Using Open Course Ware to develop teacher competencies in distance education

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Abstract

Education is one of those fields, which has been impacted by technology development and new ways of communication; the Web 2.0 (Wikis, blogs, social networking, etc.) has contributed to the exchange and reusability of free content. The exchange implies knowing the user-transformer and the impact of innovation is bigger when the resources are shared, because the users are free to reveal their knowledge and to work in collaboration (Larsen & Vincent, 2006).This way, the response of education to this trend deserves special attention, since the curriculum and professional skills are linked to the Internet (Contreras, 2010). In today's society, with major technological developments that have modified the way we teach, the students need to learn by interacting with different ways of acquiring knowledge, for example: the Open Educational Resources (OER).

Key Words: Open Educational Resource (OER), Use of OER, User-transformer, Knowledge society.

1. Introduction

Nowadays the networks, the Internet and the so-called Information Society are generating new expectations to transform education. Technology is leading the new ways of learning and allows for better opportunities to socialize and with that the beginnings of the Knowledge society. A study carried out by the Oxford Internet Institute showed that even though the Internet service is provided in heteronomous ways among the population: those who have access to it use it to search for concepts, and to obtain resources which can help them with the academic activities (Cobo&Moravec, 2011). Education is one of those fields

that have been impacted the technological development and new ways of communication. The Web 2.0 has contributed to the public, thanks to the exchange and free reusability of content. The exchange implies knowing the user-transformer and the impact of innovation is bigger when the resources are shared, because the users are free to reveal their knowledge and to work in collaboration (Larsen & Vincent, 2006).

Therefore more attention should be given to the Open Educational Resources (henceforth OER), because it is a phenomenon developed as a result of this 95 technological transformations, that generate content, in a voluntary way, which are then shared to solve problems or satisfy educational needs.

1.1. What is an Open Educational Resource?

In today's society, with major technological developments that have modified the way we teach, the students need to learn by interacting with different ways of acquiring knowledge, for example: the Open Educational Resources (OER)

This term was first used in July 2002 in a UNESCO workshop on open courses (open courseware) in developing countries (Burgos, 2008).It refers to free resources and educational materials freely available on the Internet (text, audio, video, software tools, multimedia, etc.) that have free licenses for their production, distribution and use for the benefit of the education community worldwide; particularly to be used by teachers and students at various educational levels. These arise from the need of our teachers to have good quality educational materials that are available to be re used and improved continuously and constantly.

UNESCO defines them as teaching, learning or research materials that are in the public domain or released with an open license that allows for free use, adaptation, and distribution (UNESCO, 2012). William and FloraHewlett Foundation also define them as "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others" (Montera, 2010).

On the other hand, The Centre for Educational Research and Innovation (2007) describes the OERs as:

"Digitized materials offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research". The access to the Open Educational Resources is completely free, because an educational institution or research center finances them; the end users are teachers, students and people interested in continuing their education. Based on the above, there are three characteristics: the first one is the intention to contribute and to support learning; to teach, learn and research using OERs; the second one refers to its permanent availability on the web and the third one is that the resources have a common license that allows the free use without royalties even though keeping the right to authorship. Thus OERs are defined as constituent elements of knowledge that include the essential elements of education, such as: content, teaching tools, learning processes, and the development of knowledge (Hewlett Fundation). These are the means by which the students interact with materials that help them understand and visualize the knowledge gained to used it to solve a problem or satisfy a need (Jaramillo, Castañeda&Pimienta, 2009).

Nowadays the Information and communication technologies, and OERs as well, are rapidly developing, thus affecting every aspect of society and education is not the exception. These technologies that are increasingly seen as a need in the context of a society where rapid changes, increased knowledge and the demands of a constantly updated high education level, become a permanent requirement (Rosario, 2006).

2. Developments

2.1 OERs in teaching

According to Ruiz, Ortega, Bravo & Prieto (1994) teachers in general are reluctant to trade their traditional teaching methods, which are tried and tested, for new and unknown methods, in which they feel inexperienced. However the most important technological transformations and the dissemination of the computer culture is changing this situation, in such way that the use of technologies is a must, and therefore more teachers are interested in applying these educational sources.

