

Influence of Learning Management Systems on Teaching and Learning in Saudi Universities

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ABSTRACT

This paper investigated the impacts of Learning Management Systems (LMSs) on education in Saudi Universities, to ascertain the effectiveness of LMSs in this setting, and the challenges met during their implementation. Both qualitative and quantitative approaches were used to investigate the influence of LMS on teaching and learning in three universities in Saudi Arabia. The study adopted both questionnaires and interviews to collect data from 100 students and 101 lecturers in relation to their attitudes to LMS use at their respective institutions. The 201 participants were sampled from the three universities using a stratified random sampling method, where an almost equal proportion of students and teachers from the institutions were involved in the study. The results showed that proper use of LMS reduces time wastage among students and allows them to handle their professional and academic lives simultaneously. Meanwhile, lecturers receive training and learn how to operate the LMS systems for academic purposes, but at times find this a time-consuming process that requires more administration than teaching input. The outcome of this study is significant in expounding the positive as well as negative impacts of LMSs on education in higher learning. More so, it brings into the fore the need for university administrations to consider adopting such a system as a contemporary approach in learning and teaching in the universities to enhance the learning process. The results may also form a basis upon which policymakers in the educational sector may formulate sound policies to enhance and promote quality education in Saudi Arabian universities.

Key words: LMS, Saudi Arabian Universities, learning and teaching, time management, learning technology, technological challenges, technology adoption challenges.

INTRODUCTION

The best way to study without being physically present in class is via a Learning Management System (LMS), such as Blackboard or Sakai, and the advent of LMS technology in the late 1990s enabled both teachers and students to pursue education in a more convenient manner in contemporary society. LMSs allow teachers to check students' progress, administer examinations, and provide grades according to students' performance level. Young people, meanwhile, prefer to study via LMS because they were born into the generation that embraces such technology use. Thus, this study reveals the influence that LMS technology has on learning and teaching, particularly in Saudi Arabian Universities. It also identifies the barriers and challenges that occur when adopting this learning technique.

Background and Theoretical Framework

LMS technology is vital for training people not only within the school set-up but also in the business environment (Dias and Diniz, 2014). The positive aspect of using such software in this line of learning includes its ability to handle both simple and complex data. Additionally, the software has been merged with various digital frameworks, thus making it possible to manage

the curriculum, evaluation tools, and training materials that are necessary in any programme of learning (Dahlstrom and Bichsel, 2016). According to Sharifah, et al. (2013), LMSs allow individuals to manage and distribute teaching materials to the target students with a great deal of ease. In this respect, LMSs provide lecturers in various universities across the globe with the opportunity to inculcate effective teaching and learning methods while discharging their academic mandates in higher education (Limongelli, et al., 2016). The advent of the Internet and social media has facilitated the process of learning in addition to interaction and communication among the global populace (Conde, et al., 2014). Studies also show that students have not only embraced the use of LMSs in university education, but have also taken advantage of the proliferation of information on the Internet to enjoy the fruits of technology.

Amongst the functions provided by LMSs are provisions for discussion and bulletin boards. Just as in a traditional classroom set-up, learners are at liberty to engage in discussion; however, unlike in the classroom, on LMSs, the threaded discussions are available at any given time and students can join these discussions to seek help from their fellow students (Persico, Manca, and Pozzi, 2014). Moreover, since most learners have access to vast online contents, the information they share on discussion boards is relatively rich in knowledge (Dias and Diniz, 2014).

While studies on the embracing and subsequent use of LMSs exist across the globe, Alharbi, Saleh, and Drew (2014) note that the extant literature on the use of such systems is shallow in the context of Saudi Arabian third-level education. Of more importance to note is that different lecturers as well as departments often present different views and perceptions in relation to the adoption of LMSs in the university curriculum (Wamda, 2017). While, as mentioned above, LMSs have improved the learning process in many schools worldwide, their impact on Saudi Arabian universities remains contentious as few studies are available. The advent of the Internet and social media has further necessitated the effective use of LMSs worldwide, and the Saudi Arabian educational system should be no exception. In this respect, this study sought to prove the effectiveness of LMSs in the Saudi Arabian university educational system and thus to fill the existing literature gap by providing relevant and reliable information on LMS usage in the Saudi educational context. Notably, while LMSs have been used in several universities in Saudi Arabia, their efficiency not only across departments but also across institutions remains unexplored.

