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Social network as a means of sharing open educational resources in Higher Education

As redes sociais como forma de compartilhamento de recursos educacionais abertos no Ensino Superior

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Abstract

This article is about social networks and open educational resources as means of exchange and collaboration for higher education. It highlights the issue of students as participants in the construction of new knowledge, from content presented in class through discussions mediated by the professor and integration of each participant with their own experiences and characteristics from reality and historicity from that moment. It searches, through social networks and open educational resources, new

elements which favor the spread of academic culture, university, currently entered into denominations such as: network society, knowledge society or information society. In common in their definitions there is the change of the educational paradigm which assumes that the student is a passive subject who will only have access to information through the professor's hands, to a new theoretical positioning. The networks are used by the community to share ideas, opinions, and in educational contexts, for sharing computerized educational resources and with authors such as Andres (2000), Bruffee (1999), Downes (2007), Johnstone (2005) and others. The interdependence skills, exchange of ideas and debates with the strategy of collaboration can also be encouraged through the mediation of technology. From several studies on the topic some recommendations are presented so that the educational resources meet international standards of production surpassing the mere text digitization. The use of educational resources can mean an improvement on the proposals of hybridization of teaching in higher education institutions, by allowing a relaxation of the teaching-learning process which overcomes the boundaries of traditional and formal education.

Palavras-chave: Social network. Open educational resources. Student. Professor.

Resumo

Este artigo trata de redes sociais e recursos educacionais abertos como maneira de troca e colaboração para o Ensino Superior. Destaca a questão dos alunos como participantes da construção de um novo conhecimento, a partir de conteúdos apresentados em classe, por meio de debates mediados pelo docente e integração de cada participante com suas próprias experiências e características da realidade e da historicidade daquele momento. Busca, por meio de redes sociais e recursos educacionais abertos, novos elementos que favoreçam a propagação da cultura acadêmica, universitária, hoje inserida em denominações como: sociedade em rede, sociedade do conhecimento ou sociedade da informação. Em comum, em suas definições, possuem a alteração do paradigma educacional que pressupõe o aluno um sujeito passivo que apenas terá acesso à informação pelas mãos do professor, para um novo posicionamento teórico. As redes são usadas pela comunidade para compartilhamento de ideias, opiniões, e, no contexto educacional, para compartilhamento de recursos educacionais informatizados, com autorias como Andres (2000), Bruffee (1999), Downes (2007), Johnstone

(2005) e outros. As habilidades de interdependência, troca de ideias e debates por meio de estratégias de colaboração podem ser incentivadas pela mediação da tecnologia. A partir de estudos sobre o tema, apresentam-se algumas recomendações para que os recursos educacionais respeitem padrões internacionais de produção, superando a mera digitalização de textos. O uso de recursos educacionais pode significar um progresso nas propostas de hibridização do ensino em instituições de Ensino Superior, por possibilitar uma flexibilização do processo ensino-aprendizagem, que supera as fronteiras da educação tradicional e formal.

***Keywords**: Redes sociais. Recursos educacionais abertos. Aluno. Professor.*

The social networks as repositories of open educational resources

In the end of the first decade of 2000, it is possible to see, in a very intense way, the learning network with educational purposes is proliferating. That was possible due to the knowledge of theoretical elements that point to new educational technologies, as well as to the popularization (in terms of costs and access) of the information and communication technologies. To Harasim (2005, p. 20):

> Network is the word that describes the shared spaces formed by computers interconnected worldwide by computers and satellites signals. With the help of the networks, the educators may be able to create effective learning environments in which teachers and students in different places build together the understanding and the competencies related to a certain subject.

The names: network society, knowledge society or information society have in common in their definitions the alterations of the educational paradigm that assumes the students as passive subjects that will have access to the information through the teacher's hands in order to have a new theoretical positioning.