The above was confirmed by González &Díaz (2005) who interviewed teachers at the Master's Program in Educational Innovation, at the University of Sonora, such interviews reported that , in general, teachers are open to using the information and communication technologies (ICTs) for academic purposes; the teachers considered that the help of technology experts in necessary to design and develop OERs.

Likewise, the show interest in receiving training in the use of ICTs, design and development ofOERs, as long as they are focused on the subjects they are currently teaching.

According to Padilla (2005), the role of the teacher in the implementation of OERs is very important, because OERs do not create the innovative educational environment, but it is the teacher and the student's participation that contribute to configure a particular educational situation, by means of a the pedagogical practice. That shows that OERs must be used with the purpose of defining and building the necessary links to construct knowledge.

The interaction between students and OERs is needed, both in distance courses and blended courses: it is important, as well, to plan the interaction, to provide techniques and strategies for a meaningful learning. In doing so the difference between real and virtual learning will be understood, with the purpose of promoting learning through OERS.

Therefore, in distance education is especially important to provide a mediated environment, in such a way that promotes trust and safety; where the teacher and students interact through OERs and the information and communication technologies.

As it was mentioned above, the role of the teacher in the interaction through OERs is very important, because it depends on him/her how the OERs are designed, developed and selected; as well as how the communication strategies within the course are structured. Among the most important functions he/she must accept, as a product of such interactions, are: to contribute with special knowledge, to maintain the harmony in the group and to provide resources that promote self-learning.

Anderson, Garrison and Archer (cited by Flores, Casinary& Lopez, 2005) summarize the roles of the teacher in relation to OERs in the teaching-learning process: First, as a designer and organizer of learning experiences which the student will have as part of the course that is structured with different open educational resources; second, as facilitator of the interactions between the agents that take part in the course; and third, as instructor that guides the student in the learning process based on technological resources. It is important that the designers and developers of OERS allow the teachers to participate by modifying them in order to improve their content and the educational purpose.

2.2 OER in the development of competencies

It is important to notice that the uses of information and communication technologies, as well as the implementation of OERs, are factors that influence the integral development of competencies in students and teachers. So it is important to point out that from now on it will be referred to student-teacher in a joint effort to establish the interaction and mutual dependence in the dynamics of action with the term user-transformer, because knowledge and competencies are a joint achievement.

2.2.1 Competencies of the teacher in the use of OERs

To develop the competencies in the use of OERs, we need to start with the teacher's performance, from the traditional perspective towards a critical perspective, looking at the transformation and change of action of the teachers in the building of knowledge collectives; in such a way that the use of OERs in education will detonate the knowledge process. The traditional practice is characterized by the use of distance education on line or blended education depending on the case, to facilitate the traditional practice because, according to the teachers experience, some of the activities are to upload and share PDF files, to record presentations to be uploaded to the internet; these are specifically made for classroom environments, that is, the materials and resources in traditional education are being used in the virtual environments without any adaptation, or the teacher believes that the innovation consists in introducing technology as part of the courses (Méndez, Hernández & May, 2010) in other words; the teachers and students, in their own roles, work in the virtual learning environments.

Based on the above, the students, and particularly the teachers, need to adapt their competencies in their traditional practice in order to produce the transformation into competent practice in blended or online modes; teachers have the competencies, skills, attitudes and knowledge that need to be adapted to perform in those environments.

Therefore it is necessary to take the teachers competencies in the use of technology and virtual learning environments to redirect them towards the knowledge produced and implemented by the OERs. The purpose of the above is the possibility of generating, with the students, new tasks, exercises and interactions that mediate and indicate the acquiring of knowledge (Morín, 1994)

We talked about the user-transformer as a necessary condition to be developed in the students and teachers, because it is necessary to point out the change to be made in them (Méndez &Quiñones, 2012) as part of their competencies, and that these depend on the competencies of the teacher to develop the OER as an integrative project in the knowledge collective as a manifestation of teaching-learning from the social and formative (López&García, 2012).

