Distance Education in the Digital Age: Common Misconceptions and Challenging Tasks

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Abstract

This article discusses in its first part three common misconceptions related to the operation of distance education providers in the digital age: The tendency to relate to e-learning as the new generation of distance education; the confusion between ends and means of distance education; and the absence of the teacher's crucial role in the discourse on knowledge construction. The second part of the article examines four challenging tasks for the future development of distance education in the digital age: Bridging over the digital divide; designing cost-effective modes of utilizing the new technologies; redesigning the roles of actors in the distributed teaching responsibility within the industrial model of distance education; and creating effective quality assurance mechanisms.

Résumé

Cet article aborde dans sa première partie trois idées fausses couramment rencontrées concernant l'opération de fournisseurs d'éducation à distance à l'ère numérique : La tendance à faire référence à l'apprentissage en ligne comme étant la nouvelle génération d'éducation à distance; la confusion entre les fins et les moyens de l'éducation à distance; et l'absence du rôle central de l'enseignant dans le discours sur la construction du savoir. La deuxième partie de l'article examine quatre tâches présentant des défis pour le développement futur de l'éducation à distance à l'ère numérique : franchir le fossé numérique; concevoir des modes économiques d'utilisation des nouvelles technologies; reconcevoir les rôles des acteurs dans la responsabilité de l'enseignement réparti à l'intérieur même du modèle industriel d'éducation; et créer des mécanismes efficaces de contrôle de la qualité.

Introduction

The emergence of the digital technologies and their penetration into all levels of education, from nursery schools to universities, has challenged higher education institutions to redefine their teaching and research practices and to redesign their organizational infrastructures. The digital technologies are applied in higher education institutions in teaching/learning processes for a variety of purposes: information retrieval from various resources; simulations and multi-media

presentations; communication with instructors in- and after classes; communication amongst students; drilling exercises and sample tests; class administration, etc.

The various uses of the digital technologies in study environments is reflected in a plethora of different terms in the relevant literature, such as - Internet mediated teaching, web-based education, online education, computer-mediated communication (CMC), e-learning, virtual classrooms, information and communication technologies (ICT), open and distance learning (ODL), distributed learning, etc. Donohue & Howe-Steiger (2005) claimed that the marketplace of ideas related to the applications of the digital technologies has become a cacophony of jargon. The many terms describing the uses of the new technologies in educational settings reflect the ambiguity as to their roles and functions. One emphasizes the interactivity and communication functions of online communication, while another highlights the information retrieval possibilities from a wide range of remote data sources. Some are excited by the video-conferencing abilities, whereas others are focusing on the text production sophistication and the richness of multi-media packages. One application can be relatively cheap (as an e-mail communication), while another possibility might be terribly costly (such as a pre-prepared multi-media program). Some abilities of the digital technologies can be used with minor alterations of the study environment, while others require a grand change and a total overhaul of the existing infrastructures.

The new information and communication technologies have become of immense attraction to distance teaching institutions since they offered solutions to three major obstacles in traditional distance education. They have the potential: to rescue the scattered students from their loneliness by providing interaction with teachers, as well as with other peer students; to provide easy access to libraries and other information resources which was nearly impossible in the past; and to update the study materials on an ongoing basis. In spite of the apparent advantages of the digital technologies for distance education, many of the distance teaching institutions lack the appropriate infrastructure and necessary conditions to utilize the full potential of the new technologies. The fact is that today most of the large distance teaching universities do not offer distance education through e-learning devices, and most of the e-learning applications are used by conventional higher education institutions not for distance teaching purposes (Bates, 2005; Guri-Rosenblit, 2009; OECD, 2005; Trucano, 2005).

The discourse on the applications of the digital technologies in distance education is frequently based on a few erroneous assumptions and misconceptions. The first part of this article discusses three common

misconceptions related to the integration of the electronic media in distance education settings: The tendency to relate to e-learning as the new generation of distance education; the confusion between ends and means of distance education; and the absence of the teachers' crucial role in the discourse on knowledge construction. The second part of the article examines four challenging tasks facing distance education providers purporting to integrate the electronic media more fully and efficiently into their learning/teaching processes: Bridging over the digital divide; designing cost-effective modes of utilizing the new technologies; redesigning the roles of actors in the distributed teaching responsibility within the industrial model of distance education; and creating effective quality assurance mechanisms.