Learning networks can be local, institutional, corporative, or governmental, and they have in common the mediation of computer, so it is called CMC (computer mediated communication). Since the majority of communication is made in an asynchronous form, allowing the participant to follow his own pace, they are proper to support the teaching strategies centered on the student.

The networks are used by the community to share ideas, opinion, and in the educational context, to share the computerized educational resources. Open resources or OERs (open educational resources) are every kind of educational resource that is available to be freely used, shared, and adapted.

The research about the influences of the social networks on learning is not recent in Brazil as the work of Machado e Tijiboy (2005), with a cartographic analysis of different social softwares highlighting the difference between social software and social network, shows:

> In social softwares, the communities work as a modern discussion list, a more personalized one, in which the social connections (friends) manage and potentiate each one's connections with the others. There the rules are defined according to the values created by the participants themselves in a self-reguled system (MACHADO; TIJIBOY, 2005, p. 6).

The social networks are clusterings of people that are registered in certain social softwares after the registering and adding their friends who start to do the same, quickly increasing the number of users. Each software develops resources and offer several services such as blogs, photo albums, friends' gallery, and also form their networks with many purposes. About the big potential of networks interaction, Machado e Tijiboy (2005) observed in their research the spotlight to those people that have a bigger articulation power, with bigger mobility and speed in the connections, the so called hubs, which are people who have some position inside the network with a big number of contacts.

If the teacher assigns those people to lead some specific collaborative work of professional content, the network will take a definitive role in the knowledge building, as Martins' research et al. (2009) shows. The 50 participants of his research, students of on-site graduation courses showed in their answers the positive contribution of the social networks use in learning in the form of discussions, information sharing, sharing of certain problems, group meeting through MSN, case studies (third parts examples), other experiences shared.

Virtual learning environments as repositories of OERs

The interfaces evolution used in distance learning, the convergence among the student profile of on-site and distance teaching, and the legal incentive to university teaching hybridism in Brazil caused the fast proliferation of computerized educational resources.

As a consequence of that, several studies about the subjects have been conducted and their conclusions present recommendations to make the educational resources have international standards of production surpassing the mere texts digitalization.

Such educational resources are made available, in many cases, in structures called repositories. Some of them are open such as the CAREO and MERLOT which were created in the United States, some other are closed such as the ARIADNE, created in Europe.

The educational resources are not often physically stored in those repositories. On the contrary, the repositories store metadata of the objects e make the connection (link) with the object in another place.

The virtual learning environments (VLEs) are management systems of educational resources deposited in them. That denomination is derived from the one used by the IEEE, of the LMS (Learning Management System), which registers information, allowing the management of a course: registers users, registers access priorities, makes usage statistics, stores user information, allows communication, records

and releases online courses through a timetable, and generates reports to the provider-institution.

Coutinho (2009), in his article entitled *Online learning through structures of courses* presents the history of LMS in Brazil and in the world, highlighting the Moodle, which has a general public license, as well as the dotLRN, and the Sakai Project. This author also affirms that some teachers also consider the possibility to use the Web 2.0 as a platform, since they are able to have the desired functionalities through adjustable modules or available systems based on the Web 2.0. By this mean, internet starts to be the platform itself. The used environments can follow strictly the international standards or not, depending on its use (commercial, educational, corporative) and the intended reach in the project and development.

In Europe, the ARIADNE stands out as a repository created for knowledge sharing and international cooperation in teaching. It started in 2006 by the European commission of telematics and consists in a database that contains the metadata and a repository that has the open educational resources. The registered users at ARIADNE[1] are authorized to insert documents with their corresponding metadata, research documents, and make downloads.

Also standing out as a successful and pioneer example, of open character, the (MIT) Massachusetts Institute of Technology, with its Open Course Ware[2] shares contents of higher education courses without the need of making the user subscribe or register.

In Figure 1, it is possible to see an example of open course ware specific for the science teaching in university prepared by Dr. Sanjoy Mahajan.

[1] Available at: <http://www.ariadne-eu.org/>.

