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DESIGNING AN E-TUTORING SYSTEM FOR LARGE CLASSES: A MIXED-METHOD RESEARCH

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Abstract

This study aimed at assessing the perceptions of 167 teachers about the tutoring system adopted in an online training course involving teachers from 20 Schools of Sesimbra, Setúbal and Palmela counties. The course, called “Distributed Knowledge with Web 2.0”, was officially certified as a blended learning modality, with the duration of 50 hours, 41 of which occurred online in two editions, the first in February and the second in July of 2012, each one of them involving respectively 82 and 85 teachers, divided in four classes with about 20 trainees each. This blended learning course was designed at producing educational materials in digital format, and included autonomous and group activities, knowledge sharing and reflection. A learning environment, supported by the Ning platform, was set up. At the end of the course, the trainees answered to a pencil and paper survey, in order to evaluate the adopted online tutoring strategy. Additionally the trainees’ final reports contained evidence of how the trainees assessed the tutoring model component of the course; both the survey and the reports were the basis for this research. The results show that the teachers who attended the two course editions disclosed very positive perceptions about online learning, a modality they consider adequate to their current professional status and conditions. The trainees also showed their intention of, in the future, opting for blended training arrangements. Future developments of this study involve a content analysis of the tutor’s posts, in order to understand more accurately the tutor’s messages characteristics, in their social and cognitive dimensions.

Introduction

With the expansion of communication technologies, of learning management systems and dialogue tools, it has been possible to create opportunities for dialogue in online learning courses, to provide for more interaction between tutors and students and online tutoring has proved to be an important aspect in a direct influence on the course delivery.

The identification, description and categorization of the tutor's tasks has been studied by researchers such as Anderson, Rourke, Garrison and Archer, (2001), Berge (1995), Mason (1997), Paulsen (1995), and Salmon (2000). All of them are highly influential on the research on e-tutoring to the present days.

Berge (1995) refers to four fundamental mentoring functions of 1) management, 2) socialization, 3) technological and 4) pedagogical.

Paulsen (1995) and Mason (1997) both use the same taxonomy and identify three main tutor's roles: the organizational, the social and the intellectual. In the organizational context, Paulsen includes the functions of establishing objectives, setting rhythms, mentoring, facilitation, mediation; in the social component, Paulsen identifies the tasks of being a host and a facilitator; the teaching functions include discrimination, explanation, tutoring, mediation and challenge, the last one being very similar to the Socratic questioning, all are categorized in the intellectual role (Paulsen, 1995).

Salmon (2000) suggests a both-sided mentoring model that includes two main areas: technology and tutoring; in her model, the tutor's tasks, functions and level of assistance change as the learning progresses, through five stages, the tutor's support at each stage being essential for the transition to the next stage and will vary in quality and quantity, throughout the process.

Therefore, the e-tutor's essential tasks are well determined in the literature. Tutors are expected to support the students with technological issues, to organize and lead the students' learning, to moderate discussions, to encourage participation, to solve communication issues, to lead either individual or collaborative knowledge building, critical thinking, problem solving processes, to answer to the students' questions and to correct trajectories.

This study aimed at assessing the perceptions of 167 teachers about the tutoring system of an online training course involving teachers from 20 Schools. The course, called "Distributed Knowledge with Web 2.0", was officially certified and occurred in a Teachers Training Centre in the South of the country. This blended learning course was designed at producing educational materials in digital format, and included collaborative information sharing, reflection and knowledge building for professional development. A learning environment supported by Ning platform was set up. At the end of the course, the trainees answered to a pencil and paper survey and wrote their final reports, which were the basis for this research.

The number of trainees involved and the planning of an effective mentoring system was one of the major issues that had to be dealt with, due to the number of trainees involved. Thus, the success of the course became highly dependent on the tutor's organizational skills, which were key issues to perform the designed pedagogical model, being the tutor's support one of the main evaluation issues.