Common Misconceptions

Distance Education and E-Learning: Two Distinct Phenomena

Many policy makers, scholars and practitioners in higher education tend to use the terms 'distance education' and 'e-learning' interchangeably as synonyms, referring to e-learning as the new generation of distance education (American Federation of Teachers, 2001; Annand, 2007; Arafeh, 2004; Harasim et al., 1995; Harasim, 2000; Nipper, 1989). Particularly in the USA 'distance education' is defined mainly as being conducted through digital technologies. For instance, a comprehensive report issued by The Pew Learning and Technology Program in the USA stated that: "The terms 'distance learning', 'distance education', 'distributed learning' and 'online learning' are used more or less interchangeably" (Twigg, 2001:4). Also Allen & Seaman (2003, 2004, 2007) in the extensive Sloan reports on the quality and extent of online education in the USA view online education as the main medium for distance education, though they acknowledge in the introduction of their reports that these two terms are not necessarily synonymous. Mackintosh (2006) in describing alternative models of implementing the digital technologies in higher education uses the term 'distance education technologies' as a synonym to the term 'information and communication technologies (ICT)', and so does Beaudoin (2006).

Bates stressed that the strong advocates of e-learning "who see e-learning as an educational paradigm shift, making obsolete all forms of distance education that preceded it" make a fundamental mistake, since "distance learning can exist without online learning, and online learning is not necessarily distance learning" (Bates, 2005: 14-15). Distance education and e-learning do overlap in some cases, but are by no means identical. Distance education and e-learning constitute two distinct phenomena (Guri-Rosenblit, 2005).

Distance education can be traced back to ancient times, whereas e-learning is a relatively new phenomenon associated with the development of the Internet and the World Wide Web in the last fifteen years. An intensive exchange of letters for educational purposes has been known since ancient times. Such is the correspondence between Plato and Cicero with their students, and the letters sent to early Christian communities by Apostle Paul to discuss the interpretation of Christ's message (Peters, 1994; Guri-Rosenblit, 1999). Distance education at university level has existed since the early half of the nineteenth century (Bell & Tight, 1993). E-learning, on the other hand, relates to the use of new electronic media for a variety of learning purposes that range from supplementary functions in conventional classrooms to full substitution of face-to-face meetings by online encounters. E-learning is by no way exclusively meant for distance learners.

Furthermore, distance education, by its very definition, denotes the physical separation of the learner from the instructor, at least at certain stages of the learning process. Technological devices, from handwritten letters through print technology, radio, audio-cassettes, compact disc players, television and video to the current Web-based learning, have always shaped the nature of interaction between students, teachers and the taught content in distance education settings.

Distance is not a defining characteristic of e-learning. None of the digital technologies' uses denotes the physical separation of the learner from the teacher at any stage of the study process. Many of the new technologies' qualities can be used most efficiently to enrich and support lectures, seminar meetings and face-to-face tutorials. In 2004/5 the OECD conducted an in-depth survey of e-learning practices in 19 tertiary education institutions in 13 countries in the Asia-Pacific region (Australia, Japan, New Zealand, Thailand), Europe (France, Germany, Spain, Switzerland, the United Kingdom), Latin America (Mexico, Brazil) and North America (Canada, the Unites States) (OECD, 2005). One of the main conclusions of the OECD study was that: "Consistent with their current activities, institutions' dominant rationales for e-learning strategies at campus-based institutions centered on on-campus enhancement through increased flexibility of delivery and enhanced pedagogy" (OECD, 2005:13). In other words, most higher education institutions use the digital technologies to enhance classroom encounters rather than adopt a distance teaching pedagogy.

Moreover, the information and communication technologies have a huge impact on other important areas of university activities, such as: library management; registration and loan administration; enhancement of research communities; academic publishing; mobility and cooperation between institutions. Applications of the technologies in these areas have

nothing in common with the traditional roles of distance education (Guri-Rosenblit, 2005, 2009).

Confusing between Ends and Means

Confusion between the ends and means of distance education quite often characterizes the discourse on the applications of the electronic media in distance teaching settings. One of the prevalent arguments is that distance education has aimed always to develop self-directed and autonomous learners, a goal that turns out to be contradictory to the collaborative constructive approaches of e-learning (Garrison, 1997; Garrison & Anderson, 2003). But the goal of distance education since ancient times has been to reach out to special clienteles that for a variety of reasons could not attend a face-to-face gathering, a school or a conventional campus, and to provide them either with information or education. The papyri carried by the apostles to the first Christian communities in the Mediterranean were not targeted to develop self-directed learners. When Prof. Knight from St. Andrews University decided to teach courses for a Licentiate in Arts to women scattered over one hundred centers in the British Empire (between 1877-1931), he did so because he believed that women were also entitled to pursue higher education studies, and not because he wanted to develop autonomous learners. Distance education has filled always a demographic niche.

