intelligence (1993) and Fullan's (1991) theory have helped to develop new learning mechanisms, which argue that educational innovation focuses on actions that involve and promote new perceptions of education in three dimensions: a) change of principles and beliefs; b) application of new teaching approaches; and c) use of new teaching methods. Innovative educational actions give the possibility of an alternative pedagogy where it can help improve cognitive ability and the production of new knowledge by the student (Brandon, 2004). The need for creative education and innovation highlights the research findings in recent decades where teachers in the overwhelming majority want to change the way of teaching towards more creative methods and applications to produce knowledge (Andreadis, Athanasiadis & Dodontsis, 2012; Papapanagoy, 2006).

The application of the principles of exploratory learning using modern teaching tools and materials creates attractive and effective learning environments that lead to the improvement of Learning (Crook, 1998; Kaklamanis, 2005; Zhu et al., 2013). An innovative program is basically a profound incision in the change of mentality and culture. In Germany, as early as 1975, the first alternative schools began to operate in which the holistic personality of each child is promoted and where learning is a means of liberation in order to understand and cope with the child's daily life (Yiagkounidis, 2017). The aim of this teaching proposal is to change the mindset and culture in order to give students more space for active action in combination with the use of modern school technology and modern educational software. The use of new technologies in the learning process supports learning and provides a more interesting and enjoyable learning environment for students (Jenkins, 2006; Livingstone, 2012: 11; Passey et al., 2004). In the new learning model, the student plays a central role, while the teacher plays a role in guidance and mediation (Christensen et al., 2008; Ferrari et al., 2009: 47, Jager & Lokman, 2000).

1.2. Collaborative Learning

Collaborative learning leads to the discovery of knowledge through practice. Students, through social interaction, with their classmates, teachers, and the broader context of social support, build their own spiritual world, based on old knowledge and experiences. Collaborative learning environments, such as wikis, allow students to learn together, share knowledge and collaborate on problem solving. Collaborative environments are directly linked to the concept of social building. Computer-aided collaborative learning (CSCL) is particularly suited to fostering student-led dialogue and deepening and expanding these dialogues (Wegerif, 2004).

**2. Teaching goals - expected outcomes**

- To exercise students in the use of appropriate terminology in the description of works of art.
- To experience the artistic language of the artwork in an experiential way.
- To realize that the plastic elements of the artwork (shape, color, texture, space, etc.) are the visual language of the project.
- To exploit what they experienced from their contact with the board in a personal way through the creation of a new project.
- To realize that artistic creation is a complex phenomenon.
- Work in such a way as to develop a positive attitude towards working in groups.
- Become familiar with ICT tools (the WEB GALLERY OF ART, how to create http://www.jigsawplanet.com/puzzle, create a digital artsteps.com exhibition space).
- Create digital space for exhibitions that will utilize the new knowledge of the module, the worksheets and the artistic creations of the pupils, in order to enable them to interact with the material through the digital resource

**3. Materials & Methods**

The teaching scenario took place in primary school students of the 3rd grade. The sample consisted of 35 students (13 boys and 22 girls). The activities took place in 4 teaching hours of the course of visual arts. In each teaching hour, specially formed activity sheets were given, which corresponded both to the possibilities of the classroom's learning level and to the objectives of the program. The program actively participated (1) educator. The collection of data from the application of the micro-script was made through (a) the calendar was respected by the teacher and (b) through a questionnaire that was shared with the pupils. The teacher's diary provided important data for the development of the project. It contained a record of events and reflective notes throughout the training scenario. The questionnaire was used to record attitudes and experiences from the participating pupils. The data obtained from the students ' calendar and questionnaires helped to evaluate the micro-scenario of teaching in order to achieve the learning goals.

3.1 Didactic application of the proposal

The implementation of this proposal had a duration of (4) teaching hours. The teacher had the opportunity to carry out some of the actions in the educational unit, while others could be completed in the free time of the students with the use of the online collaborative platform (wiki spaces). The activity was cross-curricular and addressed to students who had basic knowledge of computer use. For the implementation of the educational script it was necessary to use the Classroom-visual laboratory. Students using the appropriate tools sought information on the internet constructed their own puzzles and finally their own digital museum. Initially, introductory information was made to students regarding the use of appropriate educational software. Then the pupils were divided into groups. The composition of the groups, as well as the assignment of roles to their members was made considering the skills and interests of the members. The activities took place within 4 teaching hours, but through the online collaborative platform (wiki spaces), where the open conversations feature could deepen and enrichment the dialogue (Wegerif, 2006). The subject, activity selected "Acquaintance with a work of my beloved artist!" gave the possibility of personal expression to each student regardless of the level of knowledge in order to express various ideas. The activity was supported by dialogues, even with simple prompts ("What do you think", "Why

do you do It"), which in the right place can have a profound effect on learning (Wegerif, 2004). The methodology for the development of the activity was based on the model of Carbonaro, Rex & Chambers (2004) and was divided into individual stages: activation, exploration, investigation, creation and presentation. The investigation was done through internet searches, where students visit different websites to explore an issue. For the construction of the puzzle, the appropriate software was used as well as the construction of the Digital Museum. Learning occurs through the search for information and the creation of a project (Resnick & Ocko, 1991).