[2] Available at: <http://ocw.mit.edu/OcwWeb/web/about/about/index.htm>.

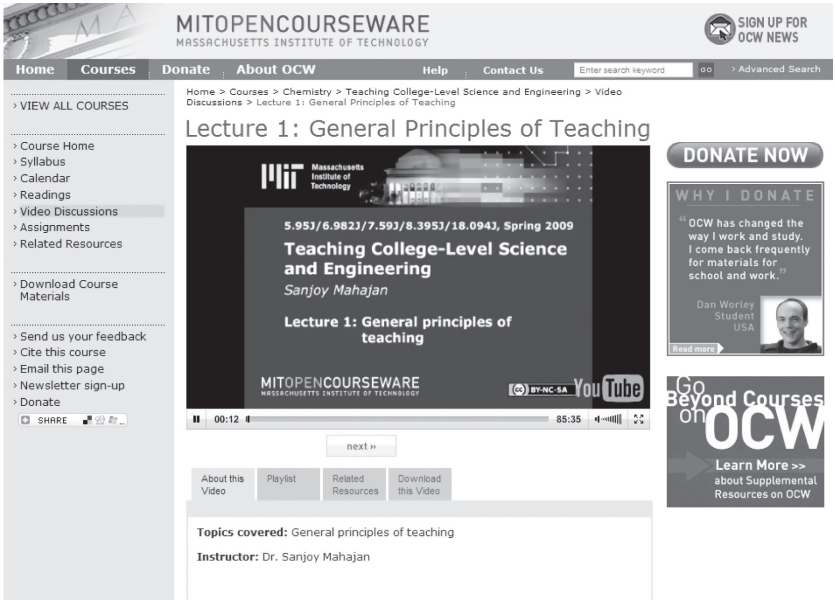

Figure 1 - Screen of MIT OCW for Science Teaching in University

Source: MIT Open Course Ware web page[3].

Another respository example is the MERLOT (Multimedia Educational Resource and Online Teaching)[4], which releases free of charge open educational resources, reviewed in pairs and in several languages, accessed through web links.

The most popular virtual environment with open code and users all over the world is the Moodle[5], which has already been mentioned. Its name comes after modular object-oriented dynamic learning environment. That environment enables the use of its learning platform and

[3] Available at:<http://ocw.mit.edu/courses/chemistry/5-95j-teaching-college-level-science-and-engineering-spring-2009/video-discussions/lecture-1-general-principles-of-teaching/>.

[4] Created in 1997 by the distributed learning Center at California State University. Available at: <http://www.merlot.org/merlot/index.htm>.

[5] Available at: <http://www.moodlebrasil.net/moodle/>.

allows the implementation of educational and corporative environments of training, qualification and learning to those companies and institutions that do not have available their own environment. In Brazil, the use of the tool Moodle was gradually replacing (mainly after the year 2000) the offer to develop the own tools and use the TelEduc from Unicamp.

As a governmental program in Brazil, it is possible to be mentioned the Virtual Interactive Network of Education (RIVED), a Secretary of Education Distance Education Program of the Ministry of Education, and the International Bank of Educational Objects, available online, which can be used as a source of multimedia resources to the educators as shows Figure 2.

Figure 2 - Screen of International Bank of Educational Objects

Source: International Bank of Educational Objects web page[6].

[6] Available at: <http://objetoseducacionais2.mec.gov.br/>.

In Brazil, the tools created by the Laboratory of Distance Learning of Federal University of Santa Catarina, by Pontifical Catholic University of Rio de Janeiro, by Pontifical Catholic University of Parana, and by Unicamp were the first virtual learning environments completely developed in the country. Many virtual learning environments are private or closed repositories such as the Web-Aula, MicroPower Learning Suite or developed by universities as the ones already mentioned AulaNet by PUC-RJ, Teleduc by Unicamp, and Eureka by PUCPR.

