Achieving Student-Centred Learning in Technology Enabled Environments: A Case Study of e-Learning in the UAE

Rana M. Tamim, Associate Professor, School of e-Education, Hamdan Bin Mohammed e-University

Sanjai K. Parahoo, Assistant Professor, e-School of Business and Quality Management, Hamdan Bin Mohammed e-University

Abstract

This paper presents an overview an innovative blended learning approach to distance education and e-learning in the GCC region through a case study of a new e-learning university in the UAE. The University utilizes a combination of face-to-face, online, and self-paced learning as part of its delivery strategy, using the MOODLE Learning Management System and WIMBA Virtual Learning Environment. We discuss how learner-centered programs are offered with the help of a technologically enabled environment, and how technological advancements are used to cater for learners' needs through supporting and enhancing the various forms of interaction, namely learner-instructor, leaner-learner, and learner-content.

Introduction

At the present time, one does not need numbers and statistics to show that worldwide ownership and use of computers and computer related communication tools have increased and continue to grow by the day. Nonetheless, numbers tend to offer a more striking reflection about our utilization of and dependency on computer technology. According to World Stats (2010) there are almost 361 million internet users worldwide. Specifically, China is the leading country in internet usage with approximately 420 million users amounting to 31.6% of its population, followed by the USA with approximately 240 million users amounting to 77.3% of the population (World Stats, 2010). With their growing economies, the Gulf Council Countries are not very different with regards to technology use and advancement compared to other regions in the world. On the contrary, in light of the visionary leadership in the region, the development and change pertaining to technological readiness, infrastructure, and utilization of technology is quite impressive. A good example is the United Arab Emirates where 75.9 % of the population are internet users (World Stats, 2010).

One of the main areas that have been highly influenced by the advent of computer technology and Internet throughout the world is distance education (DE). DE is considered to offer many advantages including accessibility, cost-effectiveness, and opportunity for learning anytime anywhere (Moore & Kearsley, 2005).Nevertheless, and for a long time, DE was limited to mere correspondence education where students received course content and submitted assignments by mail having limited options for interaction with the instructor while practically no interaction existed with other learners. Technology's progression, particularly

with the development and wide spread use of the internet, changed the picture drastically. At the current time, educational institutions are increasingly taking advantage of developments in computer and communication technologies. Instructors are now transmitting their course materials, exchanging information and assignments, and communicating with their learners through a variety of technological tools and platforms. In sharp contrast to the first generation of correspondence education, the new approach to DE is having a substantial impact on the quality of interaction in DE. Technological breakthroughs have also widened the variety of modes through which DE is offered thus leading to more power, accessibility, flexibility and ease of offering programs and resulting in what some consider a more contemporary term for distance education, namely online learning. One of the emerging delivery modes is blended learning which combines the advantages of technology enhanced face to face instruction and electronic supported DE.

This paper presents an overview of an innovative approach for blended learning in the GCC region through a case study of a new e-learning university in the UAE.The University combines face-to-face, online, and self-paced learning as part of its delivery strategy, using a MOODLE Learning Management System (LMS) and WIMBA Virtual Learning Environment (VLE). We discuss how the technological advancements are utilized to offer learner-centered programs while catering for learners' needs through supporting and enhancing the various forms of interaction.

Interaction in Distance and Online Learning

The American Psychological Association advocates the learner-centered approach which focuses on the psychological factors under the learner's control (APA, 1997) that include: cognitive and meta-cognitive factors; motivational and affective factors; developmental and social factors; and individual differences. The approach supports learning by emphasizing the learners' role while focusing on the process of learning instead of the mere transmission of information from teacher to student (Laurillard, 2002; McCombs, 2000). Moreover, active learning, where professors and learners participate in knowledge construction (Lee, 2000), is thought to lead to positive results (APA, 1997; McCombs, 2000).

Within the distance education and online learning field, interactivity is thought to be one of the major supporters of learner-centricity. According to Moore (1989) there are three major forms of interaction involved in DE and online learning, namely learner-instructor, leaner-learner, and learner-content, as discussed below.