The business world, particularly business companies, also utilizes the knowledge of LMSs to train its staff. During certain times, management may find it difficult to reach out to all stakeholders and train them using face-to-face communication, while a company that has a large and scattered workforce finds it difficult to train employees because they cannot all be present at the same time. In such instances, the organizations rely on their best alternative for training purposes, for instance, LMSs. Many companies have realised the benefits of such training methods, while the eLearning system is also gaining momentum in the academic sector, specifically in higher learning institutions. There is commendable proliferation of technology across the global society, and the education sector is still struggling to cope with this technological change (Anderson, 2016).

For instance, the introduction and widespread use of the Internet among youth worldwide has become useful in terms of the effective implementation and realization of the goals and objectives of LMSs. Facebook came out as a popular social networking site. Like many other new technologies, Facebook provided an opportunity for teaching and learning based on its unique built-in functions offering pedagogical, technological, and social affordances. For example, it is possible to use Facebook group as a type of learning management system in

pursuing specific goals and objectives. According to Gautreau (2011), students can take advantage of their online presence to learn using LMS programs comprehensively. Poon, et al. (2017) reiterates that the advent and proliferation of social networking sites have facilitated the effective integration of LMS programs into university curricula across the globe.

According to Dias, Diniz and Hadjileontiadis (2013), LMS programmes provide an avenue for students to enforce their multi-sensory and multi-modal experiences during the learning process and engage in research trials, particularly the use of LMS in the university curriculum. As a result, LMSs aid in enhancing competence among students in those universities that have embraced them (Dias, Diniz and Hadjileontiadis, 2013).

However, Pappas (2017) argues that LMSs are not devoid of challenges, particularly in relation to factors that must be considered before implementing them in university education. In this respect, Pappas mentions such factors as specification support, pricing models, as well as customer support as some of the issues that affect the adoption and subsequent effective implementation of an LMS (Pappas, 2017). An effective LMS should harmonize the training of employees in a corporate sector with knowledge management.

Several academic institutions have made use of LMSs for the benefit of learners, with many schools developing an eLearning section in response to the demands of those students who cannot make it to the classroom. According to Dias and Diniz (2014), the future of education is bright with LMS because technology is controlling the world. Different schools, particularly universities, are moving to a paperless learning program due to the influence of LMSs. The results of this research will be among the means that can be used to identify whether or not LMS use is essential in universities, especially those in Saudi Arabia.

Research Questions

This research aims to answer the following questions:

- How effective is learning management in Saudi Arabian universities?
- What are the challenges faced while implementing LMSs in Saudi Arabian universities?
- How can these challenges be overcome?

RESEARCH METHODOLOGY

This study was conducted in three Saudi Arabian Universities, including Umm-al-Qura University, King Faisal University, and King Saud University. The universities had enrolments of over 45,000 students, 33,691 students, and 55,000 students, respectively, as of 2015. Business, health sciences, and education departments were chosen for research due to the variances in their enrolment rates. Notably, business had the highest number of students, while education had the least. Health science was chosen to ensure representativeness of the study.

Type of Research

In this study, both qualitative and quantitative data were collected to make it possible to understand the impact that LMSs have had on learning in Saudi universities. The qualitative research entailed analysis of the results of LMS programs, the challenges that the system faces, and the manner in which those problems can be fixed. The quantitative nature of the research made it possible to analyse the statistical data and draw relevant conclusions (Fowler, 2013).

Sampling Method

A simple random sampling method was used to collect data. I engaged a member of university management staff in each of the three universities to access the student fraternity, where I received a list of students, with a focus on those in e-learning programmes. The students

sampled for the study ranged in age from 18 to 24 years. I then utilized a simple random sampling method to select individuals, and conducted interviews and questionnaires to obtain data. I also obtained a list of university staff members. I had limited interest in the administrative staff, and so the focus was on teaching staff, particularly those who delivered online learning. While the age range of students was relatively narrow, the lecturers sampled for the study had a relatively wide age range; notably, between 38 and 54 years. The two lists were compiled, and the study sample was then selected at random.

