ICT Faculties' Usage in the UAE Private Universities: A Case Study

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Abstract

This study raises the question of the ICT usage in Education. A particular focus was put on the UAE private universities implementation of the Learning Management Systems and their engagement in terms of uses. A number of semi-structured interviews were conducted with a sample of academicians selected from four private universities in the UAE, in order to identify the experience of using Blackboard and Moodle. The result showed that the sample faces challenges of transformation of curriculum and learning process, mainly in some programs related to colleges of humanities and social sciences. To boost the use of technology in these programs, respondents claimed many recommendations, such as implementing platforms that recognize the Arabic language and organizing orientations and training sessions for both faculties and students.

Keywords: ICT; Blackboard; Moodle; Learning; Education; Usage appropriation; UAE

Introduction

Recently, Information and Communication Technologies (ICT) have brought an immense change in every walk of life, right from the habits of reading, writing and communicating to habits of learning, expressing and thinking. In this respect, education cannot be an exception to this alteration. In order to meet up with societal demands, universities around the world are moving rapidly to incorporate new technologies into all aspects of their core business of teaching and learning [1,2].

In fact, traditional approaches of teaching and learning have witnessed a reformative transformation with the incorporation of the ICT tools, such as online smart-boards, projectors, laptops, android systems, PCs, online lectures, tablets, cellular phones, e-readers, web resources and many other software and hardware devices.

ICTs are nowadays recognized as very useful, and in some cases even essential tools in higher education environment. Radloff highlights the opportunities that ICT presents for enhancing the quality of teaching and learning to include [3]:

- Providing encouragement for staff and students to reflect on how they teach and learn.
- Applying theory and research on learning and principles of good instruction to designing online learning environments.
- Making teaching (and learning) more visible and public.
- Encouraging collaboration and team work among staff (and students).
- Offering greater access to learning for more people.
- Increasing the skills and status of university teachers.

As a matter of fact, the ICT implementation and usage in the teaching and learning operations poses a great challenge to the academic staff. The realization of the ICT benefits in the educational process to a large extent depends on the academic staff that play crucial role in any innovation that takes place in the educational system. It is obvious that ICT requires academic staff to continuously adapt to the changes brought about by any technological development. As mentioned above, ICTs tools enable interactive and collaborative learning best, but their full potential, as educational tools, may remain unrealized if they are used merely for presentation or demonstration.

Linking ICT tools usage to the Course Learning outcomes or Program Learning outcomes, as well as choosing the adequate technologies to be used and knowing their modalities of use, for each course, must be the main goals guiding faculties to the good appropriation and utilization. For this purpose, Haddad and Draxler identify at least five levels of technological use in education: presentation, demonstration, drill and practice, interaction and collaboration.

The aim of this paper is to examine, from faculties' perspective, how ICTs should be used within the university in the Emirates. It will suggest a number of concrete and down-to-earth proposals, reaped by semi-structured faculties' interviews (qualitative analysis) conducted by the researcher himself.

Based on the foregoing, a guide of a number of semi-structured interviews was designed to find answers to the following questions:

- What are the ICT tools available at the universities included in the sample?
- What is the nature and level of ICT usage in the Teaching and Learning process?

- What are the main ICT usage limits in the universities included in the sample?
- What Kind of training/education needed according to the interviewees?

Background of the Study

The information and communication sector has always been a priority for the UAE government; and which, over the past several years, has implemented various initiatives to deploy the most recent and innovative ICT technology solutions and services.

In this respect, the UAE has become the second in the world, and the first in the Middle East and Africa region in the "Government Usage of ICT" index in the Global Information Technology Report for 2014, jumping 30 places, in accordance to the report released by the World Economic Forum [4].

His Highness Shaikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, launched in May 2013 the government initiative of smart government to transform the government services into smart services through mobile phones. The move has created a qualitative shift in the structure of federal government's ICT.