Learner-instructor interaction focuses mainly on the communication between the learner and the instructor where instructor tries to " stimulate or at least maintain the student's interest in what is to be taught, to motivate the student to learn, to enhance and maintain the learner's interest, including self-direction and self-motivation" (Moore, 1989, p. 2). In a DE, online, or blended context, such an interaction may be achieved through synchronous modes or asynchronous modes.

On the other hand, *learner-learner* interaction refers to various forms of interaction among learners including general communication or more focused group work (Moore, 1989). It is easy to understand why such interaction was almost absent in previous forms of correspondence DE and how technological advancements have helped in rendering such a form of interaction possible, convenient and easy. Similar to learner-instructor interaction in current DE, online, or blended contexts, this interaction may be achieved through synchronous modes or asynchronous modes.

Finally, *learner-content* interaction refers to the learners' interaction with the content matter in order to construct meaning, enable knowledge building and transfer, and support problem solving (Moore, 1989).While this form of interaction must have been at the core of correspondence DE, technological advancement has been able to move it to a higher level. Learners' interactivity with the content is highly enhanced in light of particular affordances of technological tools such as ease of Internet access and connectivity and increase in bandwidth, improved search engines and online knowledge accessibility and retrieval options, in addition to various individual and collaborative authoring tools that allow for different writing and knowledge building experiences.

Although distance education has evolved drastically from its dependence on "snail mail" to much faster and more flexible forms such as online and blended learning, voices questioning its strengths and success were still heard worldwide till recent years. To address this issue, Bernard, Abrami, Lou, Borokhovski et al. (2004) synthesized findings from 232 studies that compared DE to classroom instruction between the years 1985 to 2002. Findings revealed that particularly asynchronous DE courses resulted in more positive achievement and satisfaction results than classroom instruction. However, distance education fell short with regards to attrition, where findings revealed that classroom instruction resulted in higher retention rates.

More recently, Bernard et al. (2009) conducted a new meta-analysis to investigate the relationship between the three types of interactivity and student achievement through the synthesis of findings from 74 empirical studies. The overall weighted average effect size for achievement was 0.38 favouring more interactive over less interactive treatments indicating that the mean in the experimental condition will be at the 65th percentile relative to the control group. This means that the average student in a classroom where interactivity is higher will perform 15 percentile points higher than the average student in the lower interactivity group. Such findings support the need to structure course design in distance, blended or online courses to allow for and support interactivity at all levels.

Hamdan Bin Mohammed e-University: An innovative approach to DE

There are a number of possible approaches to deliver DE, depending on the national vision and objectives, the needs of the student population, and the availability of technological tools and their affordances. However, not any model can be a successful and sustainable one that is capable of catering for learners' needs in the various areas of academic interactivity and growth.

In this context, the approach adopted by HBMeU to deliver its courses makes it particularly suited for professionals who are in employment or have other social commitments and wish to pursue their education. A number of learners at HBMeU are professionals working in various fields. Moreover, many of them reside in different emirates and do not have the flexibility of attending regular classes in a traditional face-to-face university. Add to this the fact that many learners are women with professional as well as social commitments. All the above considerations create the need for a blended and e-learning university that is capable of addressing the needs of the 21st century learner in the United Arab Emirates and the region.

HBMeU traces its origins to the e-Total Quality Management College (eTQM) set up in September 2002 whichevolved into the first e-Learning University in the Arab world and which was subsequently renamed Hamdan Bin Mohammed e-University (HBMeU) in honor of HH the Crown Prince of Dubai in the February 2009. The University combines face-to-face, online, and self-paced learning as part of its delivery strategy, using a MOODLE Learning Management System (LMS) and WIMBA virtual Learning Environment (VLE).

