

**Proceedings of the  
15th European Conference  
on e-Learning  
ECEL 2016**

**Charles University, Prague,  
Czech Republic  
27-28 October 2016**

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Print version ISSN: 2048-8637

Print version ISBN: 978-1-911218-18-0

E-Book ISSN: 2048-8645

E-Book ISBN: 978-1-911218-17-3

Published by Academic Conferences and Publishing International Limited

Reading, UK. 44-118-972-4148. [www.academic-publishing.org](http://www.academic-publishing.org)

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# A Teaching Model Using Social Network Sites

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**Abstract:** New media and social network sites (SNSs) currently play an important role in our society and in our daily practices (Boyd and Ellison 2008; Lister et al 2009; Watkins 2009; Papacharissi 2011). This necessarily affects the way we learn together, as explored in research spanning several areas. Regarding higher education, Facebook has an increasingly prominent position and is more widely investigated as an instructional tool in the college classroom than most SNSs (Tess 2013). From the perspective of teaching and learning, the Web 2.0 is seen as an enabler of a vision in which the student will find information potentially contradicting the knowledge acquired through the traditional formal learning process (Santos 2009). This feature leads to a continuous discussion of the facts, topics and subjects having an awareness of a common range of formal established knowledge shared in a given community and, at the same time, the joint reflection and debate within this same community. This new reality, in which the roles of the teacher and the student (or the roles of who teaches and who learns) become fuzzy, difficult to distinguish clearly, also brings the need for new ways to understand, describe, and explain the learning process and the ways in which it develops. In this paper we use the concept of social e-learning (Martins et al. 2012), building on the connectivist perspective (Siemens 2004, 2006, 2008). Social e-learning can be considered as a learning process whereby the Internet represents a space for participation, sharing, and collaboration, with new opportunities to create, share content, and interact with others (Bennett 2012) – an open door to build more open and flexible knowledge, where students build and rebuild their own path. A concrete format for its implementation is proposed and a genuine experience is presented and discussed. The social e-learning model presented in this article has been successfully applied in a training course in the field of business communication, held by Citeforma. Citeforma is a Portuguese vocational training centre, jointly managed by SITESE (a services workers and technicians union) and IEFP (the Portuguese Institute for Employment and Vocational Training).

**Keywords:** social learning, Web 2.0, social media, social network sites, education, learning communities

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## 1. Introduction

New media and social network sites (SNSs) currently play an important role in our society and in our daily practices (Boyd and Ellison 2008; Lister et al. 2009; Watkins 2009; Papacharissi 2011). This necessarily affects the way we learn together, as explored in research spanning several areas. Regarding higher education, Facebook has an increasingly prominent position and is more widely investigated as an instructional tool in the college classroom than most SNSs (Tess 2013:).

Areas covered include education and learning processes in the medical and health sector (Cain and Policastro 2011; Pimmer et al. 2012; Tower et al. 2015), humanities and the social sciences (VanDoorn and Eklund 2013), business studies (Arquero and Romero-Frias 2013), language learning (Kabilan et al. 2010) and teacher education (Wang et al. 2012), among many others, with several models and variables for adoption (Martins et al 2015).

From the perspective of teaching and learning, the Web 2.0 is seen as an enabler of a vision in which the student will find information potentially contradicting the knowledge acquired through the traditional formal learning process (Santos 2009). This feature leads to a continuous discussion of the facts, topics and subjects having an awareness of a common range of formal established knowledge shared in a given community and, at the same time, the joint reflection and debate within this same community.

This new reality, in which the roles of the teacher and the student (or the roles of who teaches and who learns) become fuzzy, difficult to distinguish clearly, also brings the need for new ways to understand, describe, and explain the learning process and the ways in which it develops.

From a technological standpoint, e-learning is supported by the Internet and its publication and communication services. From a pedagogical perspective, e-learning implies the existence of an interaction model between teacher and student – and in some cases an additional interaction model oriented to the interaction among students (Anderson 2002, Martins and Kellermans 2004, Gomes 2005).