Concerning the way public education institutions are making use of e-learning tools, classrooms are becoming less restricted to their physical location as e-learning tools can support learning here. A growing number of schools in the UAE are adopting e-learning platforms, which is helping enhance the quality of student education.

In fact, e-learning platforms have become popular over the years as an education delivery and management tool for many public academic institutions. It allows students to learn beyond what is taught in a classroom and be able to engage with their peers and teachers online. These platforms are often used to assign tasks, set collaborative learning experiences, share learning resources and collect and mark student work.

A combination of offline learning- face-to-face traditional tutoring - and online learning, widely known as 'blended learning', is the method mostly used in many UAE schools. Students attend classes, and then supplement by completing their online multimedia coursework [5,6].

Now that it is obvious that Emirati elementary and secondary public schools are well advanced in using ICT, the question has to be raised about the higher education. What is the nature, level and particularities of ICT uses? and what are the shortcomings that must be overcome for improvement in ICT usage at UAE universities in the private sector?

Literature Review

In general, academic institutions around the world are investing heavily in various Learning Management Systems (LMS) to deliver and manage e-learning services. The focus of many research papers has been on the student's perception of LMS with less emphasis on the instructor's attitude [7].

To serve better the aim of this paper, the researcher selected a number of previous papers that have a significant link with the ICT uses and its background (UAE universities).

Patronis et al. conducted a study about Blackboard Satisfaction: Use and Preference among Faculty and Students at Zayed University. Their main concern was better understanding the use, needs and preferences of students and faculty when using (BB). Two questions were asked at the very beginning: What are students and faculty level of satisfaction with the BB features? What are the students and faculty preferences for specific BB features? And how often and when do students and faculty use various features of BB [8]?

Among the most significant survey results, we found that more faculty use BB in their courses, the more likely they are to report positive satisfaction with it Readiness students like to use it the least (still like to use it). Students like to use LMS more than faculties. Also, Blackboard seemed to be a great tool for students to use. But unfortunately the faculty never or rarely used it". Faculty education of BB tools is needed to develop their competency in ICT usage [9].

Vrazalic, et al. described in their paper "E-learning Barriers in the United Arab Emirates", a collaborative research project which empirically investigated the perceived barriers to e-learning for students studying at tertiary institutions in the UAE using an online questionnaire. The paper analyzed the associations between e-learning barriers and students' age and gender. The ease of use, usefulness and satisfaction with e-learning are also examined in relation to e-learning barriers. The preliminary findings of the study indicated that while the gender of the students was associated with a lack of interest for e-learning, as well as a lack of time to use e-learning, the relationship needs to be studied further. Data suggests that female students found e-learning to be less exciting, but male students had less time to use this type of learning. Of particular interest is the association between the usefulness of e-learning and e-learning barriers, which requires additional analysis. The lack of associations between e-learning barriers and student satisfaction is also worth noting [10-12].

Prescott aimed in his paper entitled "Faculty use of the course management system (iLearn) at the American University of Sharjah", to gain a clear appreciation of how iLearn is being used at AUS and to recognize the faculty members' opinions and perceptions of the CMS iLearn. The researcher tried to determine the patterns of usage among faculty members at AUS.

In answer to his first research question, "For what purposes is iLearn being used by faculty?", the administration, management and pragmatic communication are the most common purposes for ILearn usage by faculty; Using a CMS in these administrative management and communicative ways has advantages for students and faculty. The answer to the second research question, "What factors encourage faculty to increase or decrease their usage?", the indications are that 'ease of use' factors tend to discourage uptake and usage [13].