For over 150 years the goal of distance education at higher education levels was distinct and clear: To enable students, that for a variety of reasons could not attend a conventional campus-based educational establishment, to pursue academic, professional or recreational studies (Bell & Tight, 1993; Guri-Rosenblit, 1999, 2005). Even the private correspondence schools that purported mainly to make a profit, have contributed to the widening of access to professional or higher education. The large distance teaching universities that were established since the early 1970s, following the model of the British Open University (that was founded in 1969) aimed also to promote social equity, in addition to widening access to large segments of the population, by opening their gates to second-chance students. Second-chance students were defined according to various parameters: lack of formal qualifications to be admitted to conventional higher education institutions, living in remote areas, work or family constraints, health limitations, serving in the army, being in a prison, being a woman, etc.

Developing autonomous and self-directed learners is indeed a lofty goal. Aristotle who studied for over 30 years in Plato's Academy has become a most accomplished self-directed and autonomous student and scholar. It might be argued that elite universities, such as Oxford and Cambridge in the UK or Harvard and Stanford in the US, definitely

purport to cultivate independent and self-directed students through intensive tutoring and dialogue throughout their studies on campus. Scott (1995) argued that many students in mass universities often lack the cultural and intellectual traits needed to make genuinely autonomous decisions. Thus, these students need substantive guidance, support and counseling throughout their study. Scott's claim applies equally to many students in distance teaching universities. The drop-out rates are very high in distance education, and intensive support systems are of immense importance for distant students. Distance education has never defined independent study as a proclaimed or desired goal to obtain. Self-study materials have been the means, not the goals, of distance education. Moreover, self-study environments do not entail necessarily a self-paced, individualized learning style.

The notion of independent-study based on self-study materials in distance teaching settings is often misinterpreted. Many distance teaching universities are open and flexible in some domains. Flexibility is applied mainly to: entry requirements, accumulation of credits over a short/long period, the possibility of leaving and re-entering studies when convenient, building a discipline-focused or an interdisciplinary curriculum. But once the students are enrolled in a particular course, they have to follow stringent requirements and are subjected to principles of uniformity and sameness. Paradoxically, openness in mass systems increases the pressure for much tighter control over the structure and requirements in the study process. Mass production of self-study materials in distance education entails highly structured relations among course designers, tutors and students. This is detrimental to flexibility and attention to personal needs. Over-structured materials may even enhance passive learning. Varying needs and learning styles of students cannot be taken into account within the industrial model of distance education. Therefore, the study process in many distance teaching institutions does not necessarily promote independent study and self-directedness, but rather is based on highly structured materials and a strictly directed pace of submitting assignments.

It is misleading as well to claim that dialogue is most limited or even non-existent in distance education settings which are based on self-study packages. Some distance teaching universities have invested greatly in establishing effective support mechanisms, both in the study process and for accommodating the students' well-being, which enable students to interact with tutors, counselors, and other students through phone, face-to-face tutorials, summer schools, and of course – through the Internet (Tait & Mills, 2003; Guri-Rosenblit, 2009). Unquestionably, the digital technologies have increased greatly the interaction possibilities. Most distance teaching universities, which are based on the industrial model,

face difficulties in enabling intensive interactions between the experts who designed the courses and the students. But this limitation does not stem from the fact that 'traditional' distance education is rooted in a self-directed learning concept, but is rather related to the nature of the distributed teaching responsibility, which is discussed further on.

Knowledge Construction: Teacher-Dependent

One of the common misconceptions in the discourse on e-learning is based on the notion that an online environment, by its very nature, enhances a collaborative constructivist pattern of learning and induces a new study paradigm (Garrison & Anderson, 2003; Harasim, 2000). There has been a noticeable move in recent decades towards a constructivist epistemology, which is based on the premise that knowledge is constructed by the individual through his or her interactions with the environment. According to the constructivist theory learners construct knowledge actively through dialogue and discussion. The constructivist theory places more emphasis on information management and analysis, knowledge construction, problem solving, and decision making rather than on comprehension and memory. From the constructivist viewpoint, the learner is an active processor of information, in sharp contrast to the behaviorism, in which the learner is perceived as a passive recipient of information (Vrasidas, 2000).

The interactive nature of the digital technologies has coincided with the underlying assumptions of constructivist approaches to learning. Several scholars have claimed that technologies such as the Internet appear to facilitate this kind of learning more easily than print-based technology. With the communication and sharing ability provided by e-mail, chat, Web discussion forums and other interactive technologies, people are exposed today to more varied and frequent interaction opportunities than humans have ever experienced before. A vast literature implies that just by creating the 'right online environment', skills in constructing knowledge will be developed. Particularly, discussions and group work can contribute to the development of a collaborative, participative learning environment.