Literature review

The tutor's support and supervision of group work and collaboration among students is an axis of research in distance learning (Kirshner, Sweller & Clark, 2006; Kopp, Germ & Mandl, 2010), in order to determine the nature of the tutor's tasks and how to provide an adequate support to participation, interaction, knowledge construction and critical thinking. This area has been identified as a critical area of research (Berge & Mrozowski, 2001; Holmberg, 1985; Panda, 1992; Scriven, 1991; Zawacki-Richer, 2009).

Collaborative learning, participation and interaction are critical for the students' motivation and success, since only active participation can trigger interaction and collaboration, which make both students and their tutors visible and present to the community (Anderson, Rourke, Garrison & Archer, 2001; Shea & Bidjerano, 2009; Wilson & Stacey, 2004).

Moreover, research has also shown that many of the issues related to participation, interaction, collaboration and learning relate to an effective mentoring (Harasim, Hiltz & Teles, 1995; Khan, 2005; Salmon, 2000).

The tutor's thorough and timely feedback and responsiveness to the students' doubts and questions can be demanding (Connolly, Jones, & Jones, 2007). Stimulating the learning activities and avoiding dysfunctional collaborative activities is one of the tutor's functions that the students value most (Jorge, 2011). In fact, appropriate feedback leads to better motivation (Miller, 2009) and learning outcomes, which can vary, depending on the type of the feedback provided (van der Kleij, Eggen, Timmers & Veldkamp, 2012).

The tutor's personality and teaching style, the way he or she designs and develops the learning environment, the methods and strategies used to display content, the way of organizing the interaction and collaboration among students, of encouraging and nurturing the students' curiosity and creativity, influences the students' commitment to their both individual and collaborative tasks (Chan, 2002). These findings corroborate the association established by Deci, Vallerand, Pelletier and Ryan (1991) between certain personality traits and the e-tutor's facilitation style.

An effective instructor believes in the advantages of autonomy and interaction, is ready to accept new ideas, values and opinions, encourages different perspectives, keeps the community's cohesiveness, seeks convergence of views, identifies what triggers reflection, inspires and motivates the students (Barrows, 1992).

Hiltz and Turoff (1985) also refer to the effectiveness of tutors who encourage their students to become independent and seek for themselves the information to support opinions and hypotheses, who answer questions, suggest new paths, diagnose misconceptions, provide alternative explanations. These tutors have a theoretical framework based on autonomy, interdependence, interaction and collaboration (Comas-Quinn, de los Arcos & Mardomingo, 2012; Keegan, 1998; Paulsen, 1995).

Hamza and Nash (1996) established relationships between the personality and effectiveness of the tutor and found that the tutor's style influences the students' performance and the learning environment, making it more or less conducive to creativity and skills development.

Barrows (1992) considered that, in distance education, the strategies that promote interdependence among students, critical thinking and independent learning and benefit from the students' diversity concerning skills and experience are the most appropriate, which was corroborated by Furnborough (2012), who stated that collaborating with others helped the students to acquire a greater sense of their own control.

Students who have teachers with this profile are considered more competent and academically more motivated (Deci et al., 1991), creative (Hamza & Nash, 1996), disclose a deeper understanding of the content (Boggiano, Flint, Shields, Seelbach & Barrett, 1993), have lower dropout rates (Tait, 2004), better learning and levels of satisfaction (Swan, Shea, Fredericksen, Pickett, Pelz & Maher, 2000).

The instructor's personality and her/his teaching style are strongly associated, and there is a significant relationship between the instructor's personality and the degree of cohesion among students (Concannon, Flynn, & Campbell, 2005; Gao, 2006; Rodriguez, Sicilia, Sanchez-Alonso, Lezcano & Garcia-Barriocanal, 2011; Testa, 2011).

The literature on the tutor's roles and functions has established various taxonomies (Anderson, Rourke, Garrison & Archer, 2001; Berge, 1995; Mason, 1997; Paulsen, 1995), reflecting different conceptual, theoretical and philosophical perspectives on learning and, in particular, on learning in adulthood. However, it is clear that only with an active intervention by the e-tutor, who designs, organizes, facilitates and teaches, can the collaborative reflection and knowledge develop.

