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USE OF SOCIAL NETWORKS IN TEACHER TRAINING PROGRAMS: A CASE STUDY

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ABSTRACT

In current society, Digital Technologies (DT) are powerful pedagogical resources; however, they require special teacher training. This paper analyzes a case study carried in a subject given in a *lato sensu* post-graduation course for teachers. The program promoted the discussion of the use of DT, and used an Internet social network (ISN) to support activities. Therefore, this article aims to analyze difficulties and advantages of the use of ISN in teacher education programs. The study starts with a reflection of the importance of training teachers in the use of DT and the pedagogical use of ISN. Following, the case study is contextualized, and the methodological procedures are described. The paper closes with a discussion of the difficulties and benefits of social networking based on data derived from the observation, questionnaire and students' posts on the network. Despite the difficulties, use of the ISN was considered a positive one.

Key Words: Internet social networks, teacher training, digital technologies.

INTRODUCTION

The rise of the internet, and Web 2.0[1] functionalities, in particular, have created new spaces for virtual communication exchanges. In this scenario, and with support of the Web 2.0 resources, social networking has expanded its horizons. Such resources have enabled new modes of relationships, regardless of time and space, by means of the so called internet social networks (ISN). By creating and sharing information, these networks have also allowed those who were mere consumers to become producers (Attwell, 2007).

In this scenario, research has been done to investigate the pedagogical use of ISN (Tairi et al., 2008, Ryberg, 2008, Moreira & Monteiro, 2010, Paião, 2010, Moran, Seaman & Tinti-Kane, 2011). Since this is a rather recent field of study, research related to that topic is essential.

This paper presents a case study in which the approach used to analyze data was predominantly qualitative. The study took place in the subject "Information and Communication Technologies in Education[2]" offered in

[1] The main fundamentals of Web 2.0 are: use of the Web as a platform, and the improvement of services as the number of users increase (O'Reilly , 2005).
[2] The main objective of the discipline is to contribute for the pedagogical use digital technologies in teaching practices, aiming at the knowledge construction.

the *lato sensu* post-graduation course "Teaching in the 21st Century", at the Instituto Federal Fluminense[3], from March through May 2012. The discipline promoted the discussion of the pedagogical application of digital technologies (DT) and, to support academic activities, an ISN was implemented on the Elgg platform. The use of this ISN was observed throughout classes in order to identify its drawbacks and benefits. Along with the observation, the study included data collected in questionnaires and students' posts on the network.

Therefore, the aim of this paper is to analyze the difficulties and advantages of using ISN, as identified in the case study. Section 2 of the article discusses the relevance of preparing teachers for the educational use of DT and social networking. Section 3 describes the context and methodological procedures used in the case study. Based on data collected in the investigation, the difficulties and advantages found in using ISN are analyzed in Section 4. The paper closes with considerations on the issues raised by the study.

PEDAGOGICAL USE OF DIGITAL TECHNOLOGIES: SIGNIFICANCE TO TEACHER EDUCATION

DT combine traditional elements related to hardware (processing, memory, input devices, display, peripherals, etc.), and to software (operational systems and application programs), to execute a wide range of activities including technical, communicative, and educational tasks (Clark-Wilson et al., 2011). Considering the current dissemination of these technologies, it is important to think of strategies that make DT feasible in schools, such as (Costa, 2008): i) integration of DT in all school departments (documents, academic records, etc.), and every subject area; ii) infrastructure and additional resources; iii) interest of school officials in incentivating the use of DT; iv) graduate follow-up. It is important to observe that these strategies do not guarantee successful programs.

Some failures and slowness in integrating DT into teaching activities may be related, according to Costa (2008), to the little attention given to the complexities of graduation curricular activities, and the peculiarities of students. After all, teaching presents its own specificities, singularities and uncertainties resulting from the complexities of the teaching and learning process, demanding, in turn, well trained professionals to deal with the various pedagogical situations in a grounded and adequate manner (Costa, 2008). For Imbernón (2010), there are many teacher training courses, but innovation is little or not proportional to the preparation they receive. One has seen little progress in ideas and practices in teacher education. This may be due to predominant policies and educators who strongly hold on to uniform and transmitting teaching practices, with emphasis on theories that are decontextualized and far from real-life issues (Imbernón, 2010).