Woo & Reeves highlighted the fact that though interaction is crucial for constructing knowledge, not every interaction in a Web-based learning environment does have an influence on increased learning: "Idle chatting, online surfing, or mindlessly clicking Web pages is unlikely to lead to substantive learning even though learners are interacting with other objects" (Woo & Reeves, 2006:18). Vrasidas & McIsaac (1999) stressed that what is needed in order to construct knowledge is not merely interaction, but a meaningful interaction. Meaningful interaction is not just sharing personal opinions. A meaningful interaction must

stimulate the learners' intellectual curiosity, engage them in productive instructional activities, and directly influence their learning. The essence of a meaningful interaction holds true for both campus-based encounters and online interactions. A Web-based environment does not provide necessarily better conditions for a meaningful dialogue. It follows that the intervention of expert teachers in the study process is crucially important for constructing meaningful and valid knowledge in any study environment, and the teachers' role is most significant particularly when teaching novices, such as undergraduates in higher education, both in face-to-face and distant/online settings.

Meaningful interactions can take place through various means, from correspondence, a telephone conversation, a tutorial meeting or an online chat, when led by an experienced expert teacher/tutor. Creating communities of learners and promoting shared group assignments are also dependent on a careful design of the study process and the facilitation of a knowledgeable professional. Teachers remain central in any learning process, and their crucial role is somehow omitted in some discussions on the constructivist powers of the electronic technologies.

Challenging Tasks

Digital Divide

The traditional roles of distance education to widen access to education and promote social equity are still most important nowadays, particularly in developing countries, but also in most developed countries, even in those where access rates of the traditional age cohorts to higher education have reached 50% and over. Trends of life long learning, changing professional careers during a lifetime, and the crucial need to update and upgrade professional education on an ongoing basis have changed drastically the composition of student populations in both traditional campus-based universities and distance education providers. The digital technologies possess the potential to offer an array of attractive opportunities to the 'traditional' distant students. Unfortunately, most developing countries, and underprivileged populations in developing countries lack the appropriate tools and infrastructures to benefit from the wide range of possibilities embedded in the electronic media.

In the mid 1990s the term 'digital divide' surfaced as a means for politicians and social scientists to describe the socio-economic chasm between individuals, societies and nations who have access to computers and those who do not (Warschauer, 2003). The ability of the new technologies to overcome geographical barriers has resulted in the erection of new barriers as manifested in the digital divide. Noticeable

gaps in the appropriate infrastructure needed for the employment of digital technologies in education do exist between developing and developed countries, and between rich and poor in any national jurisdiction. Particularly, among the developing countries, the digital divide sets apart the technologically more advanced countries from the less advanced ones. Whereas a few African countries with small populations still lack even one Internet host, in Singapore 98% of households use the Internet. The technological divide is reflected in the number of personal computes per 1,000 inhabitants. Less than one in Burkina Faso, compared with 27 in South Africa, 38 in Chile, and 348 in Switzerland. In Sub-Saharan Africa the number of Internet hosts per 1,000 population ranges from 0.01% in Burkina Faso to 3.82 in South Africa (World Bank, 2002:14-15). Broadcast technologies such as radio and television have a much greater penetration than the Internet throughout much of the developing world, and the substantial gap is not expected to be closed soon (Bates, 2005; OECD, 2005; Trucano, 2005; World Bank, 2000, 2002).

Schachter et al. overviewed distance teaching in Africa, with a focus on the digital technologies, in order to examine how distance education may provide some directions to the challenges facing the resource-starved and ill-supported higher education in Sub-Sharan Africa where the loss of professionals through brain drain is a serious and depressing problem. They concluded that: "For most institutions in Africa the cost of setting up the necessary infrastructure remains prohibitive" (Schachter et al., 2006:171). Moreover, the challenge of setting up an appropriate infrastructure for utilizing the new technologies is further exacerbated by the dearth of appropriately skilled technical support staff. Schachter et al argued that no matter how the technical infrastructure will be upgraded throughout Africa in the next decade, it will have little effect, or even a negative effect of increasing the digital divide within the nations, unless a concurrent development takes place in human resources.

Great strides have been made in the last decade by government agencies and several international and non-governmental organizations, such as the Commonwealth of Learning, UNESCO, the World Bank, to bridge over the digital divide. A lot is yet to be done. A major challenge nowadays in the implementation process of the digital technologies in the next decade is to achieve the appropriate integration of the digital technologies into the education systems and institutions at large, and to ensure that the new technologies become agents of expanded access and equity and increase educational opportunities for all, not just for the wealthy and the technologically privileged (Gladieux & Swail, 1999; Guri-Rosenblit, 2009; Wagner et al., 2004; World Bank, 2002).

