



# Educational online social networking in tertiary education - A teaching intervention

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## Abstract

*This paper presents a descriptive study concerning the use of an educational online social network in the framework of a teaching intervention in tertiary education. The basic tool used was the network "Logo in Education: a community of practice and learning" (<http://logogreekworld.ning.com>), as well as data from the network members' interaction with the network tools.*

*In this paper, we describe the basic characteristics of the teaching intervention and present the results of an experimental study evaluating it, indicating, at the same time, the students' skills, attitudes and views concerning the use of Logo and of the network tools before and after their participation in the network. Finally, we discuss key subjects and pose open questions for future exploration.*

## Keywords

*Social networking, educational social network, Logo*

## Introduction

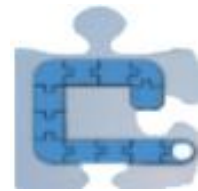
The use of online social networking services in education is constantly gaining ground at a global level and has become a particularly popular trend. Modern research focuses on the exponential development of social networking sites as well as on the increasing exploitation of social networking in the teaching and learning process (National School Boards Association, 2007; Office of Communications, 2008; Yuen & Yuen, 2008; Karabulut et al, 2009).

According to Steve Hargadon (2009a), Web 2.0 is going to dramatically change the 21st century landscape in education, shaping the way in which students approach learning, educators approach teaching and, more and more, the way in which teachers interact with, and learn from each other.

Hargadon (2009b) defines "Social Networking" as "the Aggregation of Web Tools for Building Community & Content". Also he advocates (Hargadon, 2009c): "'Educational Networking' is the use of social networking technologies for educational purposes. Because the phrase 'social networking' can carry some negative connotations for educators, the phrase 'educational networking' may be a way of more objectively discussing the pedagogical value of these tools."

An educational online social network (EOSN) is a network where members of the educational community, like teachers, students, parents, school advisors and so on may register, communicate, interact and exchange educational information, ideas, views and material focusing on various specialized subjects and concerns (Glezou et. al., 2010).

Educational online social networks may contribute to the upgrading of the educational system, the teaching-learning process and lifelong learning. The members of the teaching community may benefit from this new social networking via Internet trend in a personal as well as collective



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level. Educational online social networks may function as Digital Learning Communities. Thus, the exploration of social networking in the teaching process is a really important issue.

The present paper focuses on a descriptive study concerning the use of an educational online social network in the framework of a teaching intervention in tertiary education. The basic tool used was the network “Logo in Education: A Learning Community of Practice” (“LogoinEdu” as abbreviation).

The paper aims to study and evaluate the teaching intervention that took place in the frame of the course “Didactics of Informatics”, Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens, during the winter semester 2009 – 2010. The study objectives include: a) the presentation of students’ skills, attitudes and views concerning the use of Logo and the network tools before and after their participation in the network and b) the exploration of the interaction developed between the students by use of the network tools.

The paper presents the basic characteristics of the teaching intervention, points out the results of the evaluation study, discusses some key subjects and poses open questions for future work.

## Description of the “Logo in Education: A Learning Community of Practice” EOSN

The educational online social network “Logo in Education: A Learning Community of Practice” (“LogoinEdu” as abbreviation) was created by a teacher of Physics/Informatics at the end of May 2009 as an independent initiative using Ning platform (Fig. 1). Its goal is the communication, cooperation and exchange of views, ideas and material between members of the educational community from different fields, age and background, who are interested in exploiting Logo as a programming language and philosophy in education. This EOSN primarily concerns teachers of Informatics and Computer Science and in parallel, teachers of various specialties, cognitive subjects and all educational levels who are interested in or/and experimenting with the usage of Logo programming language in the teaching praxis.