Respondents

As stated, the primary sample comprised lecturers, especially those engaged in teaching via eLearning portals, and students in business, education, and health sciences departments. These two groups were considered to have first-hand information on the survey topic. It is also worth noting that the universities involved in the study had adopted various LMSs, including Blackboard, WebCT, Online Learning, Moodle, and Nicene among others that are of great interest to this study. The lecturers and students came, in equal proportions, from all three departments in the three universities and most importantly, since LMSs were used for teaching purposes, the participants were deemed suitable for the study. The sample population comprised 201 individuals--100 students and 101 lecturers. The random sampling of 101 lecturers of possible 350 and 100 students of a possible 600 in the three departments within the three universities ensured that the data gleaned would represent the entire population of teachers and students. This sampling method also ensured that the information obtained was not only representative but also devoid of any bias. The table below presents information on the number of students sampled from each of the three departments, comprising the business, education, and health sciences departments in the three universities. An almost equal number of males and females were intentionally sampled to ensure gender balance.

Table 1: Number of Students Sampled for the Study from Each Department

University 1						University 2						University 3					
Business Dept.		Education Dept.		Health Sciences Dept.		Business Dept.		Education Dept.		Health Sciences Dept.		Business Dept.		Education Dept.		Health Sciences Dept.	
male	female	male	female	male	female	male	female	male	female	male	female	male	female	male	female	male	female
6	5	6	5	5	6	6	6	7	4	6	5	5	5	6	5	6	6

Data Collection Methods

A diverse range of data collection designs were employed for use in the study. One of the most instrumental methods was the administration of open-ended questionnaires, with yes or no answers required and a small explanation as shown in Table 2. The students did not face any difficulties in completing the questionnaires as the questions were relatively direct (Burns, 2000). Moreover, the questionnaires did not require much time to complete. In addition, there is a need to carry out a pilot study to ascertain the validity of the survey. According to Sekaran and Bougie (2016), questionnaires are not only an economical method of data collection but can also reach many participants during the data collection process. Furthermore, questionnaires provide quantifiable responses that are relatively easy to scrutinize (Sekaran and Bougie, 2016).

The other method used to collect qualitative data was interviewing. Participants were asked general questions about the influence of LMS programs on the learning and teaching process in their universities. For instance, I sought to ascertain students' awareness of the existence of the software and their level of experience with its application in their respective curricula. I also

attempted to establish students’ perceptions of the software, including their views on its adverse and beneficial aspects, if any. I ensured the validity of the interviews through various means, including conducting a pilot interview, desisting from asking leading questions, taking notes during the interview, as well as allowing the interviewees ample time to explain and express their opinions, provide clarity, as well as summarise the main points. The participants were asked about their personal feelings on these matters, and, unlike the questionnaires, the interview data were detailed. Therefore, a proper analysis of the findings was later conducted and appropriate conclusions generated. The interviews lasted approximately 90 minutes, giving a lot of time to engage the participants from the universities.

The data obtained from the study through the administration of questionnaires as well as the responses from participants from the interviews were stored securely.

The interview questions included the following:

1. What are the advantages associated with the use of an LMS for study purposes in your university?
2. What is your opinion on the way in which learning is controlled in the different eLearning Portals?
3. What are some of the challenges that you have encountered when using the program (as a student or lecturer)?
4. What is your opinion on the causes of these challenges?
5. How do you think the problems can best be fixed?
6. Kindly make any final statement before we close the session.

Table 2: Research Questionnaire on the Influence of LMSs in Saudi Universities

Academic Level: _____ Course: _____ Age: _____

Instruction:

Please check (√) and rate how you feel based on the below statements on eLearning

1. The LMS learning program enables students to manage time more efficiently compared to classroom studying.

Strongly Disagree	Disagree	Agree	Strongly Agree
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2. Students can engage in other activities in the LMS program compared to the classroom studying environment.

Strongly Disagree	Disagree	Agree	Strongly Agree
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3. Most post-graduate students use the LMS.

Strongly Disagree	Disagree	Agree	Strongly Agree
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4. Students on the eLearning program perform better than those in the classroom set-up.

Strongly Disagree	Disagree	Agree	Strongly Agree
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5. Classroom studying should be eliminated and learning rolled back to LMS only.

Strongly Disagree	Disagree	Agree	Strongly Agree
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6. Traditional hands-on courses can be studied through LMS.