The delivery model adopted by HBMeU is a blended technology enhanced approach that uses a combination of face-to-face, online, and self-paced learning. The face-to-face

sessions include in-class physical sessions where the learners meet with their professor and fellow learners during scheduled instructional sessions. It enables the learners to get to meet with their professor and to get to know each other to enable them to interact more effectively during virtual sessions later. The online component includes synchronous sessions where learners log onto a virtual classroom during prescheduled sessions to meet with the professor in a collaborative environment. Finally the self-study component includes guided periods of personal study that are enhanced by asynchronous or synchronous communication as needed. Such an approach optimizes the strengths of the various delivery models to provide a learner-centred environment conducive to meaningful learning and compatible with recent research findings in e-learning.

In line with HBMeU's mission statement, the importance of quality in fulfilling the strategic objectives of the University is stressed at various levels, within a learner centred approach. Within the context of the Arab World in general and the UAE in particular, HBMeU plays a major role in crossing the boundaries between several generations of the educational system and allowing for the development of human resource capacity and national competency building. By implementing technology-enhanced learning (TEL) through blended mode delivery, HBMeU provides a flexible solution for learners in the region. It allows the learners to pursue professional development within a life-long learning framework thus enhancing their knowledge without having to place their professional careers on hold. In addition, the university programs involve project-based course designs, thereby allowing for a stronger integration between theory and practice to support the development of graduates who will make a strong and effective contribution at their workplace.

Why Blended Learning?

One of the key advantages of blended learning is the flexibility it offers to learners. Particularly with regards to the HBMeU model, the implemented blended learning approach addresses the 21st century learners' need for flexibility while minimizing the feeling of isolation experienced by learners' in full distance education. This feature is of high importance and relevance in a region where e-learning is still in its infancy and awareness to its viability and strengths is catching up.

The MOODLE platform being the LMS used by the University provides a safe user-friendly environment where learners can download course materials and documents, hand in assignments, consult and download resources, participate in online discussion, and

communicate with the professors and other learners in an asynchronous fashion. Such a tool offers a particular level of flexibility and interaction that supports collaborative learning, and which could not have been achieved through regular emailing tools. In combination with the variety of tools offered by the MOODLE, the provision of study books and digitized material through each course portal enables learners to access and use of the course materials provided based on their own needs and time availability.

A particular tactic that helps enhance the learners' flexibility is the archiving of virtual sessions in the WIMBA platform which enables the learners to re-visit the recorded sessions according to their own needs andconvenience. The sessions are archived in different downloadable formats including mp3 that may be transferred to mobile phonesallowing the learners to conveniently listen to the sessions even if they are on the go.

The University provides learners' with a high level of flexibility with its assigned self-study sessions in each course. Here, the learners are not committed to attend either a physical or an online session. While the learners are expected to devote a particular amount of hours to self-study and assigned activities/readings, they are at a liberty to schedule them according to their availability without jeopardizing their professional and social commitments.

Finally, the overall technology enabled environment which includes the LMS as well as the use of mobile communication devices such as smartphones, particularly Blackberry's and iPhones is allowing for a smooth, flexible, and accessible interaction with the faculty members. This ensures that learners are provided with the required support whenever needed, thereby enabling them to make effective use of their study time.

Facilitating Learner Interactivity at Hamdan Bin Mohammed e-University

The university applies a learner-centred approach for the delivery of its programs and works within a technology enabled environment, where various stakeholders interact as presented in figure 1 (Parahoo, Tamim, & Crane, 2010). The framework supports the three forms of interaction thus allowing for a learner centred approach that enables meaningful learning.

With its technology enabled environment and its blended learning approach the university enablessubject matter experts (SME) to supportlearners' needs with regards to the three forms of interaction. The following sections highlight how each type of interaction is supported and enhanced through the different technological affordances as well as course design and pedagogical approaches and learner centred course design.

Learner-Instructor Interaction

The technological tools and platforms utilized by the University allow for a high level of interactivity between the learners and their professors. For one, the MOODLE learning management system provides various opportunities for asynchronous communication between the learners and their professors. Examples include the mailing options, note posting opportunities, and most importantly the discussions boards and forums where learners may share their opinions with their instructors and receive feedback pertaining to different topics and issues relevant to the course at hand.