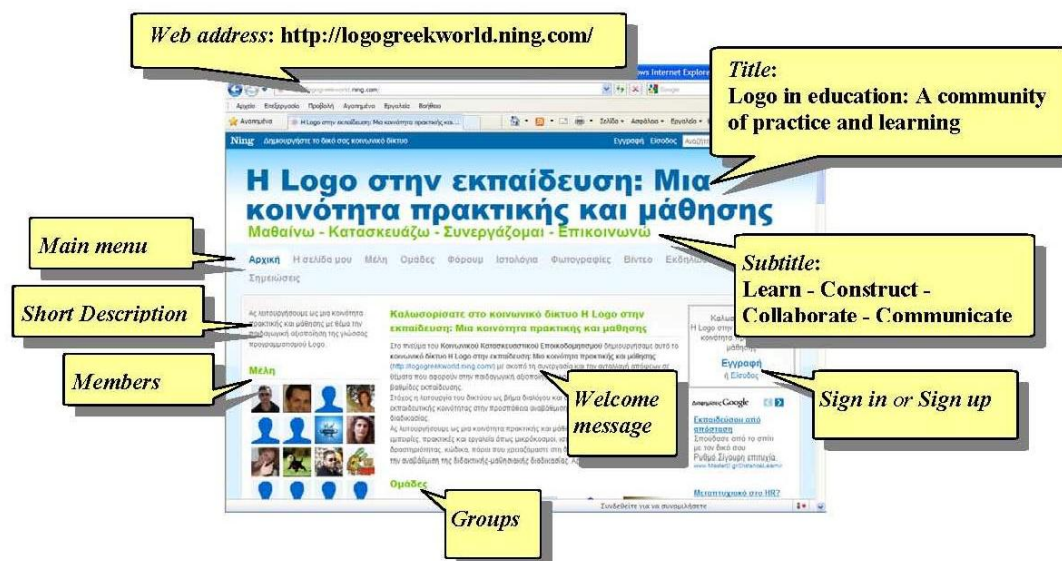


Figure 1. Snapshot of home page of the “LogoinEdu” EOSN

As it is denoted in the “LogoinEdu” subtitle “Learn - Construct - Collaborate - Communicate” the



ultimate objective of “LogoinEdu” is to function as a learning community of practice, as a forum for the dialogue and mutual support between members of the educational community focusing on the pedagogical exploitation of Logo and Logo-like environments attempting to improve the teaching-learning process.

The network members are invited to interact in the spirit of Social Constructionism: “Let’s function as a community of practice and learning and exchange views, experiences, practices and tools, such as microworlds, websites, lesson plans, worksheets, codes and all kinds of resources necessary for our teaching practice, with the purpose to upgrade the teaching-learning process.” as it is characteristically mentioned in the network pages.

The groups’ subjects cover every level of education and extend beyond the field of Logo. Most of the groups are active and share many discussions, comments and rich educational material about learning/ familiarizing with/ delving into the various Logo-like environments. On March 25th 2012, “LogoinEdu” counted 844 members and 34 groups.

## **Presentation of the teaching intervention**

On November 5th 2009, the group “Didactics of Informatics” was added to the network in a first attempt to explore the possibility of exploiting social networking in the teaching process. As opposed to the other groups of the network, this group was chosen to have controlled registration and access, i.e. to be open only to students and teachers of the “Didactics of Informatics” course (Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens) during the winter semester 2009 – 2010. Only the registered members of the group have access to the group discussions and the ability to add new discussions, comments and post material.

The students came for the first time in contact with the network on 5/11/2010 in the framework of a 3-hour seminar (oral presentation, not workshop) titled “Introduction to Logo”. The seminar involved an introduction to know Logo as a programming language and educational philosophy, focusing on the teaching use of Logo and the presentation of Logo-like environments, and especially MicroWorlds Pro. During the seminar, the network was presented through a direct connection to the web and through browsing its basic pages that lasted about 15 minutes. The students were invited to register to the network by providing their student e-mail address so as for their participation request to be confirmed and accepted.

The activity was titled “Assessment of the participation experience to the online educational social network “Logo in Education: a community of practice and learning”. According to the activity’s announcement: “This activity has to do with your participation to the group “Didactics of Informatics” of the “Logo in Education: a community of practice and learning” network. You are asked to register to the educational social network “Logo in Education: a community of practice and learning”, and in particular to the network group “Didactics of Informatics”. You can browse the network freely, search for/study various materials and participate actively to the groups and the network’s other activities. The activity will be considered complete with the posting of a comment to the discussion board “Working out the activity – Assessment of the participation experience to the network” as a recording of your personal experience of participation to the network. In your personal comment (free text of about 50-200 words) you can e.g. mention if this is the first time you participate in an educational social network, what were your benefits from that, what problems you faced, or characterize your experience as positive/negative, constructive/useless, interesting/ indifferent. All views, judgements and suggestions are respectable and acceptable. This activity is individual and will be graded by one



point in the framework of the course “Didactics of Informatics”. The deadline for the submission of comments is: 6/12/09. For any questions or queries you can communicate with the activity supervisor”. In the group discussion “Activity evaluation” a questionnaire was posted as a tool for the evaluation of the activity. Students were asked to fill in the questionnaire voluntarily in order to contribute to the feedback process and post their personal comment to the relevant discussion.