In addition, continuing education courses that follow the unidirectional information flow, and in which the participants' context is not taken into consideration, do not, in most cases, generate changes in teaching practices. The study carried by Barcelos, Passerino and Behar (2010) shows evidences that the teachers who were interviewed tended to not put into practice knowledge acquired in the continuing education programs they participated in. There may be different reasons for this; one hypothesis is that standard graduation models, used by specialists who do not take into consideration the context in which student/teachers are involved make such transition even more difficult.

DT competency standards for teachers[4] (Unesco, 2009) point out that changes in pedagogical practices must involve the use of different technologies, tools, and electronic content. It is also important that teachers know where and when to use technologies, or none at all. To do so, it is relevant that they be prepared to apply these new practices, since they play a significant role in integrating schools into the digital culture.

[3] Campos dos Goytacazes, Rio de Janeiro, Brazil.

[4] According to Perrenoud (2000), competence is the ability to mobilize several cognitive resources (knowledge, skills, information, etc.), in order to deal with a number of situations. The author adds that competences are linked to cultural and professional situations, as well as to social conditions.

There are several DT that teachers can use with students when aiming at improving teaching and learning processes (programming languages, simulation software, apps for mobile devices, videos, virtual learning environments, among others). This article, however, concentrates on social networking. Their pedagogical application is discussed in the following section. However, it is important to observe that teacher education demands participation, interaction, exchange of experiences, cooperation, contextualization, and teaching knowledge (Tardif, 2007). Therefore, we understand that ISN have great potential to support teacher training programs.

Pedagogical use of Internet Social Networks

A social network is defined as a set of two elements: actors, that is, nodes (people, institutions and groups), and their connections – interactions or links between nodes (Recuero, 2009). Araújo e Assis (2011) list four characteristic aspects of networks: i) they are sustained by the will and affinity of their members – responsible for reaching objectives; ii) they are non-linear, as they expand in different directions; iii) they present horizontality as main organizational feature (in other words, the network structure is an alternative to the pyramid organization); iv) they are multidimensional, as they orient users to many dimensions (levels, layers, circles).

In social networks, expression is accomplished when interactions are established between the network nodes (actors). Such interactions have a dynamic character, and their analysis allow for the understanding of what type of relationships emerge in the network, and which ones are actual social bonds. These can be either strong or weak, depending on the quality of the interactions, and on the social exchange carried by the actors. Strong bonds are those characterized by intimacy and proximity; whilst weak ones are distinguished by sparse relations, not resulting from intimacy and proximity (Granovetter, 2000). Thus, strong bonds build the least unstable networks. Exchanges in these environments generate immaterial elements built and negotiated among the actors, allowing for deeper bonds and group sedimentation (Recuero, 2009). According to Putnam (1993), social capital refers to connections among individuals, to the norms and values that govern interactions among them. The “social” feature of social capital demonstrates that those resources are not personal assets, but typically found in social networking.

To create ISN, it is necessary to use platforms such as: Orkut, Facebook, Ning, SocialGO, Meezoog, WackWall, Grouply, Elgg, among others. These platforms are not the ISN themselves, but represent them (Recuero, 2009). The networks *per se* are created from interactions, from established social bonds, and generated social capital. Platforms are also named as tools, systems, sites or software.

By mediating interactions, social networks have changed several areas since ancient times, including business, industry, economy, art, culture, and education (Clark & Roberts, 2010). An ISN is mostly used to make acquaintances, post photos, videos, comments, and sales. Nevertheless, they can also be an important resource to support educational activities (Clark & Roberts, 2010).