The emerging wireless technologies are thought to hold much promise for providing connectivity to remote areas, particularly in developing countries (Attewell, 2005; Motlik, 2008; Visser & West, 2005). The current trends in mobile computing are towards devices that are even more embedded, ubiquitous and networked than those available today. The capabilities of mobile phones, game consoles, and cameras will likely merge within the next five to ten years to provide a networked, multimedia device that can accompany everyone, anytime, anywhere. But projects utilizing such technologies are for the most part in pilot or planning stages, and face many regulatory hurdles (Trucano, 2005). Hopefully, some of the existing obstacles might be overcome in the future.

Cost-Effectiveness in the Digital Age

One of the great advantages of the industrial mode in distance education has been the ability to provide economies-of-scale while absorbing huge numbers of students. John Daniel argued that cost effectiveness was a major goal in establishing the large scale distance teaching universities, based on the industrial model: "Bringing down the costs of education and training has usually been an aim of distance learning systems. That is their relevance to the search for a more cost-effective model of mass higher education for the 21st century" (Daniel, 1996: 60). The division of labor of the academic teaching responsibility into two separate phases constitutes the essence of the industrial model of distance education. The first phase is devoted to the production of high quality self study materials by course teams, composed of experts. The second phase consists of the actual teaching of large numbers of students by lower rank academic faculty (Peters, 1994, 2001). As the number of students increases, the cost per student decreases. Some of the large distance teaching universities teach tens of thousands of students.

It seems that economies-of-scale provided by the large distance teaching universities, operating on the basis of the industrial model, led many to believe that any distance teaching technology is by its very nature cost effective. In addition to misunderstanding the essential difference between the industrial model of distance education and e-learning, two additional factors account for the sweeping expectations echoed in the 1990s as to the fast and easy profit opportunities to be had from implementing the new technologies in higher education settings. One factor relates to the substantial cuts of training costs that took place in the corporate world as a result from cuts of flights and hotel expenses on training. The other factor relates to miscalculating the costs of utilizing the new technologies by setting up an appropriate infrastructure, and creating support systems for ongoing maintenance and appropriate

support systems for both teachers and students (Guri-Rosenblit, 2005, 2009).

The cutting of costs in the business world caused many to assume that similar savings would occur also at universities employing e-learning. Obviously, it is more economical to bring training programs to the work place rather than sponsor the sending of workers for days to remote conference sites and training sessions. It is no wonder then that most of the profit making claims have come from the business and corporate world. But cuts in hotel and flight expenses have no relevance at all for students and faculty in the academic world.

Setting the appropriate infrastructure and maintenance of e-learning is costly. It is of tremendous importance to establish support systems for both students and teachers who use the digital technologies. The induction of the teaching faculty into the new technologies necessitates ongoing professional and technical support and the establishment of special centers for course development. Ongoing support is also needed for students, particularly weak students.

It turned out that developing online coursework is far more expensive, difficult and ephemeral than once expected. In some cases it proved to be even more costly and time-consuming for a university than traditional classroom teaching. Analyzing the cost structure of electronically mediated education, Rumble demonstrated that e-education is more costly than traditional distance education delivery and suggested "that it may prove to be more costly than traditional education" (Rumble, 2001:230). Many e-learning applications are human intensive, require expensive technical support, and small online classes in order to be efficiently used and compensate for the loss of classroom interaction.

Many agree that much work needs to be done related to the costs of the digital technologies' implementation in education environments (Arafeh, 2004; Perraton, 2000; Trucano, 2005). The lack of reliable costs data in virtually all areas related to the applications of the electronic media is quite striking. Few good, rigorous cost studies on the applications of technologies in higher education settings exist in developing countries, and surprisingly also very few such studies have been conducted in OECD countries as well (Perraton, 2000). Arafeh (2004) stressed an important issue related to investigating the costs of e-learning. Most cost studies neglect to ask perhaps the most fundamental question: 'Can you reach the same educational goals and objectives in a different manner at less cost without using ICTs?' Evidently, before large scale investments in online education are performed, much more work has to be done on the costs issue.

In face of the high costs associated currently with some applications of the digital technologies, there are some emerging policy recommendations as to how it is possible to cut the relevant costs of e-learning. For instance, the OECD study (OECD, 2005) suggested that e-learning could become a less expensive model compared to conventional face-to-face or distance education from a number of different sources, by: substituting some online provision for on-campus teaching (rather than duplicating it), facilitating increased peer/automated learning, use of standard/pre-existing software, drawing on the open standards and learning objects model to increase material re-use and sharing, avoiding duplication of effort, and relying on greater course standardization. In any case, re-organization of the digital technologies usage should involve a decrease in course development costs, a decrease in the student/staff ratio or savings due to less facility use (e.g., classrooms). Unquestionably, demonstrating cost-effective models of utilizing the digital technologies constitutes a most urgent task, particularly for distance education providers.