In this paper we use the concept of social e-learning (Martins et al. 2012), building on the connectivist perspective (Siemens 2004, 2006, 2008). A concrete format for its implementation is proposed and a genuine experience is presented and discussed.

## **2. About social e-learning**

Connectivism, as proposed by Siemens (2004), can be considered as a new learning theory for the digital age. Central to this perspective is the assumption that knowledge is distributed in a network of connections. Learning, therefore, consists of the ability to build these networks and use them regularly (Downes 2007). It is in this context, in which the agent of the learning process is the center of a network, that the concept of Personal Learning Environment emerges.

It is possible to consider new scenarios for e-learning. These scenarios include the replacement of traditional Learning Management Systems (LMS) by other platforms with different architectures, integrating in the learning process tools that students are already familiar with from their daily interaction on SNSs. With these tools, available through SNSs and used by students in their daily practices, the learning process can become closer to an informal environment.

Despite tensions that are probably inherent to the differences between resources available through SNSs and traditional educational practices, we can consider the hypothesis that social e-learning can contribute to a greater autonomy on the part of students in the pursuit of knowledge, perhaps helping to find new ways for students to engage in individual and collaborative learning activities and providing new channels for the debate associated with the learning process (Alexander 2006, Armstrong and Franklin 2008, Junior and Coutinho 2009, Committee of Inquiry into the Changing Learner Experience 2009, Bennett 2012).

Ausubel, Hanesian and Novak (1978) argue that learning is largely a meaningful process, in which the student joins new knowledge to relevant existing knowledge. New knowledge must interact with the relevant concepts already existing in the student's perception of reality, and learning is therefore seen as a progressive process based on experience.

This active learning, based on the creation, communication, and participation in communities, is particularly suited to the profile of the current student - which is, mostly, a regular Internet user and an active participant in SNSs.

Social e-learning can be considered, in this sense, as a learning process whereby the Internet represents a space for participation, sharing, and collaboration, with new opportunities to create, share content, and interact with others (Bennett 2012) – an open door to build more open and flexible knowledge, where students build and rebuild their own path.

In this way of organizing the learning process, there is some evidence supporting the shift of control from the teacher to the students, with pedagogical approaches focused on them and their expectations, needs, and characteristics (Mota 2009). Additionally, the integration into a group connected and supported through a social network site probably enhances the creation of a sense of belonging and group cohesion, allowing for the group to continue its activities for as long as the members wish to – even after the official conclusion of a specific learning process.

Social e-learning enables the creation of more personalized learning environments, adapted to student profiles, and places at the teacher's disposal a range of free tools for communication and simultaneously promotes the

group's integration in virtual communities with shared interests and needs (Junior and Coutinho 2008; Santos 2011; Martins et al. 2012).

The implementation of social e-learning solutions enables the acquisition of skills that can therefore probably exceed the actual scope of traditional learning models, while reducing the fixed costs of education and training (Martins et al. 2015).

### **3. Methodology**

The above literature review allowed us to discuss the current situation of e-learning, with its main advantages and challenges. This review also allowed us to introduce the concept of social e-learning and discuss some related trends. We now present a design proposal for implementing a social e-learning model, using a design science methodology.

This methodology is commonly used in engineering and computer science research, applied to the creation of models, designing processes and solutions. The design science approach can be used to conceive and validate systems that are not yet operational, by creating, combining, or altering processes, software, and methods to improve existing solutions (Lacerda et al. 2013).

The design-science helps to understand the behavior of information systems by creating new and innovative artifacts (Hevner et al., 2004). Such artifacts, depending on the research, are widely defined by constructs, models, methods and instantiations. In design science, as opposed to explanatory science, academic research can be seen as a quest for understanding and improving human performance (Van Aken, 2005), which constitutes one of the possible applications of artificial life as a discipline and this research in particular.