### Experimental evaluation study

An experimental evaluation study of the teaching intervention was carried out in order to explore the students’ views about the use of social networking tools and assess the effectiveness of the application. The study was directed by two main exploratory questions: a) What is the students’ general opinion about the application of the activity? and b) What are the important issues as far as the use of an educational network in the teaching process is concerned?

A multi-method approach was adopted for the exploration of the students’ opinions. This included the collection of data by use of qualitative and quantitative exploratory techniques, such as observation notes, student comments, student network activity data and, finally, the questionnaire.

The questionnaire consisted of four parts. The first part was designed to collect demographic and personal data from the students. The second part had to do with the students’ previous experience before the activity and included 5 questions-criteria. The third part was about the experience gained after the activity and included: a) 10 questions-criteria about Logo and b) 15 questions-criteria about the network, aiming to evaluate the activity application success. The answer to each of the criteria was based on a likert-type scale ranging from 1 (Not at all) to 5 (Very much). The fourth part of the questionnaire included 4 closed-type questions (yes-no) and 7 open-type rethinking questions in order to collect comments, views and suggestions from the students.

The analysis of data collected from the observation notes, the student comments, the student network activity data and the open questions of the questionnaire was carried out with the help of a content analysis method. The qualitative analysis of the data was based on the recording of all data and their study by the researcher.

201 members of the group “Didactics of Informatics” participated in the study (2 Ts and 199 Ss, where T: teacher (T1 and T2) and S: student). One hundred and eighty two students (138 men-76% and 44 women-24%) voluntarily filled in and returned the questionnaire, which was created according to the needs of the evaluation study.

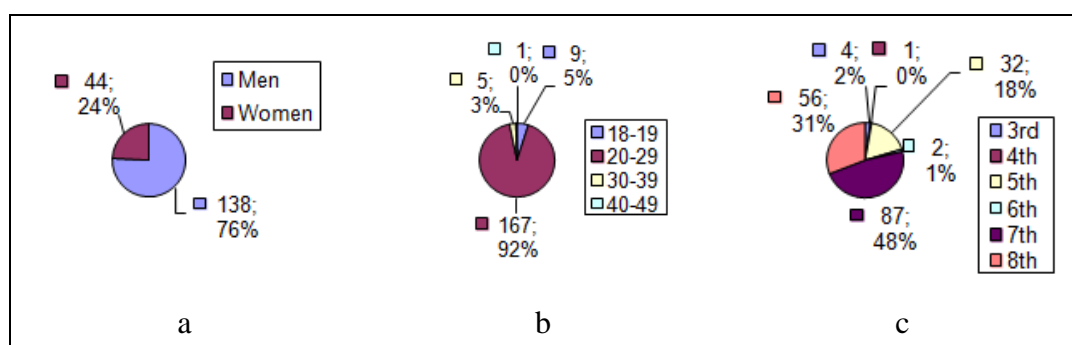


Figure 2. Student distribution based on a) sex, b) age, c) semester of studies

As it turned out, the overwhelming majority of the students (91%) belonged to the age group of



20-29 years, 3% to the age group of 30-39 years, 1% to the group over 40, while 5% was aged between 18-19 years, as shown in Figure 2.

## Data analysis -Results

From the data analysis, we can point out the following:

The student registration and participation to the network begun from the first day of the activity and increased daily. The majority of the students did not register to the group at once. As a result, their participation to the network was limited before the posting of the last comment. During the last five days before the deadline of the activity, the number of registrations amounted to 109 (54,8% of the total registrations number).

On the group's comment board 5 comments were recorded (1 from S, 4 from T1).