This is the way how it is demanded nowadays in the progress of science, information and communication, the construction of knowledge collectives through generating spaces in the virtual environment to allow diverse teaching-learning interactions. In this context, the teacher is faced with scenarios of distance education with the challenge of achieving competencies in the virtual environment, which in turn generate actions to develop skills in students.

2.2.2 Competencies of the students in the use of OERs.

The main goal of the courses in blended and online mode that implement a variety of OER is the comprehensive training of students; the fundamental features of the student participating in these courses are: to be self-taught, to know how to be self-directed and self-monitored, as well as having the ability to work independently; he must assume a commitment with the group and socialize their learning through bidirectional communication in a mediated dialogue between peers and tutor, in order to join learning communities (Hernández, 2003).

According to Hernández (Hernández, 2003)the students that participate in courses mediated by OER develop competencies such as:

- They are actively involved in the courses
- They appreciate timely feedback from their teachers.
- They identify important content features of the course.
- They develop meta-cognitive processes.
- They monitor and direct their attention toward the achievement of their objectives.

- They are aware of their learning priorities.
- They connect new information with previous knowledge.
- They give real meaning to their learning.
- They apply what they learn.
- They understand the evaluating criteria.
- They work productively with their peers.
- They are aware of the ways they achieve their learning.

3. Conclusions by means of a case in the use of OER.

In this section, as a conclusion of this topic, the experience of a teacher, fictitiously named Juan, in the use of OERs will be commented. He shared with us, according to his experience, that the purpose and objective of OERs are:

a. To communicate the particular characteristics of the study content.

b. To present synthetized information of the references used in the development of content.

c. To provide examples of design and development of specific instructional materials.

He used the OER with students of Higher Education, that were studying the area of education.

3.1 According to his testimony, his strategy was the following:

- To detect the need to use different teaching resources besides presentations in which there was mainly text. It is important to stress that he is not against using text to explain the contents, nevertheless it is essential to take advantage of other even schematic resources, since one of the characteristics of the students at present, for the handling of the information is to resort to iconic information with sound integration; these elements can be highly effective; in addition, the use of hypertext, that implies different reading skills, is highly useful.

- To read bibliography.

- To summarize relevant ideas. In this phase, the information should be reduced substantially to the most significant ideas of the sections in the initial text. The text in paragraphs will continue to be present, but it should be a paraphrase (literally or interpreted) of the ideas of the author (s) and organized in bullet points. In any case, at the most, this will be text to be included in the final design of the course.

- To analyze (the summary of the ideas).The analysis allows to relate, categorize, etc. in such a way that, besides the summary, they build graphics to represent the information, to highlight relevant information, visual metaphors, the use of ITCs and other cognitive supports that help the students to grasp the concepts of the content.

- Synthetize. In this case it should be understood as the composition of the whole by the gathering of its parts in order to build something different. This means that the relevant idea in this phase is to build visual aids to help the students to comprehend the information. - In this instance the teacher build them by means of the educational resources created by him; but really he is also modeling a product that the student will have to do in subsequent moments of his training.

- Construction of the appropriate software. Once the sketching of the resource is made then the production follows.

3.2 As strategy of the educational situation, teacher Juan proposes the following teaching-learning interactions.

- The class was about the classification of teaching resources according to an article by a particular author.

- In this sense, the contact of the students was directly with the hypertext in such a way that they could produce the information; this phase was basically theoretical, so they can build their own according to the classification and characteristics described in the reading.

- Therefore it was the student who reads, navigates the hyperlinks and determines his own conclusions.

- As a conclusion of his experience in the design, development, implementation and use of OER teacher Juan concludes that:

- Without any doubt, personally and professionally, there was always a desire and a challenge to use such resources, because he was convinced that the student's characteristics have changed in today's era of information and knowledge.

-To be a higher education teacher who is developing professional teachers demands higher competencies in him, in order to produce them in the students.

-Regarding the design, construction and use implies more effort on the teacher's part, however, such effort is reduced as he develops more practice and he uses more and more resources. To take the first step is the hardest part, but it is necessary in the modernization and development of education.

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