Hevner et al. (2004) have introduced a set of guidelines for design science research within the discipline of Information Systems. In this dissertation (following the guidelines), an abstract social e-learning model will be considered an artifact. The artifact was validated by a case study.

### **4. Implementation model**

The implementation of a social e-learning model can be technically supported by any SNS that allows the creation of private groups, such as Facebook (Santos 2014).

The model we propose has two moments requiring direct, face-to-face, interaction between teacher and students. One occurs at the beginning of the course, in a presentation session. The other is the final session, when the global evaluation takes place.

The initial session provides a moment of physical interaction between the participants before the virtual iterations begin, to explain the course outline and to contribute to an easier inclusion of members in the SNS group, namely through:

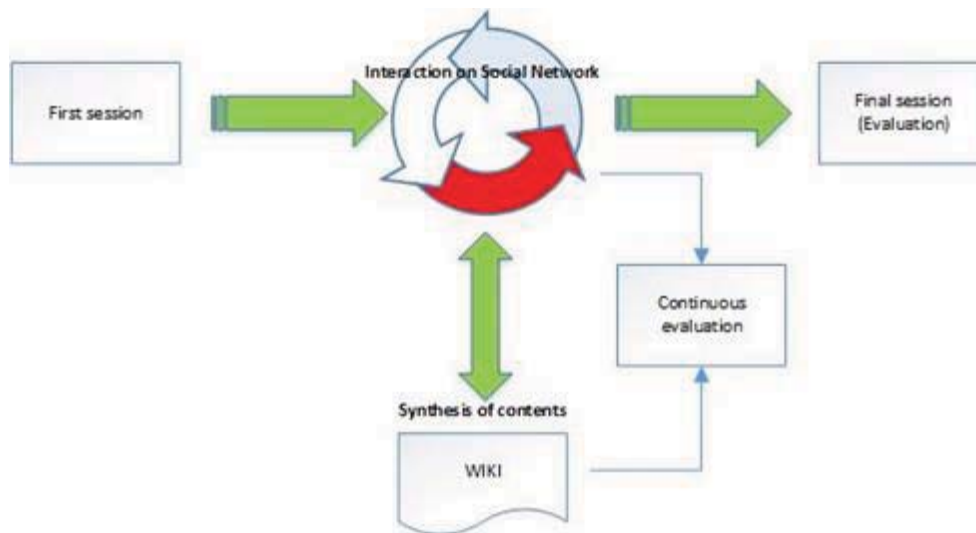
- The creation of personal accounts on the SNS, in the event that a student does not already have an account;
- The inclusion of students in the private group created for the course;
- Accepting the invitation to enter the private group;
- The invitation for each participant to make at least one post, with his/her personal presentation, during the first week.

After the initial week the teacher introduces in the private group the topics and subtopics of the course according to the outline. The teacher introduces posts about the subject and encourages students to reply and complement each topic by inserting comments and supporting materials, such as links, text, image and video.

Contents may have different shapes and levels of theoretical depth: books, texts, academic papers, movies, quotes, or observations in short sentences can be used. Upon completion of each topic, the teacher creates a wiki page (using Google Docs, for instance) with the conclusions and contributions of all members, filtered according to what is theoretically and scientifically accepted, and shares the document in the area where all students have read and write permission.

In the final session a written examination is held, focusing on the content shared and discussed during the course.

Figure 1 shows the general structure of a course following this model.



**Figure 1:** Social e-learning model

The teacher should ensure the pace of discussion and presentation of materials, compliance with the outline of the course, and stimulate individual research for information, promoting a self-learning attitude.

Although the teacher is essentially a facilitator, focused on helping the group to interact and progress in its own way, observing its behavior and contributing occasionally with content, he should intervene whenever:

- There is a shift away from the topics connected with the subject;
- There is a significant loss of quality and scientific precision in the discussion;
- A significant slowdown in group activity occurs;
- It is necessary to strengthen or enforce the rules of participation.