Recent studies have shown that social networking in educational settings may be an interesting pedagogical strategy (Paião, 2010). The study by Moreira e Monteiro (2010), in particular, pointed out that the creation of virtual environments to complement traditional learning is significant to promote and strengthen teacher-student and student-student interactions in sharing knowledge and cooperative work. Such networks can also contribute in continuing teacher education, as they allow them to actually experience the advantages of ISN functionalities and, therefore, feel confident to use social networking with their students (Barcelos, Passerino & Behar, 2010).

Goldfarb et al. (2011) list the benefits of the pedagogical application of social networking found in the literature: i) precocious identification of students' needs and academic assessment; ii) organization of

communities to share ideas, approaches, and resources; iii) student involvement due to their familiarity with ISN; iv) improvement of student performance resulting from greater involvement in classroom discussions; v) information management, supported by the power of ISN to integrate several tools; vi) oportunity to contact students who do not adapt to traditional teaching methods; vii) increase of accomplishment and self-confidence feelings.

A research carried in 2010 (edWeb.net et al., 2010)[5] with educators in the USA (teachers, principals and librarians) presented comprehensive data on the policies and practices of pedagogical use of social networking. Its data comprised indicators, including the following: i) in general, most educators regard use of ISN as very relevant to education, despite some concerns, such as those related to confidentiality and privacy, legal responsibility, among others; ii) educators who participate in social networks are more likely to be optimistic about using them for educational purposes; iii) younger educators are more likely to join social networks, and feel more comfortable with this technology (but the research was not conclusive whether this means that younger educators do integrate social networks into education or not). Based on these data, the authors presented these recommendations on the educational use of ISN: i) principals and teachers must gain more experience on educational networking, which may, in turn, lead to the understanding of the possibilities opened by this technology; ii) promissing practices must be publicized to show how teachers can effectively integrate social networks into the curriculum; iii) it is necessary to establish usage policies for sites that present social/collaborative features (edWeb.net et al., 2010).

Another study carried in the USA with 1920 college teachers showed that 80% participate on social networking, and that more than half of them use this medium in the classroom (Moran, Seaman & Tinti-Kane, 2011). Some of the relevant results from this survey are: i) the predominant use the ISN in classrooms are watching videos and listening to podcast; ii) evidence that teachers who are frequent web users are more aware of the pedagogical use of ISN; iii) level of teachers' awareness does not vary according to age or career stage, but usage level does; iv) 58% of the participants in the survey agree that using ISN can be a valuable resource to collaborative learning. In general, the study signalled that the way teachers use social networking in the classroom is still quite passive (Moran, Seaman & Tinti-Kane, 2011). It is important that teachers accept ISN as a means and possibility to expand educational spaces, decentralize access to knowledge, change the current communication logics and bring together teachers and students.

According to José Armando Valente (Klix, 2011), educational use of ISN in Brazil has been limited to blogging and other class resources; but mostly resulting from individual interests. The author adds that, in most cases, such usage is to publish contents that were not presented in class, or to receive materials sent by students. Valente (Klix, 2011) says that such actions are not innovative; on the contrary, they only contribute to transmitting information. The value of these actions is not questioned by the author, but he affirms that it is possible to expand them, as in the case study described in the following sections.

CASE STUDY: CONTEXT AND METHODOLOGICAL PROCEDURES

The case study described in this paper was conducted in the subject “Information and Communication Technologies in Education,” one of the disciplines of the post-graduation course “Teaching in the 21st century” at the Instituto Federal Fluminense. The subject, given by the authors, had a workload of 32 h, from March 16 through May 11, 2012. The objectives were: i) analyze the pedagogical use of DT; ii) discuss public policies related to the implementation and use of these technologies in schools; iii) understand different approaches in the use of educational software in the teaching and learning process; iv) make critical evaluation of various

[5]The survey considered of two stages: i) one following a quantitative approach, with over 1200 educators (principals, teachers, and librarians); ii) a qualitative study with 12 principals who used social networking for professional reasons. The survey reported above using both approaches.

software and educational sites; v) analyze the internet as a technology that supports construction of knowledge.

