

Directions in online Library Science education

In the early years of the century we have begun to have a clear understanding that globalization, the knowledge society and information and communication technologies (ICT) entail challenges to institutions of higher education, exerting influence in educational models, workplace competencies and modalities of intercommunication taking place among the diverse segments of society. Moreover, it is evident that ICT are now one of the material foundations of the knowledge society, which itself has undergone changes making it distinct from other social groupings. The knowledge society contemplates socio-economic systems that require information technology expertise. Driven by these technological transformations, academic and social networks posit new research phenomena for library and information sciences, inspiring a paradigm shift with its foundation in education, information and knowledge. Currently, ICT is widely acknowledged as a medium that facilitates social communication and the acquisition of information and knowledge. Moreover, institutions are furnishing information professionals with a wide array of skills enabling them to meet the diverse information and documentation demands of society. This is so because:

- Information is an integral part of all human activity and its use is potentiated through ICT.
- Flexible technology allows organizational structures, educational models and information services to be reconfigured and modified, which are key foundations of the knowledge society.

- Technologies accentuate their convergence in a highly integrated system, which is a requirement of the knowledge society.¹

On this stage, information is the key element allowing society to participate in processes of cohesion, globalization, informatization, education and creation of knowledge. Information and the exploitation of technologies are now thought of as the ideal media for the democratization of education, allowing its bounties to be delivered to ever broader sectors of society. In the early twenty-first century, as a result of scientific research, technological innovation, privatization and commercialization of knowledge, and the growing demands for more online education options, the teaching of disciplines has been transformed. This situation had led educational institutions to develop sustainable educational programs. In this sense, distance learning in virtual classrooms uses information, knowledge and technological media to encourage didactic dialogues between student and teacher.

Online education is seen as a viable alternative modality, largely because of advances in the science of psychopedagogy and ongoing technological innovation it entails. Online educational alternatives, driven in turn by globalization, trends encouraging curricular flexibility, the development of interactive learning approaches and implementation of technologies in educational delivery systems, are currently in a growth stage.

The virtual classroom is characterized by the convergence of methods, technologies, application and services aimed at facilitating and sustaining learning over the internet. To this end, training in online skills and abilities is fundamental. In this circumstance, learning theory, platform management skills and didactic material and learning object development are especially significant. Moreover, online education approaches must stress the following fundamental concepts and/or skills: learning theory, technological platforms, didactic materials, learn-

1 Manuel Castells, "La era de la información: economía, sociedad y cultura," *La Sociedad Red*, México, Siglo XXI Editores, 1999, 94.

ing object development, evaluation of content of online educational software, remote communication skills and planning of documental information services in accord with any specific online educational approach.

The ongoing debates surrounding online educational theory and methodologies have become more prevalent in the early twenty-first century. As cyberspace and virtual spheres have become permanent objects of study, researchers attempt to analyze the pertinence underlying online educational theories and emerging ideas for use in the virtual classroom. A common use of the internet in online educational environments is the creation and distribution of educational programs offering non-conventional approaches, in which global distributed learning opportunities are multiplied. In fact, the permanent use educational technology in online learning environments has been the subject of much debate in the specialized literature. These discussions have focused on, among other things, its implementation in societies because [...] its effects and scope situate it not only in educational information and communication, but also in the social, economic, legal and political foundations of society itself.²

It is quite clear that technologies drive all disciplines to assume new requirements, as the transformations of higher education induce change in society, modify how work is done and the ways in which the diverse sectors of society communicate. Because of the need to address problems associated with online education, diverse international organizations have taken up these issues. Consequently, IFLA, UNESCO, the International Association of Universities and the National Association of Institutions of Higher Learning (ANUIES), among others, have promoted research into non-conventional education approaches, leading to the following general consensus:

2 Julio Cabero Almenara, "Nuevas tecnologías, comunicación y educación," *EDUTEC. Revista electrónica de tecnología educativa*. Accessed 20/05/14, <http://edutec.rediris.es/Revelec2/Revelec1/revelec1.html>

- 1) The need for modular curricula to promote and consolidate life-long learning;
- 2) The accrued experience of distance learning universities demonstrates the significance of this learning modality and its effects in society;
- 3) Advanced technologies enhance the flow of communication among students and between students and faculty;
- 4) The development of high-level educational content requires significant capital, human and time investments. These investment, however, bring a wealth of benefits to online learning;
- 5) Interactive technologies have huge potential for improving learning media used in distance learning and for promoting social learning;
- 6) Online education transcends national borders, allowing it to reach students all over the world;
- 7) The educational infrastructure of universities allows them to collaborate internationally with diverse educational systems and the business world.³

Many of these university and institutional experiences inform projects currently in operation in Mexico. Additionally, coordinating institutions for online systems and programs across all grade levels have been instituted. We can also point to governmental policies to modernize by exploiting online modalities. These efforts, of course, exert structural, economic and constitutional impacts which provide coherence to overall social participation in education within the globalized world. Simultaneously, we see that many educational institutions have had to deal with the complexities and risks entailed in restructuring educational models and work practices traditionally oriented to classrooms filled with students in order to arrive at mixed approaches that includes online instructions and virtual classrooms. These changes owe everything, of course, to the advent of ICT.

3 Sarah Gari-Rosenblit, *Distance and campus universities: tensions and interactions. A comparative study of five countries*, s. l.: UNESCO, International Association of Universities, Elsevier Science Ltd. IAU Press Pergamon, 1999. Tito Mejía Esparragoza, 240-242.

The supply of educational options is growing every day because the internet and Web 2.0 are used as the predominant communication channels and as the media for distributing didactic materials, learning objects and open access educational resources. Online education is situated in the educational content and technologies, and its central purpose has been to educate groups in the use of emerging technologies. Moreover, the use of Learning Content Management Systems (LCMS) has marked a trend in the online education market.