The majority of the students showed some hesitation to post a question to the discussion groups and resorted to sending an email to the activity supervisor. The activity supervisor sent a total of 87 email messages (mostly clarifying answers to questions about the activity, or to queries) to students and received 45 messages via the network mail service and 24 via other e-mail services outside the network. Two students were kindly asked to change their profile pictures because they were considered provocative for an educational network. Both students complied with the recommendation. Table 1 presents characteristic data from the group discussions. The groups are presented in ascending order, based on the date of their creation.

Discussion subjects	Member title	Date of creation	Last activities	Number of answers
Carrying out the activity – Assessment of the network participation experience	T1	5/11/09	6/12/2009	254
Questions about Logo and MicroWorlds Pro	T1	5/11/09	5/11/2009	0
Introductory course to Logo (under construction) in the moodle platform	T1	5/11/09	5/11/2009	0
Using online social networking in the teaching process	T1	6/11/09	3/12/2009	5
Questions about the network	T1	10/11/09	10/11/2009	0
Questions, suggestions and views about the carrying out of the activity	T1	16/11/09	4/12/2009	10
Our criteria for the network evaluation	S	25/11/09	26/11/2009	2
Activity evaluation	T1	30/11/09	6/12/2009	1
<i>Total</i>				272

Table 1. Presentation of the group discussion data





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The activity supervisor took part in spontaneous online chat discussions with students thirty two times, mostly in the last days before the deadline for posting the comment. During the chat discussions, there was an increased motivation of the students who registered to the network with a delay (Figure 3). As a whole, 58 students took part in a chat discussion with the presence of the supervisor.

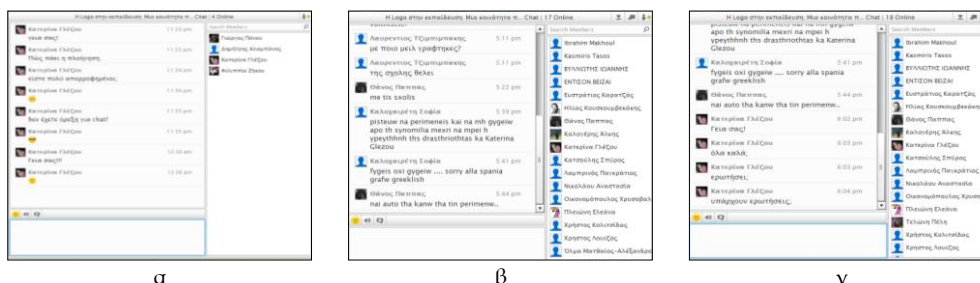


Figure 3. Use of the chat: a) 24/11/09 - 12:38 am, b) 06/12/09 - 5:45 pm, c) 06/12/09 - 6:05 pm

From the 199 students that registered to the group, seventeen did not deliver the questionnaire, while five students didn't post a comment at all. Sixteen students registered to other network groups as well. Twenty six students updated their profile. Forty nine students added a profile picture, 28 of which chose a personal photo, while 21 chose another picture/image. Fifty eight students participated in other discussions besides the ones of their group. Eleven students participated in 2 network groups, four students in 3 groups, one in four groups and two students in five groups. The authorization for the participation to the group was an issue of delay that caused discomfort to 12 students who initially registered to the network with a different e-mail address than their student e-mail address, so their application of participation to the group did not get accepted. The rejection of their registration application was accompanied by an email that urged them to apply again by using their student email address. The time between the registration application to the group and its acceptance or rejection ranged between 8 minutes and 26 hours with an average time of 2 hours and 14 minutes.

The questionnaire results are presented in reference to: a) previous experience shown in Figure 4, b) the experience gained concerning: i) Logo in Figure 5, ii) the network in Figure 6 and iii) the overall experience assessment in Figure 7.