The idea of "learning to create" is in the context of the philosophy of constructivism. The stage of project creation is an ideal teaching intervention for the emergence, utilization and evaluation of the cognitive structures of each pupil. This teaching scenario is a different way of teaching approach than usual practice. The pupils initially expressed their thoughts, sought information, built with modern tools their own puzzles and their own digital museum, used educational software to understand concepts, created their own works to understand the concepts and use of morphological elements. In the context of the teaching scenario, the digital order was exploited, which gave the possibility of continuing the activity and outside of the school unit by further tying the members of the group. Attention was paid to the integration of the collaborative platform (wiki spaces) in the educational process to maintain its role as collaborative and not to remove the importance of physical presence and communication. An attempt was made to make this scenario an alternative learning proposition combined with play and pleasure, rather than with conventional learning obligations (Jenkins, 2006). This teaching proposal proposes collaborative and not competitive learning but even if competition between pupils is developed within the framework of the game considering that the teacher can manage competition efficiently to promote learning and improve student performance.

**4. Results**

Students consider that the use of new technologies helped them a lot when conducting the teaching micro-script. In more detail 21 students replied a lot of 60%, while only 3 replied a modest rate of 8.6% (table 1)

**Table 1**. Frequencies and relative frequencies on whether new technologies and the Internet helped pupils

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Very much | 11 | 31,4 |
| | Enough | 21 | 60,0 |
| | Moderate | 3 | 8,6 |
| | Total | 35 | 100,0 |

Students believe that innovative learning methods (innovative projects, educational scenarios) are not adequately integrated in school, most students are wary since 20 out of 35 replied moderately (table 2)

**Table 2.** Frequencies and relative frequencies on whether innovative teaching methods have been adequately integrated in schools

| | | Enough | Moderate | Little | None | Total |
|---|---|---|---|---|---|---|
| sex | male | 4 | 4 | 5 | 1 | 14 |
| | female | 3 | 16 | 2 | 0 | 21 |
| Total | | 7 | 20 | 7 | 1 | 35 |

Students believe that innovative learning methods (innovative projects, educational scenarios) are not adequately integrated in school, most students are wary since 20 out of 35 replied moderately (table 2).

Students believe that new technologies and the Internet helped communicate with each other and develop cooperative relations, 21 people replied a lot of 60% and only 3 replied a modest rate of 8.6% (table 3).

**Table 3.** Frequencies and relative frequencies on whether new technologies and the Internet can help students communicate and collaborate

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Very much | 11 | 31,4 | 31,4 | 31,4 |
| | Enough | 21 | 60,0 | 60,0 | 91,4 |
| | Moderate | 3 | 8,6 | 8,6 | 100,0 |
| | Total | 35 | 100,0 | 100,0 | |

There is a consensus that the experiential approach to knowledge has helped students achieve their goals. The 34 of the 35 replied that their experiential approach much or helped much-too much (table 4).

**Table 4.** Frequencies and relative frequencies on whether the experiential approach help students achieve the goals.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Very much | 19 | 54,3 | 54,3 | 54,3 |
| | Enough | 15 | 42,9 | 42,9 | 97,1 |
| | Moderate | 1 | 2,9 | 2,9 | 100,0 |
| | Total | 35 | 100,0 | 100,0 | |

**5. Discussion**

As the teachers' diary found, there were difficulties in implementing this teaching scenario, especially in the organizational part in the preparation of the computer laboratory. It is necessary to assist educational informatics in preparing the application of the educational scenario. Also, due to the absence of an optical laboratory in the school unit, the transformation of the classroom into a laboratory required proper preparation by the teacher before the start of the teaching time. It was found that the use of the digital classroom helped to cultivate communication between pupils and to save time from teaching hours, as many problems arise during the implementation of the scenario were resolved in the digital class. It was found that the application of the teaching micro-script resulted in pedagogical benefits for pupils:

a) Students ' interest has been maintained throughout the educational scenario. An attempt was made to make this teaching scenario an alternative learning proposition combined with play and pleasure, rather than with conventional learning obligations (Lund & Nielsen, 2002; Paul, C., Paul, A., Hafner & Bongard, 2000).
b) The micro-teaching scenario offered the possibility of direct participation of pupils in the process of discovering knowledge. Through collaborative learning, pupils experienced a new way of discovering knowledge. Collaborative learning is particularly important for the 21st century student (Ben-Jacob, M. G. & Ben-Jacob, T. E., 2013)
c) Students at all stages of the teaching scenario were able to reflect on the self-correction.
d) On the occasion of the educational teaching scenario, the participating pupils formed collaboratively through the wikis a learning community with the willingness to jointly create a learning environment through their interaction with the common goal of Successful completion of the project.
e) Online learning has ensured students time to think as well as greater participation in the learning process as pupils on the internet tend to be less shy students (M. G. Ben-Jacob & T. E. Ben-Jacob, 2013).

