Review.

Facebook as a supporting tool for collaborative/cooperative teaching

Luis Garcia[1] And Maria João Ferreira[2].

[1]Universidade PortucalensePorto, Portugal
luisgarcia@marcadagua.com
[2]Dep. Inovação Ciência e Tecnologia,Universidade PortucalensePorto, Portugal
mjoao@uportu.pt

Social networks conquered their space in our society's daily life. Therefore, we couldn't ignore their potentialities as far as collaborative learning was concerned. When monitoring the implementation and acceptance that these new spaces of communication, such as Facebook, brought to cybernauts we were faced with an extra motivation for using these tools in the context of the teaching/learning process. Understanding if learners were themselves motivated to participate and take advantage of these platforms, as an ease for their learning process, seemed like a question worthy of reflection.

I. INTRODUCTION

In Portugal, over the last years, a substantial effort has been done so as to introduce technology in education, resulting mainly from an operationalised policy with special focus in the last years of the first decade of the 21st century. This modernisation made it easier to integrate the Information and Communication Technologies (ICT) in schools in a way that we feel should not be neglected as an attempt to improve students' results arising from their learning processes.

If, on one hand, with the massification of Internet access, and more specifically access to Web 2.0, tools that can be used to positively interfere with the teaching/learning process have popped up; on the other hand, the collaborative/cooperative learning where learners are invited into forming groups to solve tasks that, potentially, connect different areas of expertise to enrich both themselves and the work done with experiments and each group element's knowledge (Azevedo, 2008) leads to, according to Piaget (Piaget, 1998), each individual being able to do reciprocity operations, overcoming his egocentric thought, without which he would be unable to understand the other, since he has acquired the habit of talking and speaking to himself, making the collaboration/cooperation impossible. In this context, this article aims to identify the potentialities of one of the emerging tools of Web 2.0 – the social networks – with specific focus on the example of Facebook as a supporting tool to collaborative/cooperative work.

II. THE PROBLEM AND THE REASON FOR WHICH IT IS IMPORTANT OR RELEVANT

Individual work has been a more or less consensual constant in schools in contrast the current teacher should encourage group work and promote conditions that favour autonomous thinking so that learners are no longer dependant on any sort of academic authority and can develop skills and resources for themselves (Okada, 2001). Although group work is encouraged, it is not always directed to the formation of content derived from the cooperation of all the elements of the group. Nevertheless, individual work seems to lose in efficiency when compared to the result of a group that has, in fact, cooperated. According to the studies of Doise and Mougni, pair work is more efficient than individual work (Dillembourg *et al.*, 1995). This group work does not necessarily mean that you are in the presence of the operationalisation of a collaborative/cooperative learning. This derives from a situation where two or more people learn or try to learn something together so as to comprehend all the possible approaches, bearing in mind that collaboration involves the construction of meaning through the interaction with others, characterized by joint efforts for a common goal (Littleton *et al.*, 1999).

The operationalisation of the Computer Science Networks theme has led to a more or less coherent reality when analysing several classes. The contents are extensive and can become hard for learners to understand making their results, at the end of the thematic units, extremely different from what teachers wanted at first. Therefore, we think we need to find answers that enable the teaching/learning process and inherently contribute to students' better performances and one of those might be the collaborative/cooperative teaching.

III. THE OBJECTIVES AND ASSOCIATED INVESTIGATING TOPICS

This assignment focus on collaborative learning based on Information and Communication Technologies (ICT). It is our intention to develop a model that allows the use of the social network Facebook as a collaborative/cooperative learning environment.

This assignment main goals are:

- Define needed criteria for the development of a model that allows for an optimised teaching/learning process based in collaborative/cooperative work, allowing for the correct definition of the roles of individuals, making use of a social network.

- Development of a model based on the social network Facebook.

- Implement/validate the model through a case study.

IV. VIRTUAL LEARNING SPACES

Although our choice has fallen on Facebook, we are face to face with a reality in which several Web platforms have already been suggested as a basis for (distance or collaborative) learning. Therefore, a question that might be placed is why are proposals such as Moodle being used and not Second Life or even Google Docs as a learning environment.

Using constructivism as a basis for the teaching/learning process and the idea that the learning should develop with the learner producing and not simply absorbing contents and knowledge will lead us to the conclusion that nothing is missing in the specific case of Second Life (Neto, 2008). Taking part of a space that allows for interaction, the learner might learn something new and join all his/her background of experience to that learning. Each new fact or experience is assimilated into a live net of comprehension that exists in that same learner's mind who will then build his/her own learning (Toledo, 2003).

It is quite feasible to assess the productions of learners, such as objects, scripts and presentations. However, even if we think that learning should be assessed and measured in a more traditional fashion, it is possible to use objects with questions and answers in Second Life, measure when the avatars visit certain space and touch, for example, an object. We do not need to get out of Second Life so as to be certain that the student learns; after all learning is not a matter of how many times a student clicks in a page (Neto, 2008).

Closed virtual spaces such as AulaNet or even Moodle are isolated isles. However, the movement for the creation of knowledge is characterized by the encouragement of a collaborative attitude between students and teachers during the process of creating and sharing knowledge (Souza, 2005).

The idea of a learning environment in the Web stresses the participation of the learner in the construction of his/her own space. If the learner is, nowadays, seen not only as a consumer but also, and mainly, as a producer of knowledge, it makes no sense to impose a rigid structure to rule his/her productions. The learning environments have the potential to join different ways of learning, such as the informal learning, the learning through work and the learning based on problems. Opened spaces like Second Life allow students to build the space they desire to cross these different types of learning (Neto, 2008).