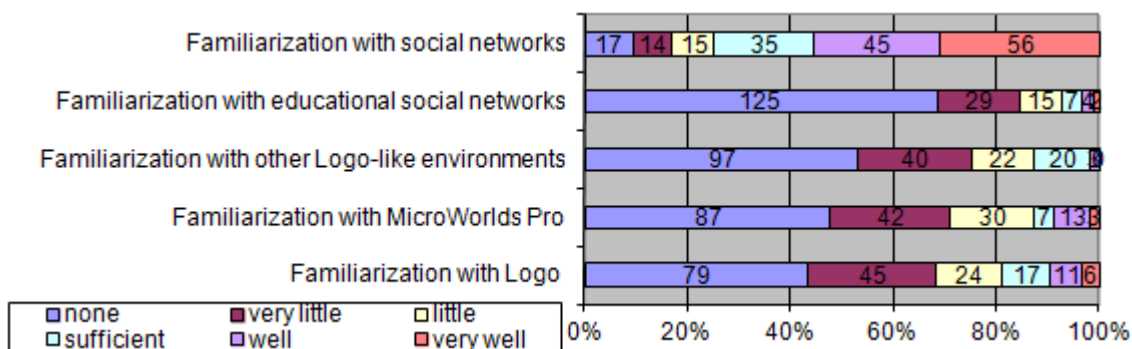


Figure 4. Questionnaire results in reference to previous experience

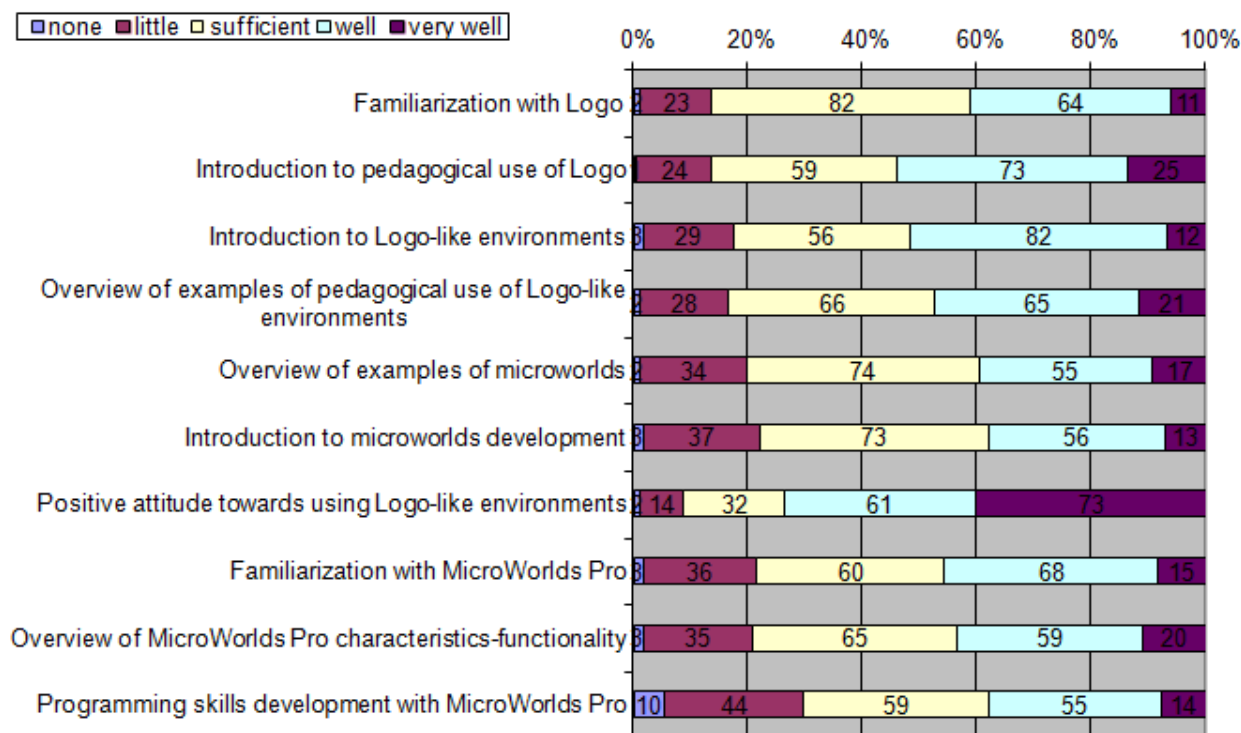


Figure 5. Questionnaire results in reference to the experience gained concerning Logo