Strongly Disagree	Disagree	Agree	Strongly Agree
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Ethical Guidelines for Data Collection

Informed consent to conduct the study was obtained from the relevant university authorities. Additionally, all participants provided informed consent to participate in the research.

RESULTS

The questionnaire responses showed that most students in the participating universities, particularly those taking postgraduate programs, opted to use eLearning, at a percentage of 67%. A larger percentage chose to take their exams online without attending classes physically (71%). A higher percentage (54%) of students stated that they performed better when they studied and took examinations online than when they were present for the whole semester and attended classes in person. On the other hand, 46% argued that they were more likely to pass exams while studying in the classroom than online. I utilized the Statistical Package for the Social Sciences (SPSS) (2015) to analyse the data after the collection process. In this paper, I utilized SPSS to analyse the descriptive statistics, particularly the responses provided by students on the influence of LMS on their studies. For instance, the perceptions of students and their percentages, as well as the lecturers both in favour and against LMSs were included in the descriptive analysis using SPSS. Figure 1 below provides detailed information on students' perceptions of LMSs in their universities. Figure 2 provides details of lecturers' perceptions of the use and influence of LMSs in their universities. Forty-five percent of the lecturers believed that classes should be scrapped entirely and students allowed to study through the various online sites. Most professors (55%) also stated that checking learners' progresses easier through LMSs than through papers, which are given in the classroom set-up.

Figure 1: Students' Perceptions of LMS Use in Saudi Universities

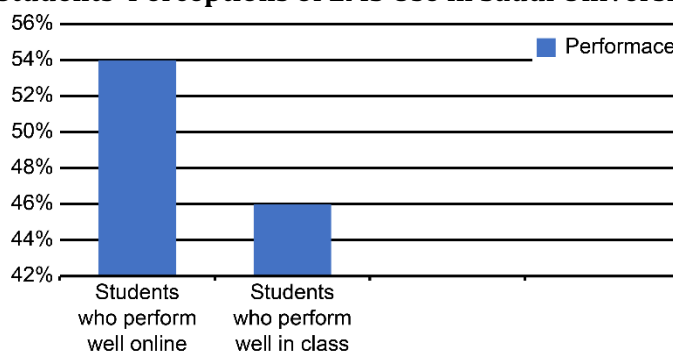
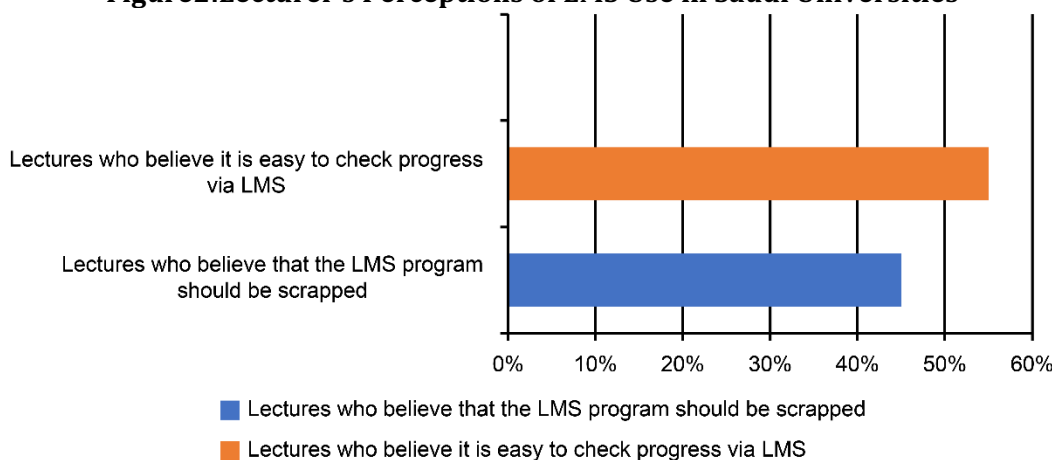


Figure 2: Lecturer's Perceptions of LMS Use in Saudi Universities



The majority of students taking traditional hands-on courses said that the complete abolition of classes would negatively affect their learning, as they cannot discharge their duties without

engaging in practical approaches. Students from various departments responded differently to the introduction of LMSs. For instance, 81% of students from the business department embraced the integration of LMSs into the university education system, 40% of students from the education department did so, and 60% of health science students advocated the incorporation of technology into their learning process (Figure 3). It is worth noting that all lecturers from the business department embraced the integration of LMSs into Saudi university education, citing its effectiveness at training business students. Although lecturers from other departments also welcomed the technology, they did not appreciate it to the extent that their business counterparts did. For instance, 60% of the education lecturers embraced the system, while 65% of health science lecturers welcomed its integration in Saudi university education (Figure 4).