At the end of each topic and after validating student contributions, the teacher is responsible for:

- Completing the contributions;
- Developing an organized summary of contents;
- Creating the wiki page;
- Evaluating students.

The student is expected to conduct his/her own individual desk research, to look for information related to the topics of the course, to contribute with relevant information in the private group and discuss it, participate actively in the group's activity, and encourage the participation of all other stakeholders.

It is assumed that students have availability to participate in the group's activity every two days, as well as to personally attend the first and final sessions. Courtesy toward other members of the group and respect toward different opinions, at all times, are essential prerequisites.

As with other learning models, student evaluation is both qualitative and quantitative (e. g. final grade = participation \* 0.4 + written examination \* 0.6). The evaluation takes into consideration the result of the written test (online or offline) and the quality of participation and interactions, considering components of attitude and level of participation in the SNS group, for instance.

## 5. Implementation case study

The social e-learning model presented in this article has been successfully applied in a training course in the field of business communication, held by Citeforma. Citeforma is a Portuguese vocational training centre, jointly managed by SITESE (a services workers and technicians union) and IEPF (the Portuguese Institute for Employment and Vocational Training).

This institution has played an important role in innovation in training in Portugal. Examples include the introduction of training courses and, more recently, the creation of a training offer in blended learning (b-learning), combining face-to-face interaction in classroom with computer-mediated activities, using its own methodology and format.

To better fulfill its mission while lowering costs and reaching a wider audience, Citeforma decided to continue its innovation process, focusing on the use of new technologies in its offer and activity. This decision led to the implementation of the course described herein.

The course promotion and selection of students was done institutionally and also through Facebook, with invitations to the network of friends. The guidelines for participation, the course duration, the dates and the evaluation rules were published in advance, through the institutional Citeforma website.

Seventeen participants were selected. Of these, 3 (17.65%) had a master's degree, 11 (64.7%) a bachelor's degree and 3 had no higher education degree; 14 (82.35%) were employed and 3 (17.65%) unemployed.

As defined in the course outline, the presentation session required direct, face-to-face interaction between teacher and students, in a classroom.

The main course objectives were:

- Understanding the importance of communication processes in organizations;
- Reflecting on the various forms of business communication;
- Deepening the most significant aspects of communication policies;
- Understanding some of the fundamental communication technologies.

As the implementation of this course must be considered as a first stage in testing the proposed social e-learning model, good research practices were considered, controlling for variables not directly associated with the methodology that could potentially influence the participants' evaluation of the course. It was therefore decided to use a course topic and outline that would allow for a representative group of participants, ensuring comparability with the courses regularly held in the traditional model of teaching and learning.

With this in mind, the course had a total of 25 hours, over one month. The presentation session and the final session, held in classroom, were scheduled for a Saturday – a common practice in other Citeforma courses. The remaining sessions were held through the Facebook private group, as considered in the model. Topics and subtopics of the course were introduced progressively, according to the sequence of the course outline.

The course topics were the following:

- The role of communication in the strategy of organizations;
- Business policies, mission, positioning and communication policies;
- Technologies and communication tools in organizations;
- Online marketing;
- Web design;
- Web development technologies and tools;

- Monitoring resources and evaluating communication results.

The teacher placed the initial posts for each topic. The students then added comments and other information (such as links, text, images, or videos), supporting the discussion and the interaction between the group members. Figure 2 shows an example of discussion on the first topic.



Figure 2: Interaction example

At the end of each topic an overview of contributions was created, using the teacher’s and students’ contributions. A wiki page was created, where the overview was shared. Figure 3 shows a printscreen of the wiki homepage.



Figure 3: Wiki homepage

The final session was attended by 13 students. The four students who missed the final session did not complete the course, neglecting to deliver the assignment prior to the final session. The course has therefore certified a total of 13 students.