All 27 students were graduate teachers of different educational areas and school levels (from Elementary to High School) – some being actual professionals. The students' classifications by gender and age group are shown in Table 1 and in Figure 1, respectively.

Table 1: Categorization by Gender

Gender	Students (%)
Female	85.19
Male	14.81

As shown in Table 1, the target audience of the case study was predominantly female. This is in accordance with findings from a research carried out in 2011 (Commonwealth Secretariat & UNESCO, 2011), which shows evidence of an international trend towards the predominance of female teachers in elementary schools and, in some countries, also at high school level. Data in Table 1 are also coherent with another survey by Unesco released in 2009 (Gatti & Barretto, 2009). Focusing on teaching in Brazil, this study shows a strong predominance of women working in all levels of basic education (from Elementary to High School).

Analysis of Figure 1 shows that the students' age ranged mostly from 21 to 32 years of age, but more experienced teachers, 33 to 50 years old, were also found.

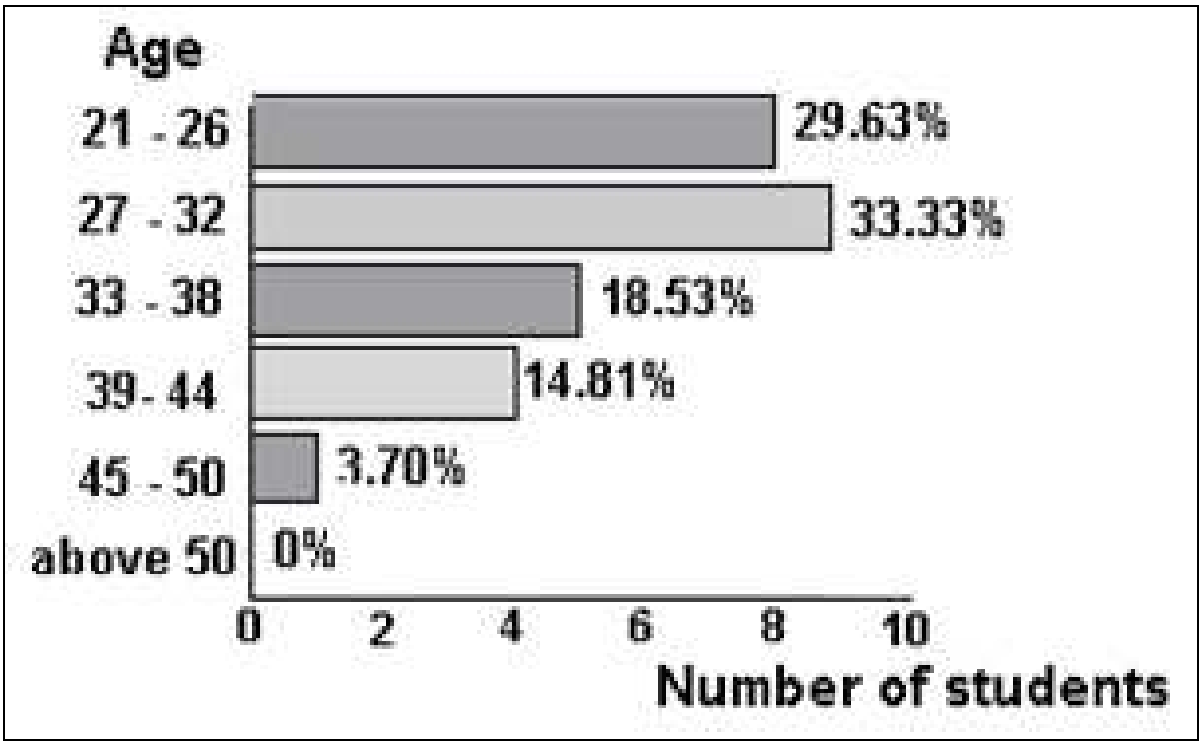

Figure 1: Students' Age Groups

For the course "Teaching in the 21st century," a social network on Elgg platform was implemented. Figure 2 presents its homepage. This network was used in the subject "Information and Communication Technologies in Education," to support activities, and expand time and space restrictions of the traditional classroom.