Figure 3: Percentage of Students Who Support LMS

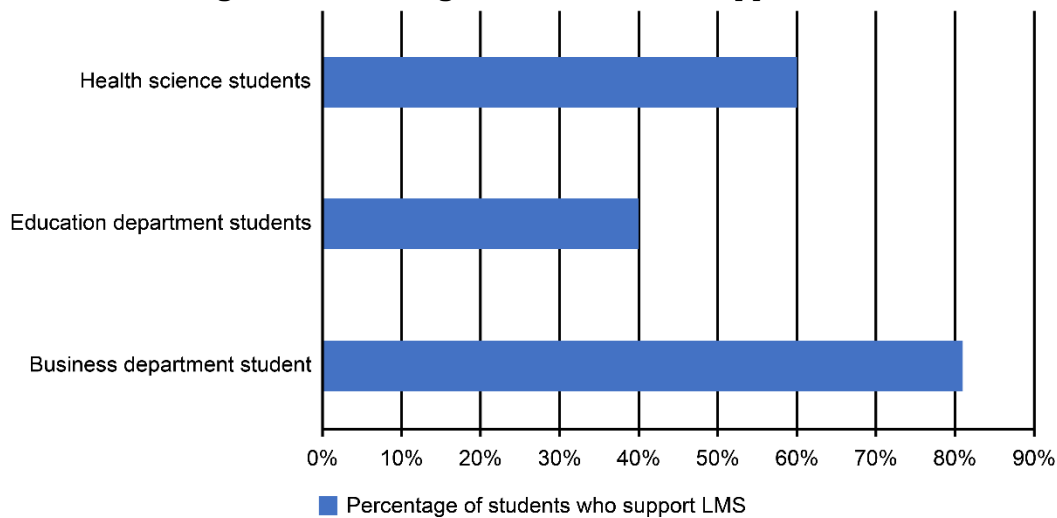
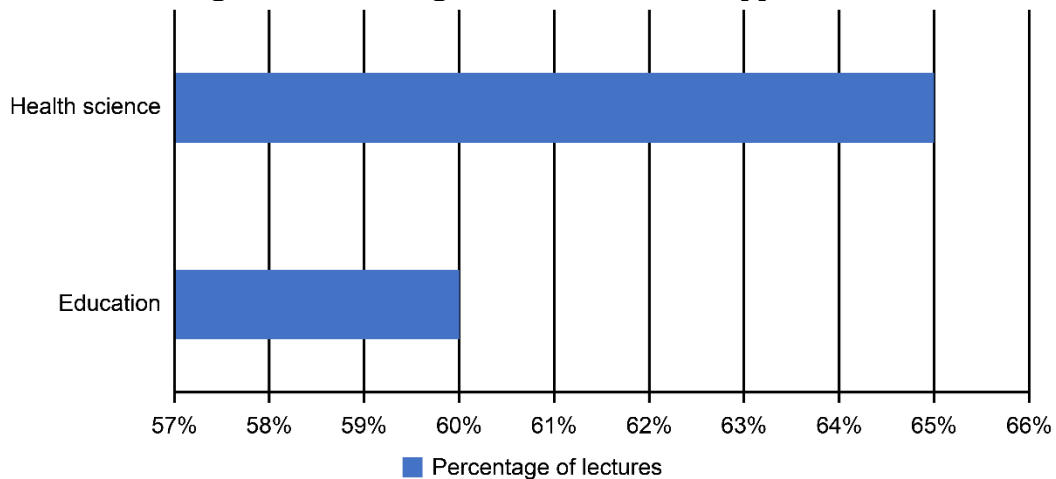


Figure 4: Percentage of Lecturers Who Support LMS



DISCUSSION

Based on the information obtained from the study sample, many students and lecturers in Saudi universities like LMSs. However, it is imperative to examine the influence of LMSs on the education sector, particularly university education. LMSs have a number of advantages, which is why the students in Saudi Arabian universities have been able to embrace them.