Formatted: Font: 12 pt, Complex Script Font: 12 pt

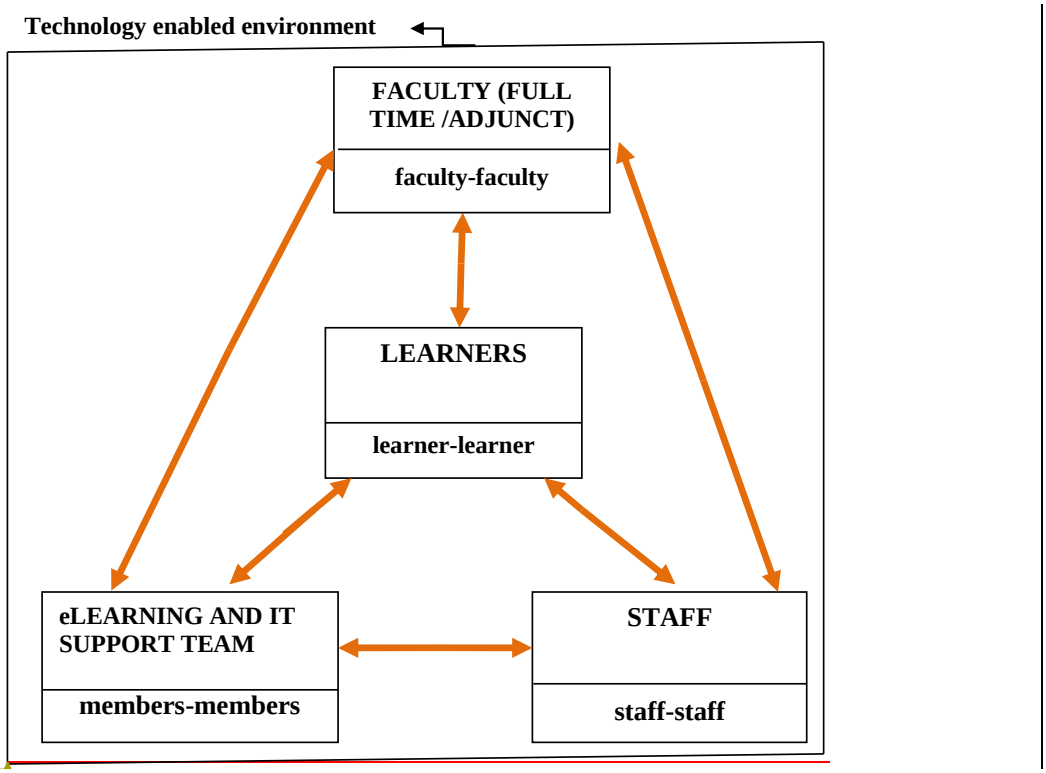

Figure 1: Interactions in the service management model

Similar to many other academic settings in the 21st century, learner-instructor interactions are also supported by regular emails and mobile texting, however, the affordances provided by the WIMBA Virtual Classroom at HBMeU may be considered as one of the most important technological supporters for learner-instructor interactions in this context. Through

the WIMBA platform, learners meet synchronously with their professors to receive instruction and collaborate in a learner-centred environment. Communication over the WIMBA platform includes chatting, two-way audio, and two-way video capabilities. The Virtual Classroom allows the professor to present material, lead discussions, offer feedback and even share his/her own desktop with the learners as deemed needed for the successful creation of a meaningful learning experience.

Moreover, the learner-instructor interaction is supported by the blended learning approach itself. Within DE and online learning settings, the learners' feeling of isolation is one of the most important challenges to overcome. By meeting leaners face-to-face during the physical sessions, and through the virtual classroom during the synchronous online sessions, the professors are capable of offering the learners with quality interaction that helps in achieving the course objectives while ensuring that they do not feel isolated. The interaction is also enhanced by the learners' interaction with their academic advisors (through physical as well as online session) who help and support their academic as well as personal growth when needed.