The results from the application of the micro-script as emerged from the student questionnaire show that most pupils consider that the use of new technologies helped them greatly in the conduct of this educational Micro-script. They believe that new technologies and the Internet have helped them communicate with each other and develop collaborative relationships. The research data confirm that the collaboration of the participants in the micro-scenario was excellent. Previous surveys show that such activities promote collaborative learning (Kearns

et al., 2001; Chronakis & Kourias, 2011). However, students believe that innovative learning methods have not been integrated to a degree that changes the mentality of the teacher-centric teaching methodology at school. Also, most pupils consider that there is incomplete information at school about the necessity of innovative teaching methods such as micro-scenarios to raise awareness of all pupils in new ways of discovering Knowledge. Finally there was a consensus among the students that the experiential approach to knowledge helped them achieve their goals in conducting the specific micro-scenario of teaching.

This teaching practice could be extended to other sections of the course of visual arts and in general and other courses of the school unit. This will help stimulate the interdependence and familiarization of pupils with modern technologies and basic concepts of visual arts.

## 6. Conclusions

The specific teaching scenario offered the possibility of direct involvement of pupils:
(a) In the learning process
(b) Cultivation of reflection through the possibility of self-correction
(c) Immediacy of feedback and the satisfaction of achievement of the goal (final project).

On this teaching proposal, all participating pupils formed a learning community with the willingness to jointly create a learning environment through their interaction with the common goal of successfully completing the project. The pupils experienced a new way of discovering knowledge through collaborative learning. Students' interest in this teaching proposal was great throughout its implementation. Therefore, the above methodology is proposed to be applied gradually to the teaching of various courses which will contribute to the stimulation of the interrelation and the familiarization of the pupils with the modern technologies and the basic concepts of visual arts. It was found that as in any innovation, the contribution of modern technology was necessary in the design and implementation of the micro-script. It is proposed that this particular mini-scenario be applied by teachers teaching artistic subjects in the last two classes of primary school in order to provide us with data through the teachers' calendar and student questionnaires so that we have an objective assessment (a) of the ability of this particular educational scenario to achieve its objectives (b) feedback on any changes and proposals to improve it.

## References

Andreadis, A., Athanasiadis, K., and Dodonitsis, M. (2012). ICT applications in the school programs of environmental education. P. E. E. P. C 1, 46. Available on the website: http://www.peekpemagazine.gr/issue/61 [In Greece].

Ben-Jacob, M. G., & Ben-Jacob, T. E. (2013). Perspectives on Online and On-Site Pedagogy: The Impact of Technology Now and in the Future. Art and Design Review, 1(01), 1. http://dx.doi.org/10.4236/adr.2013.11001

Brandon, B. I. L. L. (2004). Applying instructional systems processes to constructivist learning environments. *The eLearning Guild*, *6*(29). https://www.elearningguild.com/pdf/2/062904des.pdf

Carbonaro, M., Rex, M., & Chambers, J. (2004). Using LEGO robotics in a project-based learning environment. The Interactive Multimedia Electronic Journal of Computer-Enhanced Learning, 6(1). http://www.imej.wfu.edu/articles/2004/1/02/index.asp

Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). How'disruptive innovation'will change the way we learn. *Education Week*, *27*(39), 25-36. http://cdn.apexlearning.com/documents/EdWeek_Disruption.06.04.08.pdf

Crook, C. (1998). Children as computer users: The case of collaborative learning. *Computers & Education*, *30*(3-4), 237-247. https://doi.org/10.1016/S0360-1315(97)00067-5

Ferrari, A., Cachia, R., & Punie, Y. (2009). Innovation and creativity in education and training in the EU member states: Fostering creative learning and supporting innovative teaching. *JRC Technical Note*, *52374*, 64. https://www.researchgate.net/profile/Yves_Punie/publication/265996963_Innovation_and_Creativity_in_Education_and_Training_in_the_EU_Member_States_Fostering_Creative_Learning_and_Supporting_Innovati

ve_Teaching_Literature_review_on_Innovation_and_Creativity_in_ET_in_the_E/links/54b6848e0cf24eb34f6d28a4.pdf