One of the benefits for students is that they can attend classes wherever they are, as well as taking examinations from those locations. Students are different; there are those who work

part time to raise their school fees and those who must take care of their families. On the other hand, some students are entirely dependent on their parents, and as such are relatively carefree. Each of these three categories of student has distinct priorities, which are difficult to meet simultaneously.

For example, a student who is struggling to raise his or her school fees may not have sufficient time to spend in the classroom for the whole day as opposed to those students who are dependent on their parents. The only system that will allow all three groups of students to manage their studies is LMS-type learning. The sample population stated that LMSs allowed them to take classes wherever they are and with a great deal of ease. One student spoke of the difficulty he faced while attending classes, and raising the school fees by himself. His life was quite hectic, and at times, he had to miss out on most classes to earn a little cash for upkeep and school fees. Amid these challenges, he stated that he is currently enjoying the benefits of the introduction of the LMS system at the university. The benefits attributed to LMSs in college education across the globe are enormous, and Saudi university education is no exception.

The other influence of LMSs is the presence of a large variety of learning materials within the different online portals. In a classroom set-up, some lecturers do not even provide notes. Thus, in Saudi universities, students have difficulty accessing information, and some even give up. This issue replicates similar findings in other universities worldwide (Pappas, 2017).

Another advantage cited by the students was the reduction of learning and development costs. The advantages of LMS mentioned above emphasise the beneficial aspects of LMS in university education. Not all the students live in the vicinity of the college. Thus, in order for them to have 100% class attendance, students must rent hostels, arrange and pay for their own travel costs, and use extra cash to print the learning materials. The introduction of LMSs has enabled them to reduce some of these unnecessary costs. Because they conduct most of their learning and examinations through online platforms, they are able to take exams wherever they are. Additionally, most of the learning materials are available online; thus, students do not have to spend money printing the hard copies of assignments or lecture notes. The students also discussed the reduced study time as an advantage of LMSs in Saudi Universities. A student who commutes to school on a daily basis wastes a great deal of time if he or she is expected to be physically present in class. A student may have three classes, one in the morning, one at midday, and one in the evening. Such a student must remain in school until these classes are over, thus making it relatively difficult to engage in other activities that can generate income. However, the interviewed students stated that, as a result of LMSs, they had reduced their learning and development time, as the duration of online training is short as compared to classwork. The content to be delivered is also well organized so that students can understand it more quickly. Moreover, once the session ends, the student has time to engage in other constructive activities, while waiting for the next session. LMSs save on time because the learners simply click on the modules and absorb the information therein.

The integration of the social learning experience is another impact identified by the students. Through LMSs, students are better placed to quickly access social media, as evidenced in the responses collected in this study. This corroborates the findings of many other relevant studies conducted worldwide, including Pappas' (2017) study on LMS use and effectiveness. This accords the individual an opportunity to access social media platforms, including Twitter, LinkedIn, and Facebook links as well as to interact with their friends through the online platforms (Limongelli, et al., 2016). The sample population that were interviewed said that they interact and socialize on different platforms. It must be noted, however, that students not only attend school to gain skills relevant to the job market; socializing is the primary reason

behind networking. Thus, because the students are not in classrooms, they may not have opportunities to get to know each other better.

Students in the classroom set-up also tend to lack self-responsibility, an issue that is not limited to Saudi Arabian universities. In this study, for instance, learners were often subject to peer influence. They only complete assignments in the company of their classmates and when those assignments are almost due. However, this was not the case for graduates studying through LMS programs. As they operate on their own, they learn to manage their time effectively and allocate sufficient time to their studies. Through LMSs, the lecturers noted that most students have managed to increase their self-confidence, particularly when pursuing studies virtually. In this aspect, students use the platforms to approach experiences with the desired creativity and attempt to solve various problems on their own, resulting in a substantive increase or boost in the self-confidence.