Mouakket and Bettayeb, in their study "Factors Affecting University Instructors Continuance Intention to Use Learning

Management Systems: The Blackboard System Case", tried to investigate the factors affecting instructors' continuance usage intention of the LMS in academic institutions in the United Arab Emirates (UAE) [14]. They proposed a framework based on the expectation-confirmation model (ECM) to examine the influence of several critical independent factors related to organizational, technological and individual characteristics on university instructors' perceived usefulness of Blackboard system, which in turn will affect their continuance intention to use this technology. Their findings can be summarized as follows [15]:

First, they have found that the technological characteristics, represented by user-interface design, influence perceived usefulness of Blackboard system. Second, they have found that having good technical support and proper training, as factors of organizational characteristics, can increase the feeling of the benefits of Blackboard system, suggesting that regular training and offering technical support to users will allow them to become familiar with LMS and consequently realize the benefits of these technologies.

To sum up, the mentioned studies were focused on how the ICT's systems are being used by faculty and students, in higher educational institutions like American University of Sharjah, Zayed University, Wollongong University, Middlesex University and HCT [16]. The majority of papers were based on surveys distributed to students or/and faculty as quantitative method of gathering information. Most studies focus on ease of use or on how faculty use CMS. Very few discussed the way these systems influence pedagogy.

Methodology

This study will include a qualitative analysis and investigate the ICT usage and appropriation level, with a special concern on LMS [17]. 34 semi-structured interviews with the deans, head of departments and programs directors belonging to four (4) private higher education institutions, implemented in the widest emirates (the most populated agglomerations in the UAE): Abu Dhabi, Dubai, Sharjah and Ajman. The choice of the sample components is guided by the researcher determination to enrich the research community and make it reflect as much as possible the real state of all the private universities in the Emirates [18].

The interview guide was built accordingly with the TEDS Approach (tell, explain, describe, suggest), to allow the interviewer to probe where she feels extra information might be forthcoming. Lindlof and Taylor point out that interview schedules are often considered a means by which researchers can increase the reliability and credibility of the research data [19].

Interviews with 34 faculties were conducted between 01/01/2018 and 15/03/2018. The interviews data was ready for analysis through qualitative data analysis (QDA) computer software "Hyper Research" which was partially used for this purpose. However, the researcher experienced some difficulties fitting interview data into the software frameworks. Some information and correlations were identified and compared manually and checked many times before confirming the result.

The Sample

The sample of this study includes 4 universities.

- Al Ghurair University (Dubai)
- University of Sharjah (Sharjah)
- Al Ain University of Sciences and Technology (Abu Dhabi)
- Ajman University (Ajman)

Findings

The interview data was grouped into recurrent themes based on specific verbal cues. Considering the interviews as elements of a case, within-case analysis was used to search the interview data for confirmation of identified patterns and to discover any additional patterns.

The researcher divided the interview data in four themes:

- ICT tools available at the universities included in the sample,
- ICT usage in teaching and learning process (nature and level),
- ICT usage limits in the sample,
- Kind of training/education needed according to the interviewees,

Theme 1: ICT tools available at the universities included in the sample

Each theme has its verbal cues. For this first theme, we traced a number of tools as mentioned below:

- Learning Management System (LMS): Software designed to manage user learning interventions and provide access to online learning services for students, teacher, and administrator. It allows the development and delivery of educational courses using the Internet as a delivery system.
- Course Management System (CMS): System designed to help lecturers to create an online learning environment. This system provides functions such a register courses online, course cataloging, bulletin system, information searching, online quizzes...etc.
- Blackboard (LMS Commercial platform): Online learning tool used by both teachers and students. It can be accessed both on and off campus and allows teachers to organize course information so students can retrieve it online like grades, syllabus, assignments and lecture.
- Moodle (LMS open source platform):

This study showed that the LMS is available to everyone in the universities' sample. The tool adopted varies from one university to another. The author notices that the use of ICT is limited to two types of Learning Management Systems: Blackboard and Moodle.

The use of Blackboard is confined to Al Ghurair University and University of Sharjah, while using Moodle is the choice of Al Ain University of Sciences and Technology and Ajman University.

According to the interviewees, this division is mainly being the result of financial aspects. Moodle is an open source platform; free for use. Blackboard is commercial/paid.