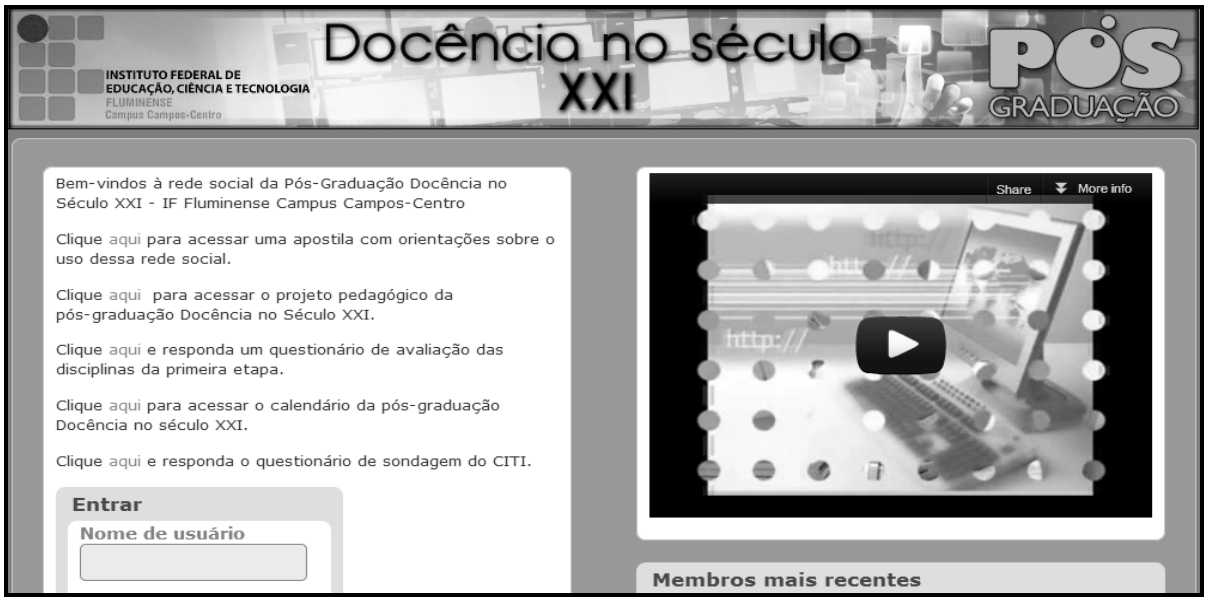

Figure 2: Elgg Social Network – Post-Graduation Course "Teaching in the 21st Century"

Selection of the Elgg platform was based on the following criteria: no costs, language (Portuguese), variety of tools, and user-friendly resources. The platform offers several Web 2.0 tools for knowledge management, like blogs, microblogs, file sharing, and tools for collaboration and communication. Content is displayed in personalized boxes, and can be organized according to the user's needs. Some studies on the use of Elgg in education have been done (Tairi et al., 2008, Ryberg, 2008, Dias, Oliveira & Alves, 2009); however, the authors found no studies on Elgg being used in continuing education of teachers.

Use of social networks was observed in class with the purpose of identifying possible difficulties as well as their positive aspects. For data collecting, the investigation used both quantitative and qualitative approaches. According to Creswell (2003), this type of analysis applies when quantitative and qualitative data are necessary in the same study – a necessity verified throughout the research. The quantitative analysis, however, only used Descriptive Statistics techniques, a field that comprises a collection of methods aimed solely at the organization and description of data (Silvestre, 2007).

Data collection was made through observation, questionnaire, and students' posts on the social network. Observation was non-structured, but this does not mean lack of focus in the analysis. It did not follow a structured instrument of investigation because that would demand a previous selection of the aspects to be eventually observed. Being rather restricted, structured observations might give the investigator only a partial view of the situation, or even a superficial one (Laville & Dionne, 1999). All considered the authors found the non-structured observation to be more adequate for this study, as it would allow for the apprehension of unpredictable situations, frequent as they are in educational settings.