Online tutoring is a major aspect of online education with direct influence on the delivery of distance learning. Thus, as Lee and Figueiroa (2012) stated, the instructor plays an important role on the quality of the students' critical thinking and is an important factor in the students' success and resilience (Jorge, 2009; 2011; 2012). Online tutoring requires appropriate skills, competencies and attributes that include good writing skills, specific content knowledge, pedagogical knowledge and technological proficiency, which require experience (Goold, Coldwell & Craig, 2010; Maor, 2008), adequate training (Kopp, Matteucci & Tomasetto, 2012) and continuous staff development (Connolly, Jones & Jones, 2007), in order to establish differences between online and face-to-face tuition (Stickler & Hampel, 2007).

Research goals

Two main research goals were defined for this research, as follows:

1. Assess the ways of organizing discourse facilitation and interaction the tutor decided upon.
2. Understand the trainees' perceptions about the tutoring system in an online training course for teachers.

Method

Participants

This study aimed at assessing the perceptions of 167 teachers about an online training course involving teachers from 20 Schools of Sesimbra, Setúbal and Palmela municipalities. The training called "Distributed Knowledge with Web 2.0" occurred in two distinct periods in time: February and June of 2012 at the Training Centre Ordem de Santiago, in the South of Portugal. This blended learning course, developed in a Ning platform, was designed at producing educational materials in digital format using Web 2.0 tools, such as Webnode, Voicethread, Blogger and Google docs. The trainees were organized in groups, both of the same and of different disciplines, had to produce educational materials in group and, on a weekly basis, to discuss several topics. Most of these topics were associated with Web 2.0 tools and their educational and collaboration potential, in order to organize communities of practice and teachers' networks, for their professional development.

Only 2.5 % of the participants were younger than 30 years; 25.8 % were between 30-39 years old; 41.5 % between 40-49 years old e 30.2 % were 50 and over. As for gender, 30 % were men and 70 % were women. As for service time, 7.0 % had less than 4 years' service; 3.8 % between 5-7; 20.9 % between 8-14; 34.2 % between 15-22 and 34.2 % had more than 22 years' service. All the trainees had a personal computer and all but one had a private internet connection.

Instruments

Two instruments were used to evaluate the tutor's performance: a survey and the trainees' final reports.

The survey

At the end of the course, the trainees answered to a pencil and paper survey to evaluate the tutors' participation. Section 1 collected:

1. demographical information, covering gender, age and professional experience;
2. digital inclusion, such as computer ownership and internet access, and
3. digital skills, such as experience with Web 2.0 tools, experience with email, experience with online discussion groups and experience with online learning environments,

measured in a 4 points Likert type scale from 1: no experience; 2: until 3 years' experience; 3: 3 to six years' experience; 4: more of 6 years' experience.

Section 2 meant to assess the tutor's performance and included the following eleven questions organized in answers with an agreement Likert-type scale of four points (from 1, totally disagree to 4, totally agree):

1. The instructor clearly communicated the course objectives.
2. The instructor helped identify and acquire knowledge on each topic.
3. The instructor clearly communicated the timing for completion of learning activities.
4. The instructor helped understand and clarify issues.
5. The instructor helped us with the online discussions.
6. The instructor's actions reinforced the development of a sense of belonging to the community among course participants.
7. The instructor kept the trainees on task.
8. The instructor sustained the trainees' involvement and participation in a productive dialogue.
9. The instructor's feedback was timely.
10. The instructor's feedback was helpful.
11. The instructor encouraged the trainees to explore new concepts.

The trainees' final reports

In their final reports, the trainees had to organize the information according to generally established guidelines, which included feedback about the training courses' mentor. These qualitative data were collected and analysed through a Portuguese content analysis software produced in Aveiro University. This tool allows for the viewing, editing, linking, and organizing documents with non-numeric and unstructured data (Sousa, Costa & Moreira, 2011, p.49).

Results

The alpha reliability was highly accepted and ranged between 0.923 and 0.926, if any item were to be excluded.