Redesigning the Industrial Model

One of the major obstacles in employing the digital technologies in most of the large distance teaching universities is embedded in the distributed teaching responsibility within the industrial model. In most conventional universities each professor is usually responsible for all the components in teaching a course on a particular subject, from its initial inception and design, through its teaching in a classroom or auditorium, to the evaluation of the students' achievements. At most, the lecturer might be backed by an assistant or several teaching assistants in large classes, mainly for checking assignments and exams. In distance teaching universities, which are based on the industrial model, the full responsibility of teaching in any course is divided between several actors, who do not merely assist the lecturer in specific areas, but take over fully some of the responsibilities in the development, teaching and assessment stages.

Distributed teaching responsibility is not manifested in all modes of distance education. In dual-mode universities, which teach both campus and distance students, senior academic faculty are usually responsible for the whole array of activities involved in preparing and teaching a course from a distance. They may be assisted by editors, instructional designers, technology experts and graphic designers, but still they hold the full responsibility for the course content, its assignments and the final evaluation. Also in distance teaching universities like UMUC (University of Maryland University College), which is the largest public distance teaching university in the USA, as well as in Phoenix University, which is

the largest private university in the USA, large numbers of adjunct-faculty are employed. The instructors are responsible for designing, teaching and evaluating their courses which are taught online, in a blended model or face-to-face. But each class consists of 15 to 25 students, in order to enable ample interaction in the study process.

Direct interaction between the professors who shaped the content of the course and wrote the study materials with the students is almost impossible in the universities based on the industrial model, due to the small size of their academic faculty. The whole notion behind the industrial mode is that a small number of experts develop course materials, which undergo stringent quality control mechanisms in their production process. But once the self-study package is produced, the tutors who interact with the students either in face-to-face tutorials or through the phone or e-mail, do not have any latitude whatsoever to alter the content of the printed materials and design the assignments and the final exam based on the actual interactions in the study process. The principles of uniformity and sameness apply to assignments and exams as they do to content, and they restrict any flexibility in changing the pre-designed materials or affecting the final evaluation.

The distributed teaching responsibility constitutes an Achilles heel in utilizing the communication capabilities enabled by the new technologies by distance teaching institutions operating on the premises of the industrial model. Evidently, a handful of professors cannot interact with hundreds and sometimes even thousands of students studying in highly populated courses. The tutors who are responsible for the interaction with the students have no degrees of freedom to engage in a constructivist dialogue with the students. In other words, the adoption of the interactive capabilities of the technologies requires the abolishment or redefinition of the very basic characteristic of the industrial model of distance education. Restructuring the distributed teaching responsibility within the industrial model requires the enabling of more degrees of freedom for the tutors and relaxing standards of uniformity and sameness. Definitely, not an easy task to accomplish, but at the same time - a most crucial one for the future development of the large scale distance teaching universities in the digital age.

Quality Assurance Mechanisms

An additional important advantage of the industrial model of distance education has been the ability to offer high quality materials and high quality education to large numbers of students, in addition to its cost effectiveness advantages. The massification of higher education has been accompanied by a major concern for the deterioration of academic standards. The large size of the mega distance universities has allowed

them to invest generously in producing high quality materials and to assist their learners with comprehensive support networks. Their high quality materials have been used by students from conventional universities, and in many national jurisdictions, distance teaching universities have become large academic publishing houses producing high quality academic textbooks. Stringent quality measures have been applied also to the teaching and final assessment processes. Providing greater degrees of freedom to the tutors in the teaching/learning processes necessitates also a redefinition of the quality measures applied in distance teaching.

Moreover, the new technologies gave rise in the last decade to a large number of bogus institutions and degree diploma mills, which Daniel Levy called 'Fly by Night Institutions' (Levy, 2008). Uvalic-Trumbic (2008) claimed that distance teaching is a preferred mode for many of the dubious providers. UNESCO, in recent years, has launched some initiatives aimed at protecting and guiding learners, such as the 'Quality Provision in Cross-Border Higher Education' which was published in 2005, the portal of recognized higher education institutions, and other tools aimed at alerting students to bogus institutions.