As an example of initiative repository in Brazilian universities we can mention the Project CESTA[7] – Compilation of Support entities in the use of learning technology, which was created to systematize and organize the registration of educational objects that had been developed by the Post-Graduate program of computer science applied to education and of CINTED – Interdisciplinary Center of Qualification in Network Management, Video Conference, and in the *Lato Sensu* Post-Graduation in Computer Science applied in education.

The idea of the CESTA Project of creating a repository of educational objects with reuse purposes do not represent an isolated initiative, but it is in compliance with the international tendencies. The methodology of educational resources production is research focus at the CESTA project. Through registering as a guest user it is possible to consult the open educational resources made available.

By continuing that virtualization tendency of teaching after the beginning of 2000, the Getulio Vargas Foundation[8] started the GV Net and FGV Online, which offer free access to open educational resources in free courses in the modality of independent studies.

[7] Available at: <http://www.cinted.ufrgs.br/CESTA/cestaconsulta.html>.

[8] Available at: <http://www5.fgv.br/fgvonline/cursosgratuitos.aspx>.

Eureka, virtual environment offering that proposal

According to what was mentioned before, one of the first virtual environments developed by higher education institutions in Brazil was the Eureka, a proprietary environment created for the Pontifical Catholic University of Parana – PUPCR. It was in a period that corresponds to the beginning of the internet expansion in Brazil and the computers had limitations related to the memories and multimedia performance (TORRES; TARIT, 2010). The Eureka development by the university makes it like a LMS itself, which includes its own management tools of online course made available by it.

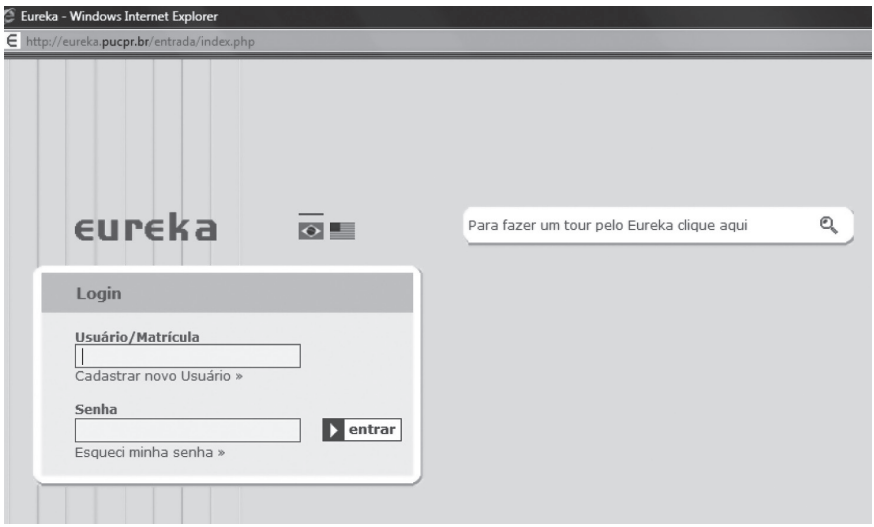

Figure 3 - Screen of Eureka environment[9]

Source: Eureka web page.

[9] Available at: < http://eureka.pucpr.br/entrada/index.php>.

In a master degree dissertation that had as a research base FIEP – *Federação das Indústrias do Paran*á, which also uses the Eureka Environment, Martins Junior (2006) suggested a tool that enables the import of the educational resources created using the SCORM standards. The object to be imported (compressed) by the user who was authorized by the system – teacher or tutor – and remains stored in the server until its respective exclusion. In its recommendations to future researches, Martins Junior (2006) suggests the creation of objects to Eureka that follows the reference model (SCORM), in a way that the objects are not restricted only to the proprietary environment where they were created.

Related to the virtuality at PUCPR, since 1999 several professors use this environment as a support to their classes, aiming to improve the teaching quality. As a consequence it's observed: the integration among researchers of different areas, mainly computer science and online education; the development of innovative methodologies to online education; but mostly the know-how acquisition for the creation of educational resources.