The survey results concerning the tutor's performance are presented in Table 1.

Table 1: The tutor's performance

	Mean	Std. Deviation	N
The instructor communicated clearly the timing for completion of learning activities.	3.9371	.24354	167
The instructor helped identify and acquire knowledge on each topic.	3.8868	.37283	167
The instructor clear communicated the course objectives.	3.9182	.29700	167
The instructor helped in understanding and clarifying issues.	3.8553	.35286	167
The instructor's feedback was helpful.	3.9371	.24354	167
The instructor's feedback was timely.	3.9686	.17507	167
The instructor helped us with the online discussions.	3.8805	.32540	167
The instructor's actions reinforced the development of a sense of belonging to the community among course participants.	3.7925	.43684	167
The instructor helped sustained the trainees' involvement and participation of students in a productive dialogue	3.8742	.35117	167
The instructor kept / the trainees on task.	3.9182	.27487	167
The instructor encouraged the trainees to explore new concepts.	3.8491	.35912	167

The trainees' reports

The course was designed to promote collaboration, discussion and peer tutoring, in order to empower the students and reduce the tutor's intervention, so that the trainees assumed most of the responsibility for their learning.

When exploring the tutorials provided to the trainees to each session and respective Web 2.0 tool being practised, each student could ask her/his peers for clarification and help with the tutorial, for which the "Share your doubts" forum was set up. Only one third of the responses with a mean of three hours' time, considering that most of them were posted in the evening, were the tutor's.

In the main forum, the students had to share their views about the several Web 2.0 tools they had to use, such as their pedagogical potential. There were also several issues in discussion, such as the sustainability of a community of practice of teachers of the same discipline, where the trainees had to observe an example of these communities (<http://www.eslprintables.com>) and critically analyse the specificity of online communication, based on one presentation provided by the instructor.

Additionally, the trainees had to work in small groups to build up a site with Webnode, which had to include all the Web 2.0 tools used in the course.

This last assignment was designed so that each group should go through five phases:

1. to choose a representative;
2. to name the team's site;
3. the representative had to open the site and invite the other members to join in;

4. to develop the site collaboratively;
5. to publish the site’s address, the project description and its pedagogical assumptions.

The tutor deliberately had the students working and discussing at the various interaction and collaboration spaces and intervened online only when strictly necessary or the students called him for help. Whenever an activity was completed, he provided feedback to each student in particular and to the teams. He also gave general notice of each group accomplishments at the forum.

However, the students’ reports convey perceptions of a high level and excellent quality support by the tutor: 167 references regarding the tutor’s behaviour were analysed and categorized in the dimensions suggested by Anderson, Rourke, Garrison and Archer’s tutoring taxonomy (2001): Design and organization; Facilitating Discourse and Direct Instruction. Table 2 presents some students’ excerpts related to the dimensions described above.

Table 2: The tutor’s tasks

Tutor’s tasks	Example
Design and organization	“The instructor used a methodology of individual and group work, which focused on collaborative work, critical thinking, creativity, constant encouragement of the trainees’ autonomy and learning processes.” (Course 1, Trainee 6)
Facilitating Discourse	“a quite discreet but attentive instructor’s intervention giving space to the trainees (...).” (Course 1, trainee 13)
Direct Instruction	“The instructor gave constant and timely feedback. He was always present and provided (...) constant feedback and suggestions which proved all appropriate and meaningful.” (Course 2, Trainee 17) “The support was constant and timely. Being attentive without interfering too much, was always available, showing the way ahead, always with a word of encouragement.” (Course 2, trainee 12)

Discussion and conclusions

The results show that the 167 teachers who attended the two course editions have positive perceptions about online learning for their professional development; when explicitly asked about the delivery mode, they do not reject the idea of enrolling in future online training courses:

In fact, at the beginning, I had no high expectations on the course being held in b-learning mode, but this solution would ultimately be a huge advantage given the workload we face. (Course 1, Class D, Student 20).