The new phenomenon of 'Open Educational Resources' (OER) has gained momentum recently and follows MIT's Open Courseware initiative that made hundreds of courses available online since 2001. OER are of particular interest to distance teaching universities, since such a pool of high quality materials and best practice might scale down the costs of producing high quality study materials for each institution. But inter-institutional and international collaboration are needed in order to establish appropriate quality assurance mechanisms to endure that the materials available in OER are of high quality.

The E-xellence instrument which is currently being developed in Europe provides an interesting example establishing international quality assurance benchmarks for online learning, and particularly for OER. The instrument has been developed by a consortium of 13 partners in the European community of higher education, e-learning and quality assessment and accreditation, including the European University Association. The main objective of E-xellence is to contribute to the process of enhancing e-learning, and most specifically assuring the quality of the OERs. The instrument consists of a fully online manual with benchmarks criteria and related performance indicators supplemented by a web-based self-assessment tool. The search for efficient and valuable quality control mechanisms will reign prominently on the future agendas of higher education institutions, utilizing open source materials and implementing various capabilities of the digital technologies.

Concluding Remarks

This article has attempted to illuminate three major points. First, even nowadays the major roles of distance education are to widen access and promote social equity in higher education. These roles are sometimes omitted in the discourse on the applications of the electronic technologies into distance education settings. Self-study packages, as well as online encounters, constitute the means, not the ends of distance education. Distance education will continue playing a prominent role in the expansion of higher education worldwide in the coming decades.

Second, most of distance education worldwide is still delivered through 'older' media, and it is perfectly legitimate. The digital technologies should always be regarded as means, not as ends, of distance education or education at large. Moreover, the technologies' abilities and capabilities are neutral. Their applications are always context- and teacher-dependent. A classroom lecture might be boring or thought provoking, just as online encounters might be. Students can be most passive in an online setting, and most active in a classroom discussion or even in a self-study setting, if the assignments in the self-study package engage them in stimulating activities. The role of expert teachers (or the teachers' presence in self-study materials) is invaluable in any knowledge construction in any study environment. It is of tremendous importance to unbundle in any study environment those activities in which the digital technologies have a unique advantage or ability, and those activities in which they do not have any advantage over 'older' and cheaper media. As in any social organization, distance teaching institutions should be able to capitalize on the sustaining merits of the technologies and avoid disruptive ones.

Third, many of the distance teaching providers, particularly those which are based on the industrial model, face more challenging tasks in their attempts to incorporate the digital technologies into their systems due to the conceptual framework of their operation. In order to adopt the industrial model to the digital age, it is essential to redefine the underlying premises of the distributed teaching responsibility embedded in the industrial model, and search for a new equilibrium between being able to offer high quality education to large numbers of students at lower costs as compared to campus-based education.

References

Allen, E., & Seaman, J. (2003). *Seizing the opportunity: The quality and extent of online education in the United States, 2002 and 2003.* Needham and Wellesley, MA: The Sloan Consortium.

Allen, E. & Seaman, J. (2004). *Entering the main stream: The quality and extent of online education in the United States, 2003 and 2004.* Needham and Wellesley, MA: The Sloan Consortium.

Allen, E. & Seaman, J. (2007). *Online nation: Five years of growth in online learning.* Needham and Wellesley, MA: The Sloan Consortium.

American Federation of Teachers (2001). *A virtual revolution: Trends in the expansion of distance education.* Washington D.C.

Annand, D. (2007). Re-organizing universities for the information age. *The International Review of Research in Open and Distance Learning, 8*(3).

Arafeh, S. (2004). *The implications of information and communications technologies for distance education: Looking toward the future.* Arlington, VA: SRI International, Final Report, P11913.

Attewell, J. (2005). *Mobile technologies and learning: A technology update and M-learning project summary*. London: Learning and Skills Development Agency.

Bates, A.W. (2005). *Technology, e-Learning and distance education* (2nd ed.). London: RoutledgeFalmer.

Beaudoin, M. F. (2006). The impact of distance education on the academy in the digital age. In: M. F. Beaudoin (Ed.) (2006). *Perspectives on higher education in the digital age.* New York: Nova Science, 1-20.

Bell, R. & Tight, M. (1993). *Open universities: A British tradition.* Buckingham: The Society of Research into Higher Education & The Open University Press.

Daniel, J. S. (1996). *The mega-universities and the knowledge media.* London: Kogan Page.

Donohue, B., & Howe-Steiger, L. (2005). Faculty and administrators collaborating for e-learning courseware. *EDUCAUSE Quarterly, 28*(1), 20-32.

Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Education Quarterly, 48*(1), 15-31.

Garrison, D.R., & Anderson, T. (2003). *E-learning in the 21st century: A framework for research and practice.* London: RoutledgeFalmer.