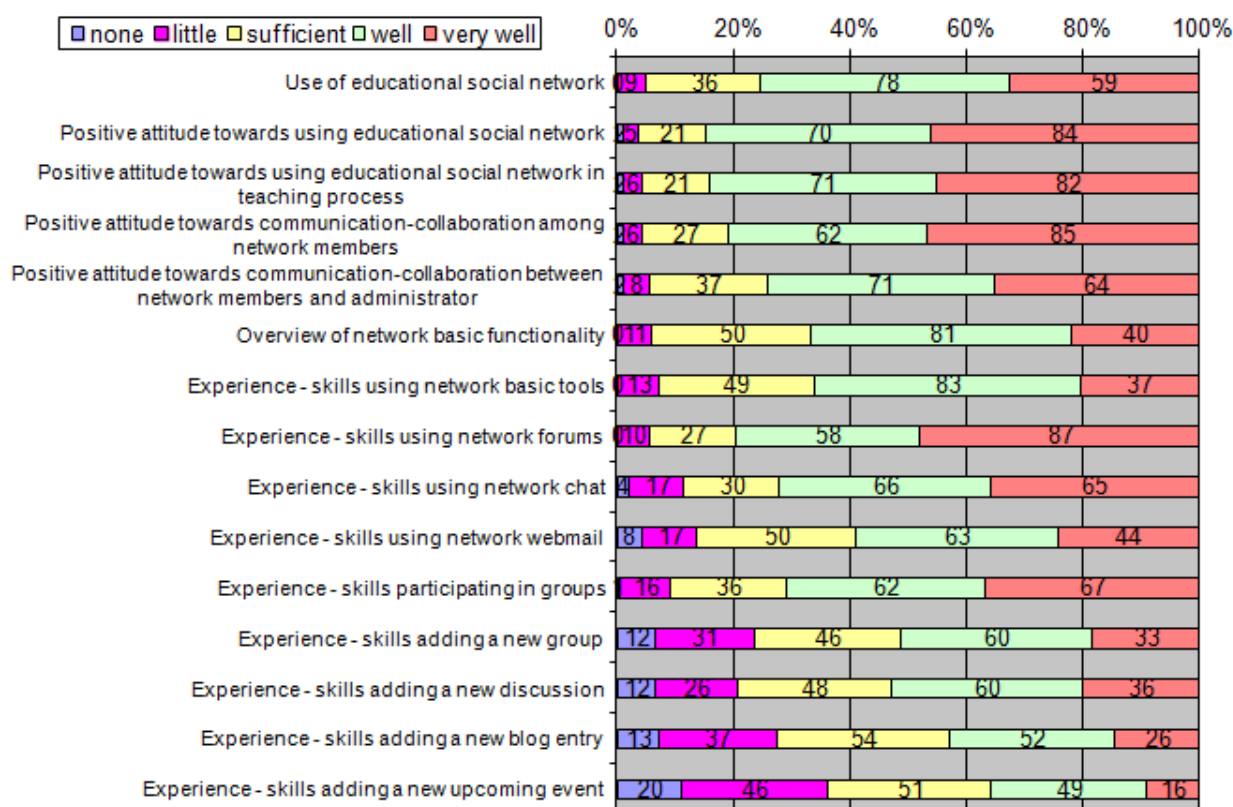


Figure 6. Questionnaire results in reference to the experience gained concerning the network

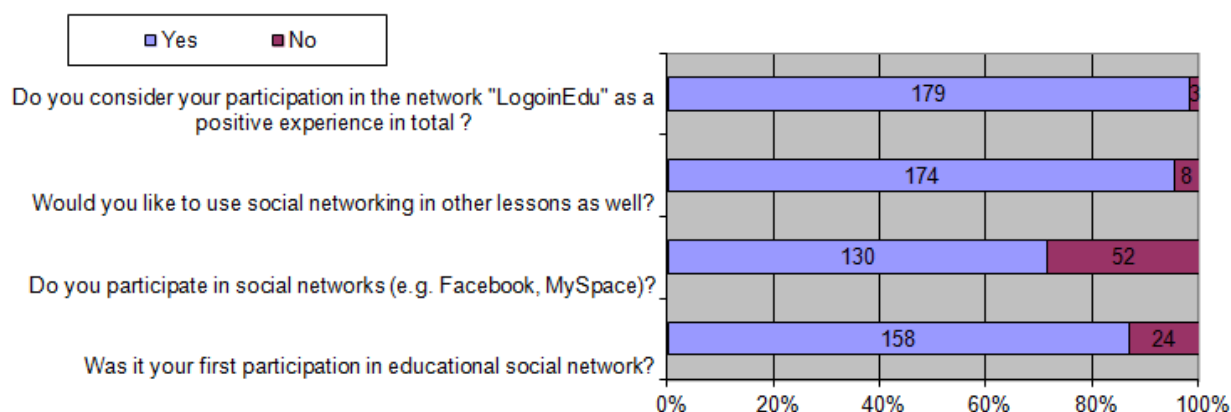


Figure 7. Questionnaire results in reference to the overall experience assessment