In fact, Blackboard is perfect for educational institutions, but it is very expensive, takes a lot of time to sort all the software out, and is not convenient for businesses [20]. But, in the meantime, even free LMSs like Moodle can require a significant IT investment, whereas premium LMSs like Blackboard can end up paying for them in the long run. The numbers show a strong split between LMS choice depending on how limited high school's student body is (and thus their resources) (**Table 1**).

Table 1: Moodle vs. Blackboard.

	Moodle	**Blackboard**
Payment model	Freemium (open source)	Proprietary
Course assignment	Activity list on a single page	Weekly activities tab
Managing content	Automatic content management.	Manual. You have to change settings every time.
Features/Plugins	Limited options, need to create new plugins and develop them	Extra features are included in the price
Product/vendor model	Many supporting companies and vendors	Only one company to work with
Help options	Forums, Knowledge Base	Forms, Knowledge Base + Live Tech Support
Mobile friendly	MoodlEZ iPad app for $2.99 and/or free MyMoodle app	Free Blackboard Mobile app
Market share (2015)	22.98%	34.22%
Source: Moodle VS Blackboard: that is the question, August 27, 2015 https://www.ispringsolutions.com/blog/moodle-vs-blackboard/		

Al Ghurair University has supplementary tools widely used, such as Google Drive, particularly used in the College of Design.

In fact, Google Drive is a personal cloud storage service from Google that lets users store and synchronize digital content across computers, laptops and mobile devices, including Android-powered tablet and smartphone devices.

The Dean of the College of Design at AGU explained, while being interviewed, that he resorted to the use of Google Drive because the storage possibilities in the Blackboard are limited and the architecture students' projects require large bearings.

Theme 2: ICT usage in teaching and learning process (nature and level)

In this stage, the researcher tried to find out how faculty members use available tools in their educational environment.

For that, she chose not to fix verbal cues in advance but to accumulate them while interviewing [21].

A large difference in terms of appropriation was noticed. While the deans and heads belonging to the colleges of sciences, engineering and architecture declared using LMS deeply and with a very accurate way, respondents from the colleges of social sciences, literature and humanities.

Declared a very basic kinds of uses:

We tried to compile the key words used by the sample in **Table 2** below:

Table 2: Sciences VS Humanities ICT Usage.

Sciences	**Humanities**
Bulletin board	Interactive component
Homework management system	Discussion forums
Social media platforms	Online exercises
Online exams/quizzes	Online exams/quizzes
Online survey	questionnaires
Plagiarism detection	Put Course material
Blackboard collaborate	Announcements
Blackboard analytics	Group/individual submission for research work
Rubric tools	Grading

Video conference	Online books
Discussion forums	YouTube, daily mention
Pearson's mastering physics	Keepvideo
Wiley/Wiley Plus	Mp3 convertor
Vitalsourse	Safe assign
grade book	Social media
Grading and correction comments	Attendance

It is obvious that there are certain operations that are used in common. The generated usage of ICT in the universities included in the sample can be resumed as following:

• Communication between faculty and students,
• Interactivity,
• Courses planning and organization,
• Feedback collection from students,
• Making the teaching material available for all the semester,
• Grading and announcements.

Thus, there is certain number of specific uses for colleges with scientific and technical specialties:

• John Whitmer presented on the use of analytics in improving student achievement at Blackboard conference. He encouraged staff tasked with increasing the adoption of analytics to focus on the 'why' and not the 'what' of analytics. This particular use is relative to College of Science (COS) at University of Sharjah (UOS).
• Blackboard Collaborate, freshly used at UOS, as a browser-based web conferencing solution that makes synchronous collaboration simple and clear. (http://www.blackboard.com/online-collaborative-learning, 2018).
• VitalSource, used also by COS at UOS, as an online bookshelf program that is used to access eBooks, download, access, and read course materials. (https://www.vitalsource.com, 2018).
• Wiley and Wiley PLUS, implemented as a research-based online environment for engineering programs at UOS. Students can access a wide range of content, including self-study tools, the online text and assessment questions. (https://hub.wiley.com/welcome, 2018).
• https://www.pearson.com

Overall, accuracy and depth of ICT uses are confirmed by the respondents belonging to colleges of sciences and technology, (mainly University of Sharjah). They declared being focused on linking the student to electronic references and e-libraries, as well as conducting qualitative and analytical researches. It is considered as the most important media of communication. Using LMS (Moodle or BB) fosters an interactive experience between faculty and students whereby they can not only access all the material needed for courses, but also introduce different dynamic exercises like quizzes, exams and questionnaires. No real interest for electronic references or text book was showed.