Finally, and most importantly, the learner-instructor interaction is supported and enhanced through the utilization of learner-centred course designs. The subject matter experts and the professors at HBMeU implement evidence based pedagogical instructional strategies such as collaborative and cooperative learning in the design of their courses and sessions. The utilization of contemporary constructivist learning approaches, allow the professor to take the role of the facilitator whose guidance, support, and feedback allow learners to develop their cognitive as well as self-regulation skills.

Learner-Learner Interaction

Similar to the learner-instructor interaction, the affordances of the technological tools used at the University allow for a high level of interactivity among the learners. The MOODLE learning management system provides various opportunities for asynchronous communication among the learners especially with email, discussion forums, and chat room options. One of the important options within the MOODLE is the wiki utility which helps learners in collaborating constructively in the process of joint knowledge design and creation.

The overall communication and interaction supported by the MOODLE, regular emails and mobile texting options is further heightened by the affordances offered by the WIMBA virtual classroom. In addition to the synchronous communication and interaction that learners

have in the virtual classroom during the synchronous online sessions, learners have the option to meet online at their own convenience to discuss course content and work on their assignments and projects. Such a feature is extremely helpful for the successful implementation of the learner-centered collaborative course design since many learners within a given group live in different emirates, rendering frequent physical meetings rather cumbersome. In their own space, learners can make use of WIMBA's presentation, chatting, desktop sharing, two-way audio, and two-way video capabilities.

Similar to the learner-instructor interaction, interactivity among learners is supported by the blended learning approach itself. The physical and online sessions allow the learners to interact with each other rather frequently and help them in the development of a sense of community. In addition, the University strives to support the learners through various initiatives and support entities. These include the learner council, the organization of open days, continuing education workshops, orientation session where senior learners support new comers, and a variety of social and academic events.

As would be expected, the learner-centred approach for course design is instrumental in the enhancement of the learner-learner interaction. The focus on collaborative problem based learning and projects allows for a constructive and interactive communication between the learners. Subject matter experts and professors work hard on offering learners a variety of opportunities to support their interaction. These include group activities and projects which entail face-to-face or online presentations.

Learner-Learner Interaction

While learners' interaction among each other and with instructors and professors is extremely important, we cannot underestimate the value of learners' interactivity with the content. The richer the opportunities offered to the learners for interaction with the content, the deeper their understanding is, and the more meaningful is their learning. Moreover, the higher the level of interaction, the more capable they would be of knowledge transfer to new contexts.

Needless to say, the MOODLE acts as a major enabler for learner-content interaction. Acting as a central repository for course content, the platform allows the learners to access information, including digitized content material in the form of SCORM compliant learning objects, and to make use of it.The archived WIMBA sessions support learners' flexibility but more importantly allow learners to revisit the online meetings enabling further critical

reflection on the presented material. More importantly, the interactive and collaborative features such as discussion boards, forums, and wikis allow for an enhanced learner-content interaction experience. With such tools, help adding a new dimension to the learning experience, and the learners are transformed from mere consumers of knowledge andbecome actively involved in the knowledge creation process.

Here again, the importance of the course design in the enhancement of the learner-content interaction cannot be ignored. The course syllabi and study plans act as advance organizers that help the learners in planning their schedules but more importantly in organizing their thoughts and relating the new information to previous concepts and notions. On the other hand, making use of collaborative and cooperative projects, and implementing project and problem based learning while using authentic and culturally relevant and related scenarios helps the learners make the best out of their courses. Finally, incorporating the use of the e-library and digitized content into the course activities strengthens the learners' interaction with content matter from various contemporary resources.

Conclusion

This paper has presented the model used by HBMeU for delivering its courses. It is based on a blended approach judiciously combining the advantages of face-to-face and DE methodologies. The University offers a viable strategy for competency development through bringing quality education and learning opportunities to motivated individuals and professionals interested in continuing their education. The University implements a model that makes use of recent advances in technology that offer increased the power, flexibility, ubiquity, and ease of learning online and at a distance.