These results indicate that the students -as they declared themselves- developed the basic technique and pedagogical knowledge in a satisfactory level as far as the use of Logo, of Logo-like environments (especially MicroWorlds), were concerned and familiarized to a certain extent with the social networking tools provided. From the 182 students that took part in the research, only sixty three answered the open type questions of the questionnaire. The results indicate that students were satisfied with their participation in the activity. There were also some students who liked participating in the network and characterized the intervention as an “unprecedented”, “really innovative”, “radical”, “very useful” experience. Many students expressed openly their desire for the adoption of similar intervention concerning social networking in other courses as well. Many students pointed out that their participation to the network surprised them, since they discovered that there are indeed teachers that “love programming”, “work hard to become better teachers”, “believe in the value of Logo”.

## Conclusions – Discussion

This paper aims to contribute to the dialogue concerning the possibility of using an educational online social network in the teaching process.

In the framework of the paper, we present the main characteristics of a teaching intervention in tertiary education and report the results of the experimental evaluation study. The skills, attitudes and views of the students –the potential future Informatics teachers- are pointed out as far as the use of Logo and the network tools are concerned before and after their participation in the network. As a whole, the teaching intervention was evaluated positively by the majority of all parts involved. According to the evaluation study results, the students regarded that they developed the basic technique and pedagogical knowledge concerning the use of Logo and Logo-like environments to a satisfactory level, and familiarized to a certain extent with the social networking tools provided. The students, in their majority, participated for the first time to an educational network and recognized the significance and the added value of using educational social networking. The degree of the students’ participation and interaction to the network was estimated rather lower than expected, given that they were students of the Informatics Department and, thus, were expected to be highly familiarized with Web 2.0 tools.

An important open educational issue is the study of teacher ideas and attitudes towards the integration of social networking in everyday teaching process. The exploitation of social networking in practice requires, apart from contemporary Internet platforms and appropriate





educational tools, some proper teaching and training interventions on the part of educators, so as the trainees to meet the needs of their new didactic-learning roles, such as the increased necessity for teamwork. How to implement this novel paradigm and how effective its introduction into teaching-learning process is still to be investigated.

The educational online social network “Logo in Education: A Learning Community of Practice” may offer a promising new way to recruit participants, particularly students and teachers, into Logo research. The teaching intervention need to be further evaluated, regarding its effect on scaffolding Logo programming -programming language and philosophy- and gradual familiarization with the Logo-like programming environments. Further research is needed to help in identifying the key aspects around how such teaching approaches are used to the best effect for students’ engagement and learning. In addition, more research is needed for the identification of the special design characteristics of the learning activities, which promote engagement, artifact and knowledge construction, “thinking about thinking”, meaning negotiation and collaboration for different learners.

## **Future Work**

The design of effective and constructive teaching interventions concerning the use of educational social networking in order to better support student engagement in Logo programming skills development remains an open issue. Our future research plans focus on exploring the implementation of different teaching interventions which might lead to the most effective combinations to support members’ engagement and learning. Some crucial questions remain unanswered: a) How can we facilitate the network members in order to function as active Digital Learning Community members? b) Which are the tools that can best support communication, interaction and cooperation between the members? c) How can the network administrator promote communication and cooperation between the members? d) Which tools can better contribute to personal development and learning?

## **Acknowledgements**

I would like to gratefully acknowledge the contribution of Prof. Maria Grigoriadou, Director of the Educational and Language Technology Laboratory (ELTL) at Department of Informatics & Telecommunications, National and Kapodistrian University of Athens, for her valuable insights and comments with this study. Special thanks to all the students who took part in the research described in this paper.

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