Regarding the questionnaire, it was made up of three statements related to social networking, and eight referring to the network used in the course discipline. One of these in the second group was open to comments on the functionalities of the network and the student's participation.

Students' posts on the network itself were followed by means of the tools available in the platform. Creswell (2003) says that, regarding data, it is important to try to guarantee their consistency, and a strategy to do this is the triangulation of different sources. Therefore, the application of three different techniques aimed at assuring such triangulation, and more consistency to the results.

USE OF SOCIAL NETWORKS: BENEFITS AND DIFFICULTIES

The network was used to support academic activities, and as a means of communication between teachers and students, as well as among students. Initially, the students expressed their difficulties in using discussion forums, mostly regarding posting files and their links. Later on, we observed that use of the network became more natural for them. Yet, some had problems in identifying the correct space for posting their tasks – a sign of disorientation with the non-linear structure of the network. However, one could notice that the majority of the students felt comfortable using the network for educational purposes. In general, these individuals showed enthusiasm in becoming familiar with a current pedagogical tool in their training.

Data collected in the network itself were also analyzed. We could observe that comments and considerations made by students in the forums had excellent quality – presenting coherent and well-grounded arguments. This shows that the initial problems in using discussion forums were actually technical, not resulting from writing difficulties.

Use of micro blogs by the students also deserves to be discussed. They were used to: i) exchange information with teachers and classmates; ii) publish videos, sites and events related to computers in education; iii) express feeling and share novelties. By using the network functionality, e-mails between students and teachers was also relevant. The teachers often used e-mail to ask for corrections in activities, so that these could be discussed in a more personal manner. In general, students sent e-mails to justify their being absent from class.

As the discipline ended, other findings were obtained from a questionnaire answered by all the 27 students. These data are discussed next. Regarding use of social networks prior to the course, results are presented in Table 2.

Table 2: Use of Social Network prior to Post-Graduation Course

Options	Yes	No
Students (%)	74.07	25.93

These results show that most students had previously used social networks. The 20 individuals who answered “Yes” were then asked about which network they used. Figure 3 shows the percentages.

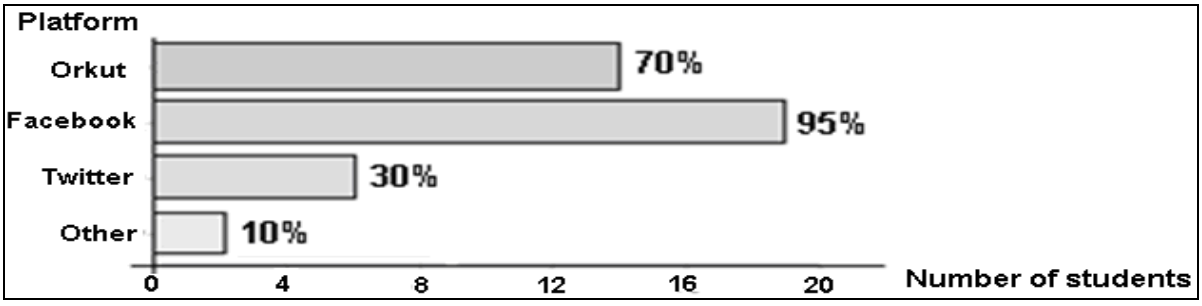

Figure 3: Platforms Used by Participants

This item of the questionnaire allowed for multiple answers, which explains why the total percentage is over 100%. Facebook received the highest percentage, followed by Orkut. In Brazil, Orkut used to be the most popular network, even when it was surpassed by Facebook elsewhere. However, by the end of 2011, Facebook had shifted this position in Brazil. Thus, results in the graph were coherent with reality in the country during the period of investigation. Two students checked the option "Other"; one answered MSN, and the other mentioned Linkedin.