Qualitative feedback received from learners have supported that the model is working well in supporting their development and ability to fulfill their goals. Learners have generally reported high satisfaction rates. Future research will address particular aspects of the course design and how to best ensure the learners' success and satisfaction, while empirically validating the model with regard to some selected outcome variables.

References

APA. (1997). Learner-Centered Psychology Principles: A Framework for School Redesign and Reform. Retrieved 25 March, 2005, from http://www.apa.org/ed/lcp.html

Bernard, R.M., Abrami, P.C., Borokhovski, E., Wade, A.C., Tamim, R.M., Surkes, M.A., & Bethel, E.C. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research.* 79 (3), 1243-1289

Bernard, R.M., Abrami, P.C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallet, P.A., Fiset, M., & Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research 3*(74), 379-439.

Internet World Stats. (2010). *World internet users and population stats*. Retrieved 1 September, 2010, from http://www.internetworldstats.com/stats.htm

Laurillard, D. (2002). *Rethinking university teaching: A framework for the effective use of educational technology* (Second ed.): London: Routledge.

Lee, C. (2000). *A paradigm shift in the technology era in higher education.* Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications.

McCombs, B. L. (2000). Assessing the role of educational technology in the teaching and learning process: A learner-centered perspective. Retrieved September, 2005, from http://www.ed.gov/rschstat/eval/tech/techconf00/mccombs_paper.html

Moore, M.G. (1989). Three types of transaction. In M. G. Moore, & G. C. Clark (Eds.), *Readings in principles of distance education* (pp. 100-105). University Park, PA: The Pennsylvania State University.

Moore, M.G. & Kearsley, G. (2005). *Distance education: A systems view,* 2nd Edition. Belmont: CA: Thompson/Wadsworth

Parahoo, S., Tamim, R., Crane, K. (2010, August) *An innovative approach to HRD in UAE: A case study of e-learning in Dubai.* A paper presented at the International Research Symposium in Service Management, Mauritius.

Dr. Tamim CV

Dr. Tamim is an Associate Professor in the School of e-Education at HBMeU. She has a Ph.D. in Educational Technology from Concordia University. She also has a Master of Arts and a Teaching Diploma in Science Education and a Bachelor of Science in Biology from the American University of Beirut. Her teaching experience includes graduate and undergraduate university instruction and supervision, adult in-service training, and high school teaching. She is actively involved in various research projects and is a collaborator with the *Centre for the Study of Learning and Performance*, based in Montreal, Canada. She is an active participant in national and international meetings and has published research papers in various peer refereed journals. Her research interests include: a) knowledge synthesis and dissemination through systematic reviews; b) the impact and role played by computer technology in facilitating learning; c) appropriate pedagogical approaches to the integration of technology in the design of learning environments based on student-centered principles.

ADDRESS:
r.tamim@hbmeu.ac.ae
Hamdan Bin Mohammed e-University (HMBeU)
Block 11, 5th floor
Dubai International Academic City (DIAC)
PO Box 71 400
Dubai
UAE

Dr. Parahoo CV

Dr Sanjai K Parahoo is a Faculty member at the e-school of Business and Quality Management at Hamdan Bin Mohammed e-University, Dubai. His research interests are service quality and relationship marketing. He is a member of the Franco-Australian Centre for International Research in Marketing (FACIREM). Before joining the HBMeU, he taught Marketing at graduate level for over 10 years, and he was the Coordinator of the Association for the Development of Education in Africa (ADEA) Working Group on Distance Education and Open Learning (WGDEOL). The WGDEOL is co-led by the Minister of Education, Culture and Human Resources of Mauritius and the Director of UNESCO-BREDA based at Dakar, Senegal. Dr Parahoo has undertaken a number of contract research studies in various countries in Africa, and has worked collaborated in activities organized by the African Union (AU) and the African Council for Distance Education (ACDE).

ADDRESS:
s.parahoo@hbmeu.ac.ae
Hamdan Bin Mohammed e-University (HMBeU)
Block 11, 5th floor
Dubai International Academic City (DIAC)
PO Box 71 400
Dubai
UAE