Though other dimensions such as course structure and content have influenced the trainees’ positive perceptions about the course, the way the tutor designed the activities, both individual and collaborative and the interaction tutor-students and students-students has been mostly influential in the trainees’ satisfaction with the course:

From the trainer there was constant and timely support. Being attentive without interfering too much, he was always available, leading the way forward with a word of encouragement (Course 1, Class C, trainee 12).

The importance of online interaction both with the tutor and with peers through group work and discussion boards was clearly demonstrated in the trainees' reports:

No less important was the interaction between the trainees and the total availability of the trainer to help and answer questions, encouraging us to participate in each session. Our interventions were always valued, and our requests always attended (Course 1, Class A, and trainee 22).

The tutor's choice of the platform proved to be suitable, since NING is very intuitive and easy to use and this was an essential condition for the development of the proposed activities, even by the technologically less experienced teachers.

The platform was very structured and well organized, which allowed for an immediate appropriation of what was needed for each session (Course 2, Class A, trainee 8).

The platform provided by the trainer was very easy and motivating as it allowed us to explore, with time, some of its potential, as for the customization of our website and use of different workspaces. I believe that the platform was very well chosen, since it provided a simple desktop; it was very well organized, with different separate spaces, allowed for tutorials publication, materials produced by the trainer, and disclosure of the products produced by the trainees and for debates. (Course 1, Class A, trainee 20).

Being one of the inherent characteristics of the e-learning delivery mode, and as largely demonstrated by the cited references, the flexibility in time management, emerges as one of the aspects most valued by the trainees, though most of them have asserted that the course was challenging for its goals, contents and skills to be developed:

*Having in mind that we are already in the third term, it was not always peaceful to reconcile the training and the work at school. However, the possibility of a more personalized timing facilitated the tasks' completion (...)
(Course 2, Class B, trainee 10).*

The quality of feedback and its timing, as well as the support and guidance provided by the tutor were the most valued by the trainees; however, the strong connections established among the community highly contributed to minimize the initial insecurities due to the inexperience in such delivery mode:

The forum "Share your doubts" was of great help and worked according to what the trainer's goals; we progressively assumed the role of peer tutors,

which made us become more active and confident in helping our peers with their doubts and insecurities (...) (Course 2,, Class A, trainee 8).

The differences between different technologically skilled groups were tested for their influence upon the trainees' satisfaction with the tutoring strategies, resulting in significance levels higher than 0.01, indicating no influence of different technological skills on the assessment of the tutor's performance.

The tutorials designed by the tutor for each of the course modules provided for the necessary "sense of security" even for those unfamiliar with online teaching:

As for the available tutorials, their quality and relevance was undoubtedly a great support as well as all the information published at the platform, which clarified any questions that might persist. (Course 2, Class D, trainee 19).

The introduction of online learning environments in the teachers' professional development may respond to many of the problems that teachers face, such as lack of time, due to recently extended weekly workload and financial constraints.

The training should be learner-centred and significant, meaning that it must have a direct application and influence on the teachers' practices. It should also be designed in a constructivist logic.

The design of training for the teachers professional development "requires imagination" (Sachs, 2009) and its assumptions must include the person who the teacher is (Nóvoa, 1991), in order to motivate the teachers to invest in their professional development.

The design of a training program cannot be overly focused on the technical tools (Daly, Pachler & Pelletier, 2009). Instead, it has to be closely linked to the curriculum and effective classroom practices (Gooler, Kautzer & Knuth, 2000) and educational goals, where the technological tools are meaningfully infused, in order to improve the trainees' motivation to learn, so that the teachers' professional development can be "transformative, in terms of intentions and practices" (Sachs, 2009).

Such experiences induce perceptions of self-development and of positive influence on classroom practices and reflections, which are ultimately based on new experiences.

The issue of the teachers' work visibility in the community (other teachers, school boards and parents) provided by the use of Web 2.0 became evident in the teachers' final reports. This recognition of their work improved their confidence, self-efficacy and sense of fulfilment, which motivated them to continue to use innovative strategies in the classroom, as well as to a new spirit for developing technological knowledge.

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