Institutions and teachers that control these virtual worlds would have gained advantage as well as the opportunity to design new creative and unpredictable forms of learning. Web 2.0 tools should quickly transform traditional learning environments. The only doubt is whether we will continue to need those or if we aren't already watching the beginning of the end of traditional learning environments.

V. PROPOSED METHODOLOGY FOR THE RESOLUTION OF THE PROBLEM

Hereupon, we wish to make a systematized description of the steps we need to follow, of the entire action plan to prepare and of the criteria to follow so as to achieve the defined goals. It is also meant to describe the strategies to be used in the researching operationalisation.

Resorting to the use of the case study adapts to our investigation; when the researcher is confronted with complex situations in a way that makes the identification of the supposedly important variables difficult, when the researcher looks for answers to the "how?" and "why?", when the researcher seeks to find interactions between important factors of that same entity; when the goal is to describe or analyse the phenomenon, to which we have direct access, in a profound and global way, and when the researcher intends to apprehend the dynamics of the phenomenon, of the program or process (Yin, 1984).

A case study is defined bearing in mind the characteristics of the phenomenon which is being studied and also of the set of characteristics associated to the process of data collection and the strategies for their analysis (Yin, 1984). We can consider the case study as an umbrella term to a family of research methods whose main concern is the interaction o factors and events (Bell, 1989).

It is an investigation that is particularistic, that is to say, that deliberately addresses a specific situation that is supposed to be unique or special, at least in certain aspects, seeking to find out what is in it that is more essential and characteristic, thereby contributing to the global understanding of a certain phenomenon of interest (Ponte, 1994).

With this theoretical framework and with the goal of contributing to the operationalisation of a collaborative learning platform, taking advantage of the resources available from the social network Facebook, we intend

to observe and analyse four training groups – two groups of youngsters and two groups of adults – during the sessions based on the curricula related to the theme Computer Science Networks.

The observation will be done during the operationalisation of the thematic unit of networks that will have the time length of 50 (fifty) hours. The training groups are formed by 20 (twenty) trainees of Centro de Formação Profissional de Tomar. No changes will be done to the curricula nor will different tasks from the usual ones be asked in the operationalisation of this thematic unit.

Therefore, we intend to carry out a naturalistic and participative observation. Data will be registered using the resources available from Facebook as well as from the tasks done in the classroom by the trainees.

VI. EXPECTED RESULTS

In a purely theoretical perspective it seems evident that the trainees have a much better adaptation when the Web platform meets their needs and motivations. This seems to be, undoubtedly, the case of Facebook.

Thus, we intend to assess, through the development and implementation/validation of a model which will use this web platform, if the utilization of this social network will contribute to the formation of an environment propitious to occurrence of a collaborative learning that will be organized as an integration, sharing and collaboration space between the respective users, potentially, all the trainees.

Completely aware of the implications of the small dimension of our sample, we are still sure that the data to be collected in the conclusion of our case study will confirm the advantage of using Facebook as a vehicle to promote the cooperation between trainees with the intention of improving their own academic results. We believe in the potential of this social network as a collaborative learning platform.

VII. REFERENCES

AZEVEDO, A. (2008). Formação Automática de Grupos em ambientes de Aprendizagem Assistida por Computador .

BELL, J. (1989). Doing your research project: a guide for the first-time researchers in education and social science. Milton Keynes, England: Open University Press.

DILLEMBOURG, P., BAKER, M., BLAYE, A., and O'MALLEY, C. (1995). Learning in humans and machines: toward an interdisciplinary learning science. Oxford: Elsevier.

LITTLETON, K., And HÄKKINNEN, P. (1999). Learning Together: Understanding the Processes of Computer-Based Collaborative Learning. Amsterdam: Pergamon.

NETO, J. (2008). O uso do Second Life como ambiente virtual de aprendizagem. GT2 Jogos electrónicos e educação .

OKADA, A. L. (2001). Aprendizagem Colaborativa. Curso de Pós Graduação em Informática Aplicada à Educação, Universidade Mackenzie, São Paulo. Retrieved September 10, 2010, from http://www.projeto.org.br/mapas/gac.htm

PIAGET, J. (1998). O espirito de solidariedade na criança e a colabpração internacional In: S.Parrat. Sobre a pedagogia - textos inéditos. São Paulo: Casa do Psicólogo.

PONTE, J. P. (1994). Faculdade de Ciências. Retrieved July 10, 2010, from Universidade de Lisboa: http://www.educ.fc.ul.pt/docentes/jponte/docs-pt/94-Ponte(Quadrante-Estudo%20caso).pdf

SOUZA, Maria Carolina Santos e BURNHAM, Teresinha Fróes. (2005) Compondo: Uma Metodologia para produção colaborativa do conhecimento em educação a distância IN: Educação a Distância no contexto brasileiro: algumas experiências da UFBA/ coordenadoras, Bohumila Araújo e Katia Siqueira de Freitas; autores, André Lemos [et al.]. Salvador: ISP/UFBA. Retrieved January 10, 2010 from http://www.proged.ufba.br/ead/EADnaUFBA.pdf

TOLEDO, Francisco Sodero. (2003) Pedagogia online. Retrieved October 19, 2010 from http://www.lo.unisal.br/nova/ead/artigo2.html

YIN, R. (1984). Case study research: Design and methods. Thousand Oaks, CA: Sage Publications.