The 20 students who had previously used social networks were also inquired about their purposes in using the medium. Table 3 shows percentages of the options presented in the survey.

Table 3. Purposes of Social Networking

Purposes of Using Social Networks	Students (%)
Making friends	65
Sharing photos	65
Sharing videos	20
Sharing comments	90
Selling products	5
Analyzing personal life of job applicants	5
Provide educational materials for students	25
Interact with students and colleagues	55
Build and share digital materials	15
Exchange professional experience with fellow experts	60
Other	0

In the list above, the students were allowed to check more than one option. Regarding education, two options are significant: "Interact with students and colleagues" and "Exchange professional experience with fellow experts," which received 55% and 60% of the answers. However, options "Provide educational material for students" and "Build and share digital materials" received lower marks, an indication that social networking for educational purposes was more applied in actions involving interactions than in designing and sharing of materials.

The next list of questions is directly related to the social network used in the course. For each of the seven statements, students should select one of the following answers: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree. In all tables below, 100% of participants correspond to 27 students.

The first statement is "It was easy to participate in the discussion forums offered in the network." Table 4 presents the results.

Table 4: Ease of Participation in Discussion Forums

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	33.33	29.64	33.33	3.70	0

Percentages in Table 4 comply with what was observed in class. As students grew familiar with the network, their difficulties decreased, but not to a level in which some of the individuals found forum participation easy. Thus, the percentage for "Neither agree nor disagree" is coherent. Concurrently, options "Strongly agree" and "Agree" correspond to 62.97%, indicating that interacting in the forum was easy for the majority. Nevertheless, only 33.33% of the subjects strongly agreed with the statement, which seems to indicate that, in

general, participation was considered easy, but not very easy. The authors think these results may result from the fact that discussion forums are a novelty for most teachers – an aspect observed during classes.

As for the statement "In general, it was easy to identify the correct space for posting activities", Table 5 shows the results.

Table 5: Ease of Identification of the Correct Space for Posting Activities

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	14.81	48.15	11.11	18.52	7.41

Again, percentages in Table 5 are coherent with the difficulties observed in class. Even though identification was easy for the majority (62.96%), seven people (25.93%) disagreed, and three (11.11%) neither agreed nor disagreed. It is important to remember that 25.3% of the students did not use social networks before the course. As mentioned above, those less familiar with the non-linear structure of social networks may be somewhat disoriented. Posting activities in different places from those indicated by the teachers is a good example of students' difficulties.

Table 6 presents data related to the statement "The tools presented by the social network are satisfactory."

Table 6: Satisfaction in Using Social Network Tools

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	33.33	44.45	11.11	11.11	0

Altogether, option "Strongly agree" and "Agree" add up 77.78%, which demonstrates that, for most, the tools were satisfactory. However, the specific percentage of option "Strongly agree" was not high, which may indicate that, in general, the tools can be improved for educational purposes.

Table 7 shows percentages related to the statement "Social networking contributed to the development of discipline activities."

Table 7: Contribution of Social Networking to Discipline Activities

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	59.26	18.52	11.11	3.70	7.41

Percentage for option "Strongly agree" indicates good acceptance of the network. Considering the two options "Strongly agree" and "Agree", the agreement percentage reaches 77.78%, a result that is coherent with what the authors observed in class. The other percentages can be justified by the technical difficulties presented by some students, as well as by the lack of experience in using digital resources to support academic tasks.

Results regarding the statement "Using a social network contributed to interactions with the teachers and fellow students" are shown in Table 8.

Table 8: Contribution of the Social Network for Teachers-Students Interaction

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	55.56	29.63	3.70	3.70	7.41

The 85.19% of agreement indicates that the network was quite relevant in promoting interaction among participants. The other percentages were considered pertinent to the situation. These data comply with the research carried out by Moreira and Monteiro (2010) which also showed that virtual spaces, such as ISN, used to support traditional learning, are significant inasmuch as they promote teacher/student and student/student interactions.