The average grade, on a 0-20 scale, was 16.84, with a minimum score of 14 and a maximum score of 19.

The results of the student feedback questionnaire at the end of the course, on a scale from 1 to 6, are:

- Overall rating: 3.91;

- Objectives and course topics: 3.55;
- Methodology and resources: 3.56;
- Teacher: 4.31.

The end-of-course teacher's evaluation, also on a 1 to 6 scale, was:

- Overall rating: 4.40;
- Organizational issues: 4.50;
- Quality, interest, and participation from the group of students: 3.71.

Note that the students' evaluation regarding aspects directly related to the course implementation are below the average evaluation of the courses held in the same year by Citeforma, which are:

- Overall rating: 5.50;
- Objectives and course topics: 5.24;
- Methodology and resources: 5.21.

The lower average evaluation of this course compared to the other Citeforma courses might be related with the absence of interpersonal interaction during the course (with the exception of the presentation and final sessions). We consider that this can have at least two implications: i) it may reveal new kinds of obstacles in the learning process (for instance, deriving from an asynchronous communication channel); ii) the students value the classroom interaction, with direct interpersonal communication (not in the learning process, but as a socially gratifying experience).

This was the first course held by Citeforma using such a model, contrasting with courses based completely on classroom sessions. The implications suggested above are consistent with qualitative feedback provided by the students in the final session. But further research is necessary to explore the interaction between these variables.

One variable that can be adapted in order to further explore a connectivist model, if the implications suggested are confirmed, relates to the students' initial expectations regarding the role of the teacher. One adjustment might be to use the first session to adapt the expectations of students towards the teacher's role in the group's activity – building on a model in which the teacher's intervention is not necessarily central, and the students' participation is fundamental, in order to create a regular discussion and group activity.

## **6. Final considerations**

We present a model for teaching using social network sites, supported by the concept of social e-learning. This model was tested through the implementation of a pilot course in a vocational training centre.

Although there are still areas for improvement, the implementation experience of this model allowed us to conduct an initial empirical test of the proposed model. This experience allowed us to learn from the process and to confirm that social e-learning models may lead to a scenario that opens the door to a reformulation of the roles played by teacher and students. Such models could allow accessing knowledge and acquiring skills outside the scope of traditional learning models – and at the same reduce the fixed costs for education and training. Additionally, we can also underscore the fact that the integration in a group, on a social network site, can contribute to the creation of a sense of belonging and team spirit, allowing the group and the learning context to endure over time, while the individual participants consider it to be useful and adequate.

The next steps in the development of this model relate with theoretical and practical issues, namely:

### *Training of the teacher*

The experience and the data obtained so far show the need to focus on developing the role of this new kind of teacher. According to this new paradigm, the teacher is facing new challenges – like the possibility that the group discussion takes unpredictable directions, not familiar to the teacher. This effect has to be articulated with the

need for technical and scientific validation of information found on the Internet, making the teacher also largely someone who is continuously learning.

We developed a pilot course addressing these issues, in 2014, in close collaboration with IEPF (the Portuguese Institute for Employment and Vocational Training). This course sought to familiarize teachers with social e-learning, helping them to:

- Develop effective content on several thematic areas and a training program using the social e-learning format;
- Prepare training sessions according to the social e-learning characteristics;
- Successfully implement training offers using a social e-learning model;
- Evaluate the results by designing and producing assessment tools.

Additional research on these topics is fundamental, however.

*Study the impact of the process experienced by students in terms of their cognitive strategies for learning*

The data obtained so far indicate that the formative process experienced by the students is substantially different from what occurs in other teaching models. Therefore, it is important to develop further research to explore this process and to determine the best strategies and best practices to be adopted by students.

*Explore how a social e-learning model can be implemented in large institutions*

In particular, how can this model contribute to the acquisition of professional skills beyond the scope of traditional learning models, and contribute to lowering the costs of education and business training.

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