A specific interest heading towards social media as a vital source for the applied courses carried out by the respondents belonging to the colleges of communication including programs such mass communication, Radio and TV, electronic Journalism, Advertising and public relations [22].

The use of social networks (YouTube, Facebook, twitter, etc.), is becoming an essential component of the learning process in the College of Mass Communication at Al Ghurair University for example, especially when it comes to lessons such as production of PR materials, Online PR, Social Media, Media and PR campaigns…etc.

Respondents declared that in these courses, students are required to produce information materials such as Logos, brochures, posters, magazines, and to apply public relations and media campaigns through social media channels. The creation and posting of blogs, Facebook pages for example, are part of the Course Learning Outcomes CLO's.

The Head of College of Mass Communication insisted on the effectiveness of the SM uses. According to her, CMS usage definitely influences positively the pedagogical side of the teaching and learning operations.

Moreover, Mass communication and PR programs require specific software for the printed materials design, such as Keepvideo, In Design, Photoshop, as well as software related to audio and video editing such as Avid, Final Cut, and Cool Edit Pro [23].

The last notice is about the LMS uses in the colleges of humanities and social sciences which remained superficial and basic.

Theme 3: ICT usage limits in the sample

Talking about the LMS usage limits cannot be achieved without investigating about the sample perception concerning their added value, in the teaching and learning process.

Tracked answers are gathered in two themes: Advantages and disadvantages (limits) of ICT uses.

Advantages of using ICT from faculty perception are summarized below:

• LMS made it practical to use homework and assessment for the large number of students in the service courses,
• LMS for a certain degree of integrity, make it possible to use HW as a part of the assessment process,
• Video conferencing is becoming an important tool for recording and disseminating educational material,

- LMS is very helpful for faculty to make announcements at any time from any place.
- LMS helps faculty to save a lot of time in grading the assignments and quizzes especially for a large number of students,
- In addition of saving time spent in printing and copying exam papers for hundreds of students, faculty also saved an important of papers and ink which is of great importance in protecting our environment,
- Social media (SM) usage makes the PR courses furnished. It supports the pedagogical process:
- Brochures and PR magazines, as well as audio and video editing software, such as Avid and Final cut for video and online campaigns.

 Disadvantages of using ICT:

- Subjects pertaining to technology and science have benefited immensely from the use of ICT in classes because the nature of the subjects taught lends themselves easily to the integration of technology. However, less benefit has been marked with literary, oral and theoretical subjects,
- ICT tools are updated and students are kept abreast of changes and new technologies,
- In some areas, ICT tools do not give detailed students' performance, punctuality, and attendance. Many projects and assignments in humanities courses do not fit to LMS frameworks,
- It takes time to prepare the electronic data and to respond to all students' messages,
- Some universities are weak on BB support and especially on maintenance and faculties' support and tutoring,
- Some faculties are a little lax, they show some resistance to any change and they think that teaching process in some fields has to remain classic to keep its authenticity, without recourse to technology (Humanities in particular),
- In some scientific colleges (College of Pharmacy, at Al Ain University), some faculties resist any kind of changes in their learning environment. (According to the HOD in the named College, the incapacity of using ICT for some instructors is due either to their age (old people), or their lack of interest),
- Some technical issues related to IT also hinder the use of ICT sometimes, especially when internet connection is needed but not available all the time,
- ICT use is considered as time-consuming for the teachers especially in the enclosure of quizzes and multiple choice questions,
- Some faculties are not very enthusiastic to using ICT because are not technology savvy,
- Some respondents claimed that the limited use of the Arabic language in the E-learning environment represent a barrier for them to integrate ICT,
- Some respondents affirmed that CMS causes too much dependency on the internet which damages the student's capacity of creation and creativity,
- Blackboard has a limited size for submitted files that is not fit with design college file submission. This submission has multiple files from different origins and some of them have bigger sixe than what allowed by blackboard.