Jager, A., & Lokman, A. H. (2000). *The Impact of ICT in Education: The Role of the Teacher and Teacher Training*. Stoas Research. https://scholar.google.com/scholar?hl=el&as_sdt=0%2C5&q=8.%09Jager%2C+A.%2C+%26+Lokman%2C+A.+H.+%282000%29.+The+Impact+of+ICT+in+Education%3A+The+Role+of+the+Teacher+and+Teacher+Training.+Stoas+Research.&btnG=

Jenkins, H. (2006). *Fans, bloggers, and gamers: Exploring participatory culture*. nyu Press. https://books.google.gr/books?hl=el&lr=&id=jj2eKl3NcBEC&oi=fnd&pg=PA1&dq=Jenkins,+2006&ots=nagdbzNMGP&sig=DSVoeoQhKx1WxEp_Whqd1ozY4K8&redir_esc=y#v=onepage&q=Jenkins%2C%202006&f=false

Higgins, S., Xiao, Z., & Katsipataki, M. (2012). The impact of digital technology on learning: A summary for the education endowment foundation. *Durham, UK: Education Endowment Foundation and Durham University*. https://pdfs.semanticscholar.org/d26b/b59f2536107b57f242b8289b1eb6f51d8765.pdf

Fullan, M. (1991). *The new meaning of educational change*. London: Cassel.

Kaklamanis, Th. (2005). Collaborative learning and ICT in education*. Inspection of educational issues, 10, 130-144.*

Kearns, S. A., Rogers, C., Barsosky, J., Portsmore, M., & Rogers, C. (2001). Successful methods for introducing engineering into the first grade classroom. In *ASEE Annual Conference and Exposition Proceedings, Albuquerque, New Mexico*. https://ceeo.tufts.edu/documents/conferences/2001skcrjbmpcr.pdf

Kozma, R. B. (2003). Technology and classroom practices: An international study. *Journal of research on technology in education*, *36*(1), 1-14. https://doi.org/10.1080/15391523.2003.10782399

Livingstone, S. (2012). Critical reflections on the benefits of ICT in education. Oxford review of education, 38(1), 9-24. https://doi.org/10.1080/03054985.2011.577938

Lund, H. H., & Nielsen, J. (2002). An edutainment robotics survey. In *HART2002*. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.72.6048

Mynbayeva, A., Sadvakassova, Z., & Akshalova, B. (2017). Pedagogy of the Twenty-First Century: Innovative Teaching Methods. In *New Pedagogical Challenges in the 21st Century-Contributions of Research in Education*. http://dx.doi.org/10.5772/intechopen.72341

Paul, C., Paul, A., Hafner, V., & Bongard, J. (2000). Teaching new artificial intelligence using constructionist edutainment robots. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.38.1793

Papapanagoy, E. (2006). Development of educational material of environmental education and evaluation of the awareness-change of attitudes in various groups of pupils (Doctoral dissertation). [In Greece]

Passey, D., Rogers, C., Machell, J., McHugh, G., & Allaway, D. (2004). The motivational effect of ICT on pupils. Department of Educational Research. https://pdfs.semanticscholar.org/b3c6/2de570e4928a969b27aaa31ecd17870fde1d.pdf

Resnick, M., & Ocko, S. (1991). LEGO/Logo: learning through and about design In: Harel, I. & Papert, S. (Eds.) Constructionism. https://llk.media.mit.edu/papers/ll.html

Serdyukov, P. (2017). Innovation in education: what works, what doesn't, and what to do about it?. *Journal of Research in Innovative Teaching & Learning*, *10*(1), 4-33. https://doi.org/10.1108/JRIT-10-2016-0007

Yagounides, P. (2017). The school of future and the Finnish-German alternative educational system-a comparative approach. Education sciences, (2), 160-171.

Wegerif, R. (2004). The role of educational software as a support for teaching and learning conversations. Computers & Education, 43(1-2), 179-191. https://doi.org/10.1016/j.compedu.2003.12.012

Wegerif, R. (2006). A dialogic understanding of the relationship between CSCL and teaching thinking skills. *International Journal of Computer-Supported Collaborative Learning*, *1*(1), 143-157. https://link.springer.com/article/10.1007/s11412-006-6840-8

Zhu, C., Wang, D., Cai, Y., & Engels, N. (2013). What core competencies are related to teachers' innovative teaching? *Asia-Pacific Journal of Teacher Education*, *41*(1), 9-27. https://doi.org/10.1080/1359866X.2012.753984

Chronaki, A. and Kourias S. (2011). Kids, Robots and Lego Mindstorms: recording the beginning of an interactive relationship. In the Proceedings of the *2nd Pan-Hellenic Conference on the Integration and Use of ICT in the Educational Process*, 1009-1020, Patras. [in Greek]