Gladieux, L. E., & Swail, W. S. (1999). *The virtual university and educational opportunity: Issues of equity and access for the next generation.* Washington, D.C.: The College Board.

Guri-Rosenblit, S. (1999). *Distance and campus universities: Tensions and interactions - A comparative study of five countries.* Oxford: Pergamon Press & International Association of Universities.

Guri-Rosenblit, S. (2005). Distance education and e-learning: Not the same thing. *Higher Education, 49,* 467-493.

Guri-Rosenblit, S. (2009). *Digital technologies in higher education: Sweeping expectations and actual effects.* New York: Nova Science.

Harasim, L., Hiltz, S. R., Teles, L., & Turrof, M. (1995). *Learning networks: A field guide to teaching and learning online.* Cambridge, MA: MIT Press.

Harasim, L. (2000). Shift happens: Online education as a new paradigm in learning. *Internet and Higher Education, 3*(1-2), 41-61.

Levy, D. (2008). Private higher education's global surge: Emulating US patterns? *Paper presented at the Conference on Privatization in Higher Education, Haifa: Samuel Neeman Institute, The Technion, January.*

Mackintosh, W. (2006). Modelling alternatives for tomorrow's university: Has the future already happened? In: M. F. Beaudoin, (Ed.) *Perspectives on higher education in the digital age.* New York: Nova Science, 111-136.

Motlik, S. (2008). Mobile learning in developing nations. *International Review in Open and Distance learning, 9*(2).

Nipper, S. (1989). Third generation distance learning and computer conferencing. In: R. Mason & A. Kaye (Eds.), *Mindweave: Communication, computers and distance education.* Oxford: Pergamon Press, 63-73.

OECD (2005). *E-learning in tertiary education: Where do we stand?* Paris: Centre for Educational Research and Innovation.

Perraton, H. (2000). *Open and distance learning in the developing world.* London: Routledge.

Peters, O. (1994). Distance education and industrial production: A comparative interpretation in outline. In M. Keegan (Ed.), *Otto Peters on distance education.* London: Routledge, 107-127.

Peters, O. (2001). *Learning and teaching in distance education: Analysis and interpretations from an international perspective.* London: Kogan Page.

Rumble, G. (2001). Just how relevant is e-education to global education needs? *Open Learning, 16*(3), 223-232.

Schachter, L., Pence, A., Zuckernick, A., & Roberts, J. (2006). Distance learning in Africa. In: M. Beaudoin (Ed.), *Perspectives on higher education in the digital age.* New York: Nova Science, 165-186.

Scott, P. (1995). *The meanings of mass higher education.* Buckingham: The Society of Research into Higher Education & The Open University Press.

Tait, A., & Mills, R. (eds.) (2003). *Rethinking learner support in distance education: Change and continuity in an international context.* London: RoutledgeFalmer.

Trucano, M. (2005). *Knowledge maps: ICTs in education.* Washington D.C.: InfoDev, The Information for Development Program.

Twigg, C. (2001). *Innovations in online learning: Moving beyond the no significant difference.* Troy. NY: Rensselaer Polytechnic Institute, Center for Academic Transformation, Pew Learning & Technology Program.

Uvalic-Trumbic, S. (2008). Guiding learners in new higher education spaces: What role for UNESCO? *A paper presented at the 5th Pan-Commonwealth Forum on Open Learning, London, 15 July.*

Visser, L. & West, P. (2005). The promise of M-learning for distance education in South Africa and other developing nations. In: Y. Visser, L. Visser, M. Simonson & R. Amirault (Eds.). *Trends and issues in distance education: International perspectives.* Greenwich, CT: Information Age Publishing, 117-129.

Vrasidas, C. (2000). Constructivism versus objectivism: Implications for interaction, course design, and evaluation in distance education. *International Journal of Educational Telecommunications, 6*(4), 339-362.

Vrasidas, C. & McIsaac, M. S. (1999). Factors influencing interaction in an online course. *American Journal of Distance Education, 13*(3), 22-36.

Wagner, D., Day, B., & Sun, J. S. (2004). *Information technologies and education for the poor in Africa.* UK Department for International Development.

Warschauer, M. (2003). *Technology and social inclusion: Rethinking the digital divide.* Cambridge, MA: MIT Press.

Woo, Y. & Reeves, T. C. (2007). Meaningful interaction in web-based learning: A social constructivist interpretation. *Internet and Higher Education, 10*(1), 15-25.

World Bank (2000). *Higher education in developing countries: Peril and promise.* Task Force on Higher Education and Society.

World Bank (2002). *Constructing knowledge societies: New challenges for tertiary education.* Washington D.C.: Directions in Development.

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