The Eureka has tools that allow: the management of courses and contents, the registration of users and accesses, the definition of access categories, usage statistics survey, the storage of users information, users journal and activities schedule, reports generation, studies organization, files provision and storage, synchronous and asynchronous communication, tests and parts of tests elaboration, surveys, provision of *webgrafias,* group management, work plan organization, among others.

Besides that, in Eureka it's possible to develop and set of two different ways the educational resources: in the first form of provision, the objects are made by professors of especific area together with the Education Technology Center of the Institution and published in public folders in a way that any professor of the institution can use with his students or classmates in discussion groups, on-site classes or in online activities; in the second form of provision, the objects are

made by professors and students, without the support of the team of the Education Technology Center of the Institution, and published in private folders in a way that only the material author can use it with his students or classmates in discussion groups, on-site classes or in online classes. The Eureka environment even allows the use and publishing of open educational resources, either via links at *webgrafia*, or via the publishing of text, video or sound files. It was in that virtual interface where the research was developed.

Some considerations over the experience and the research conducted

That experience was developed at PUCPR in 2008 and 2010, as part of the activities of the research group: Pedagogical Practice at On-site and Distance education: Methodologies and Innovative Resources at Learning of Master and Doctor degree in Education, from the line: pedagogical theory and practice in teachers' formation of the master degree discipline Theory and Practice in Distance Education.

The work plan construction of the discipline was based on the methodological proposal called Online Learning Laboratory – LOLA, which was developed in a doctoral thesis by Torres (2002). It is implemented through the development of its seven fundamental activities: commenting texts selected by the professor, inserting links, suggesting connections with the systematized knowledge, questioning the existing knowledge, responding to the elaborated questionings, creating conceptual maps, creating new knowledge, evaluating the procedures made through a portfolio with the professor's mediation.

The seven activities were developed in the classroom or in the virtual learning environment Eureka, or even in some social networks, among them we can point out: Orkut, Twitter, Myspace, Formspring, Facebook, and YouTube. In Figure 4 there is an example of open resource at YouTube.

Figure 4 - Youtube Screen

Source: YouTube web page[10].

The activity of creating new knowledge consisted in the creation by the students of educational resources that were set in the virtual learning environment Eureka and YouTube. That way, each student was responsible for one or two subjects of the discipline contents. Associated to those educational resources developed by the students of the discipline, open educational resources were used made available through the *webgrafia* link and in social networks, according to what is showed at Figure 5, a debate on the EAD legislation in Facebook community.

The pedagogical mediation at Eureka occurred through the tools: electronic mail, work plan, online announcement and didactic material. In social networks the mediation happened through the communication tools of each one of them.

[10] Available at: <http://www.youtube.com/watch?v=E68c8CSNglY>.

Figure 5 - Facebook screen

Source: Facebook web page[11].

The pedagogical organization of work was suggested at the "Work Plan" tool of the Virtual Learning Environment – Eureka, which was used as a guiding tool of the students' studies. Weekly, students attended on-site classes, the room made available at Eureka, and the social network chosen for that week, where the activities suggested by the professor were done, discussed and negotiated at the discipline presentation in the first day of class. That way, every week a student was in charge of the weekly activity management in a social network, and was supposed to suggest complementary contents to the ones suggested by the professor about the subject, by publishing links of open educational resources and texts available online in the *webgrafia* tool. The student in charge of the content of the week should even create a

[11] Available at: <http://www.facebook.com/home.php?#!/profile.php?id=100001196816394&v=wall>.

learning object about the subject of his responsibility. The screen with information about the work plan can be seen at Figure 6:

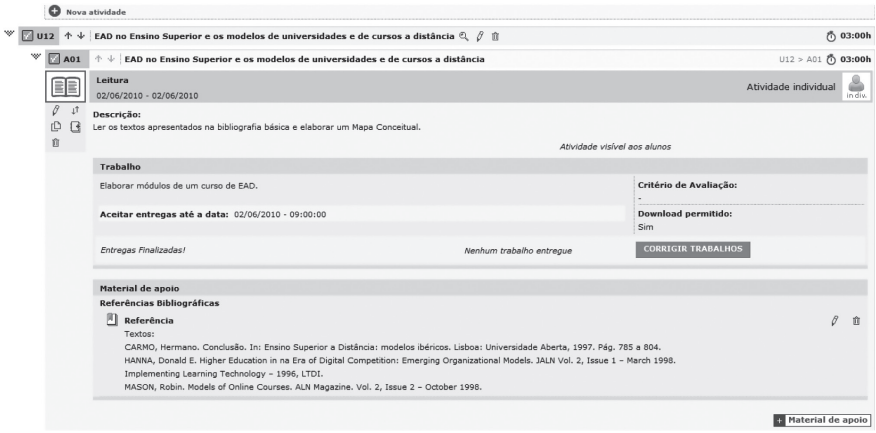

Figure 6 - Screen of the Work Plan at Eureka environment[12]

Source: Eureka web page.

The cycle of activities is concluded with an evaluation from the students themselves of the performance. It needs to be highlighted that all activities of LOLA were published at the Eureka environment of the Pontifical Catholic University of Parana, even the ones that were conducted in the classroom or in the social networks. So, it was created a virtual portfolio with the group and individual works of all students. Using the portfolios at the evaluation moment, it was discussed how the activities were done, including the evaluation activity.

In order to develop this study that flourished from one of the many efforts made to improve the LOLA, the methodology of descriptive research was used, specifically of the type of the case study.

[12] Available at: <http://eureka.pucpr.br/cronograma/cronograma.php?expandir=1&categoriaAtividade=oficial>.

In order to collect data, after that experience, a questionnaire was distributed to all the students who took part of it to be responded voluntarily. The questionnaire – first research tool – had some questions that aimed to identify the students' profiles, and some others, to check the students' evaluations about the production of educational resources and incorporation of social networks with the other activities of LOLA.

The qualitative evaluation took in consideration the students' experiences as teachers, complementary data and observations to the deepening of analysis and interpretation of the information in the answers of the questionnaires.

Forty-eight students answered to the questionnaire, and most of them claimed to use the Internet on a daily basis, both at work and at home. All the interviewed students told that did not have any difficulties with the basic skill of computer use, and that the use of CMap Tools was not a big challenge. About the internet use for personal purposes, the participants answered that they have a frequent access to corporative and online research websites, as well as service websites (such as Google and Yahoo!). They also affirmed that they did not have any experience of taking part in social networks. Therefore, we can affirm that the collected data came from a fairly homogenous group.

When they were questioned about the discipline and its didactic organization through the work plan tool, the students affirmed that at first they considered the idea a little tiring, but after some time, the methodological organization and the theoretical deepening about the subjects with the support of several resources were relevant to the process of knowledge acquisition and assimilation.

Final considerations

The use of educational resources may mean a progress in the hybridization proposals of teaching in higher education institutions, due to

the fact it enables some flexibilization of the teaching-learning process, which overcomes the edges of traditional and formal education.

The rising use of the virtual learning environment Eureka and its functionality of didactic material by students and teachers show a possible leverage to the creation of new educational resources to support the on-site disciplines and to expand the online disciplines.

There is a good acceptance of the research subjects for the use of the development tool of educational resources, even though there are many difficulties mainly when it refers to controlling the several tools available online.

It is worth mentioning that after almost ten years of investigation for developing the educational resources, and the tool – online didactic material – to support the on-site classes, we can affirm that the use of those resources, with the support of Eureka's functionalities, allows us to develop innovative and collaborative methodological ideas in on-site and distance courses. The collaboration occurs through the available tools in this virtual environment, as well as the data, contents and information sharing tools. The collaboration among the pairs enables the construction of new contents with reviewed aspects, adding new information, which remains stored and available for every member of that learning community.

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