It is important to take into account; however, that while electronic education stresses the development and management of educational content, non-conventional learning seems to be pointed in the direction of development of content supported by the growing use of technological convergences, with special emphasis on effective academic interaction among stake holders, through the use of advanced navigation, intelligent tutorials and diverse communications channels to ensure independent study in a collaborative relationship within the virtual scenarios. As such, there is growing use of tele-processing and social networks in which information and communication technologies are increasingly process-oriented, and learning and socialization practices are focused on production, distribution, appropriation, representation, signification and interpretation of information and knowledge.

Online education models stress learning within collaborative scenarios favoring knowledge building dynamics. In this context, it behooves us to adopt the commitment to engage in active, planned participation, targeted educational intentions and shared pedagogical frameworks. To this end, theories underpinning online education and library science research focus on the pre-requisite elements for achieving advanced distributed education for the purpose of gaining a better understanding of the potential of these education modalities. Learning in virtual environments requires institutions, equipment and manpower to design, develop and manage certain processes in order to help students achieve their educational goals.⁴

4 Ibid., 65.

These aspects shall be increasingly at work in online education as the century advances, because of the diverse possibilities supplied by the internet and tele-processing networks. The latest technologies favor communication with students, and academic-administrative control and design of educational structures based on hyper-text and hyper media. The virtual classroom, video-conferencing, email, digital libraries also play key roles; as do open access depositories and metadata systems. The creation of selective bibliographic information distribution services using telecommunications allowing world-wide sharing of digital documents for educational purposes is also a reality and is something being exploited in the educational sphere because of advances in both pedagogical approaches and the implementation of cutting edge technology. This situation has driven the modernization of education through institutional and governmental programs whose purpose is to effectuate cultural, economic and constitutional changes, responding and providing coherence to the individual educational programs designed to propitiate the democratization of education, while addressing backwardness existing at the diverse educational levels.

Thus, globalization, and the information and knowledge society have influenced the growth of online education projects, as institutional awareness increases with regard to this modality hand-in-hand with the availability of requisite technological infrastructure. For Library Science, online teaching constitutes a rich area of research, because the field has yet to propose and develop solid online education approaches. This situation evidences the field's need of diversification, the creation of new training alternatives that take into account the growth of knowledge and the demands of the labor market; while incorporating new information and communication technologies for production and dissemination of new knowledge, carrying out ongoing innovation of teaching methods and techniques and performing basic applied research.

The knowledge societies have caused universities to undergo a significant increase in enrollment. This is coupled with even greater demands to respond to scientific and technologi-

cal advances, globalization, the demands of society for quality and efficient education, the internationalization of higher education and of the academic labor market, the integration of research and education and other phenomena. Everything indicates that the milieu of Library Science teaching will entail an agglutination of available knowledge for the purpose of supplying the student a professional education that allows him to understand the effects of globalization and the purposes of the knowledge society, thereby allowing the student to develop the competencies needed to succeed professionally in a labor market undergoing constant change. What is needed, then, is to address teaching on the basis of logically weighed priorities, in order for students to understand Library Science phenomena, and identify and solve problems.

These demands will require the Library Science professional to master the competencies entailed in identification and description of cultural, social and economic scenarios in which diverse technologies are used. The professional will also be expected to possess adequate management skills with regard to such phenomena and to be skillful in designing proper information systems using appropriate applications to meet the demands of information users. Any program associated with Library Science should know that the social context must characterize the technological applications, and not the other way around. Experience demonstrates that technologies exert direct effects on the social context they come to inhabit.

In this sense, it is important to acknowledge that [...] the capacity of the library and librarian to respond to the requirements of users and to access, locate and supply them relevant, specialized information is a central determining factor.⁵ With the use of information and communication technologies, the development of new skills and abilities becomes paramount. Library Science is being called to deploy high level academic teams, fully trained in research, and creation and communication new knowledge for the purpose of designing modern

5 Saadia Sánchez Vegas and Estrella Pérez, "Reflexiones sobre la formación de recursos humanos de cuarto nivel en el área de las ciencias de la información," *INFOLAC* 9 (October-December 1996): 4.

information systems based on ICT. These elements are part of teaching and research in the discipline, because competent information professionals are needed in educational institutions, governmental agencies, private companies, industry, etc.

Through study of the ways in which information, knowledge and diverse documentation resources are exploited in diverse kinds of communities, these professionals must acquire the competencies required to lead projects targeted at helping society achieve meaningful interaction with information and knowledge. At the same time, these professionals are duty bound to continue with the learning process and sustain ongoing interaction with the information needs of users. This, of course, will require a broad range of skill and competencies. In the current dynamics, these actors are required to drive the development of libraries and promote contact with users in order to meet growing information demands as fully as possible.

The emerging proposal associated with Massive Open Online Courses (MOOC) must be addressed in terms of Library Science research and education, in the understanding that these courses require highly specialized content and are imparted without tutors or advisors; and that they attempt to exploit collaborative learning while using instantaneous assessment in the absence of educational models supported by learning theory. From these observations, one can deduce that the development of the MOOC proposal is an alternative educational model in that it can promote research directed at individual and collaborative learning, the development and use of open access contents, massification of training, distributed learning social networks, greater use of the cloud, application of mobile technologies and teaching methods targeted at mass audiences in virtual learning environments.

For the purpose of pertinently addressing the study of this modality in its totality and full complexity, online library science research shall occur within a multidisciplinary context, because it requires approaches that exploit educational models, educational communication, new pedagogies, ICT, interactive virtual scenarios and more. These endeavors will require di-

verse disciplines, theories and methods to contribute to problematizing educational research of this kind.

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