To summarize, ICT usage limits are related mainly to miss-judgment of their added value in the teaching and learning process, (especially among faculty belonging to Colleges of Humanities and social sciences). Besides, technical issues related to IT departments in some universities included in the sample, also hinder the use of ICT (lack of IT help desks to orient students and advice faculties, slow technical updates to software and internet interruptions, etc.) [24].

The last factor driving to avoid ICT usage (mainly LMS) is faculty and students' lack of proficiency in technology.

The sample was unanimous on the need to receive intensive training in LMS and software platforms and applications in order to improve productivity and deepen the linking of technology with the CLOs and PLOs, in all disciplines included in the sample.

Theme 4: Kind of training/education needed according to the interviewees

The kind of education and training demanded by the respondents are various. They vary accordantly with the nature and level of ICT usage of each interviewee.

Faculty affiliated to colleges of sciences and technology claimed training sessions for the following subjects:

- Blended Learning,
- More assessment tools to be included,
- Discussion forums techniques.

Faculty belonging to colleges of Humanities and social sciences are claiming basic level of training. They are still discussing issues related to the following:

- Intensifying awareness and sensitization campaigns on the importance of integrating information and communication technologies in the teaching and learning process,
- Planning an electronic courses,
- Examination process.

Discussion and Conclusions

The most important result reached is the consensus to engage seriously in the investment of modern technologies within the educational institutions that have been studied. The type of applications used varied according to the faculties and specialties.

While applications were advanced and in-depth in terms of use in the colleges of sciences, medicine, engineering and pharmacy; the use of information and communication technologies in the colleges of arts and humanities seemed basic and in some cases marginalized. ICT usage limits in these colleges are related mainly to miss-judgment of their added value in the teaching and learning experience as well as faculties ICT illiteracy.

The results related to the resistance of some faculties to use the ICT and to engage in eLearning process, correspond to a number of findings reached by Olivier in his study about the role of ICT in higher education for the 21st century applied to Australian sample of universities [25]. Olivier confirmed that

there have been a number of factors impeding the wholesale of ICT in education across all sectors. There have been included such factors as lack of training among established teaching practitioners, a lack of motivation and need among teachers to adopt ICT as teaching tools. But, in the meantime, the author explained that new factors have emerged which have strengthened and encouraged moves to adopt ICTs into classrooms and learning settings. There have included a growing need to explore efficiencies in terms of program delivery, the opportunities for flexible delivery provided by ICTs [26].

Noted that the situation experienced by the Australian professors at the beginning of the second millennium (2002), is similar to the Emirati sample situation in the present (2018). The author tends to predict that this situation is temporary, and that the turnout of technologies will increase with the years in the UAE universities, when it proves its worth in all curricula and disciplines (humanities and sciences in particular).

In the same context, another study about challenges for using ICT in Education, conducted by Salehi confirmed that insufficient technical supports (trainings and orientations) at schools and little access to internet (weak WIFI network) were considered as the major barriers preventing teachers to integrate ICT [27,28]. The interviewee unanimously claimed their desire for multiple training to get familiar with the E-learning environment and to assure its usage.

At the end, some disciplines included in the Emirati private universities, face challenges of transformation of curriculum, mainly programs related to humanities and social sciences.

To enable faculties to effectively use ICT, respondents claimed many recommendations, such as implementing platforms that recognize the Arabic language and organizing orientations and training sessions for both faculties and students.

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