Table 9 presents results related to the statement "The possibility of sharing information by means of links, blogs, and microblogs on the network was important in the teaching and learning process."

Table 9: Importance of Sharing Information by Using the Network Tools

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	48.15	37.04	3.70	11.11	0

Although the percentage of "Strongly agree" was lower than in Table 8, the overall percentage of agreement was 85.19% as well, indicating that information sharing contributed in the teaching and learning process. Information management, supported by the integration of the various tools found in the ISN, was mentioned by Goldfarb et al. (2011) as a positive aspect of the pedagogical use of social networking. Besides, these results signal the value of horizontal relations allowed by the typical features of ISN, as pointed by Araújo and Assis (2011).

Finally, Table 10 shows results regarding the statement "The functionalities of the network enabled less hierarchical relations between teachers and students."

Table 10. Hierarchy Reduction in Teacher-Student Relations

Options	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Students (%)	44.44	37.04	7.41	3.70	7.41

These results indicate that, for most students, the network functionalities contributed to decrease student-teacher hierarchy. The possibility of establishing a community made up of teachers and students who shared information and resources was pointed by Goldfarb et al. (2011). According to these authors, ISN are encouraging and intrinsically democratic environments.

Analysis of the open question, which solicited comments on social networking, showed that, in general, the offer of a social network for educational purposes was well received by the students. Some of the comments, as the following, show that the initial difficulties were eventually overcome.

It was difficult for me to understand how to use the network. I had never used one, but I learned little by little (Student A);
For me, our network was a challenge. First, because I was resistant to this type of environment, not because I didn't like it, but for being afraid of not knowing how to use or interact on it. Later on, I realized that my difficulties and doubts were solved (Student F);

Although I had very little knowledge and domain of social networking, I could notice that, in the context in which we used it, it is of great important for communicating and interacting, not to mention its main aspect – using this resource in my educational practice (Student M).

For the most part, the initiative was a positive one and, as recommended by edWeb.net et al. (2010), it is important to disseminate promising experiments regarding the pedagogical use of ISN. In short, we conclude that the use of a network in the subject "Information and Communication Technologies in Education" was relevant for: i) developing activities proposed by the subject program; ii) interacting with the teachers and classmates; iii) sharing information by using tools available in the network; iv) reducing hierarchy in teacher-student relations; v) accomplishing the general objective of the discipline. Among other difficulties, we include: i) the identification of the correct space for posting activities; ii) posting files and links in the discussion forums.

FINAL REMARKS

ISN have the potential to collaborate in educational activities, as demonstrated in this case study. In the context of teacher training for the pedagogical use of DT, the authors think these technologies, besides their overall benefits, give teachers the opportunity to become familiars with a resource that can be applied with their own students.

Analysis of results of the survey showed that social networking was a positive strategy in developing and reaching the objectives of the discipline. As discussed, difficulties were observed; however, they may have resulted from lack of computer skills by some of the students. It is worthy mentioning that, despite their problems in participating in the forums, the discussions presented high-quality content.

Investigating beyond the social networking sphere, students were questioned about the contribution of the academic tasks in their training. To find out their opinion on this topic, the following statement was presented: "Activities proposed by the discipline contributed for your awareness and more grounded view of computers in education." The total percentage of agreement was approximately 85% (70.37% strongly agreed and 14.81% agreed). Two students (7.41%) neither agreed nor disagreed, and two others strongly disagreed. The positive aspects of the discipline pointed by the students include the following: i) wide range of technological resources and current theoretical basis; ii) group interaction; iii) social networking. As for the negative aspects, the majority found that time (32 h) was insufficient to cover the several topics which were unfamiliar to them. Next time the discipline is offered, this may be accounted for by reducing the number of tasks, for example

Finally, it is relevant to mention that the use of the Elgg platform, within the parameters used in this study, requires installation in a Server and technical maintenance, demands that usually require institutional support. This is a relevant factor to be considered, since not every school has the opportunity or interest to provide such a support.

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