Most students stated that they benefit greatly from the online group talks. Despite the myriad of advantages cited by the students; however, the online system of learning also presented a fair share of challenges. One of the biggest problems cited by the lecturers was their managerial role in the system. Ideally, students are supposed to learn and not manage. The lecturers felt that they had to operate the system and the students. They stated that the system works best in the business sector, particularly when it comes to training employees in different tasks. Other departments like health sciences and education also embraced the system, although at lower percentages as stipulated in the findings of this study. As noted earlier in this paper, more business students embraced the technology compared to their counterparts in education and health sciences. The software has not been developed in such a way that the students can study to the expected level. Ideally, students should attain 20% of information from their teachers and the remaining 80% autonomously, in order to pass their examinations. However, the LMS is quite the opposite, with teachers expected to provide more than the student should research. Some of the teachers interviewed stated that the students expect them to provide all the modules in a particular course. There is limited effort by the students; hence, their level of academic performance was lower than when they were in the classrooms.

Another challenge cited by both students and teachers was the difficulty in changing from one LMS to another. New management systems are frequently introduced and institutions have to try out the latest system to help students pursue their studies more effectively. Most students and teachers have a problem with the shift from one LMS to another, although their reactions in this respect are mixed; some argue that the new system is more complicated than the previous one, thus meaning that the institution wastes more time shifting back to the previous system of study. Additionally, when such a change takes place, the teachers have to be trained to allow them to discharge their duties appropriately, and universities must therefore incur further training costs. Notably, in creating these learning systems, the developers often make mistakes of omission; thus, the difficulty in having a complete learning system.

Challenges in Adopting LMS Technology

There have been enormous challenges in adopting LMS or shifting from the traditional to LMS-based learning and teaching approaches. The old and new LMSs are overbuilt, and learning has been locked into what is termed a complex suite with distinct features. Operating such systems becomes quite hectic for both administrators and teachers (Kats, 2013). Even if they figure out how to operate the system, adapting to them takes a great deal of time. The developers have not simplified these systems to allow teachers to operate them with great ease. Some students also mentioned that a day of learning could be lost when technical errors prevent them from accessing their online portals.

Another challenge cited by the students was the difficulty of handling just some of their courses through the online platforms (Limongelli, et al., 2016). Certain courses demand a practical presence in the classroom. Some such courses mentioned by students included those that require a practical approach, such as science-related courses. Students taking healthcare courses are expected to learn the theoretical concepts and combine them with practical aspects. These practical aspects can only be learned in the classroom with a teacher (Limongelli, et al., 2016). Additionally, traditional courses, especially hands-on courses, are difficult to simulate in online classes. Students stated that they cannot take courses away from the classroom entirely; at some point, they must be present for practical lectures.

Unlike the traditional learning system, the use of LMS may pose challenges to the students. A sizable number of students complained about unclear instructions and that they cannot promptly access the teachers to make clarifications. In the classroom set-up, the teacher is present to answer questions when a student does not understand a concept. However, this provision is not available to students who take their courses through LMSs (Kats, 2013). These findings concur with the findings of Kats (2013), who placed much emphasis on the need to follow instructions as an important aspect of the learning process. According to the students, the process of overcoming challenges depends on improvements in the LMS, which will enable the learning process to be run more effectively. Moreover, lecturers should stop performing managerial tasks and instead engage in teaching. The students stated that there is a need to train some of the lecturers in using the LMS. Most lecturers cannot teach them because they are not conversant with how to offer online courses. Additionally, the students had a general feeling that the number of lecturers teaching them through online learning should be increased to increase accessibility.

CONCLUSION

Studying has been made possible at any time and any place, because the Internet has facilitated the connection between teacher and student. According to this study in Saudi Arabian universities, a large number of students join online learning programs due to their implicit advantages. The research indicates that most postgraduate students conduct their studies online, as they need to balance their education with their professional life; this depicts the effectiveness with which the Saudi Universities have embraced LMS. However, there are challenges involved in the integration of LMS in the Saudi Universities. For instance, more undergraduate students come to the classroom to study, partly due to their desire to socialize. Young individuals, particularly in their late teens and early twenties, feel that they have to be physically present in class to mingle and associate with their peers. Nevertheless, the advantages of LMSs identified by the sample population carry more weight. Although the system is not fully developed to support training, especially in the academic sector, benefits have been observed, and there is hope that improvements will be made to reduce the few remaining hitches for students and administrators. The study was limited to only three universities in Saudi Arabia, which may not be representative enough to reflect the true picture in all the universities in the country. Therefore, there is a need to pursue further research to ascertain the effectiveness of the systems as well as the challenges existing in other universities within the country. It is also imperative that other nations in the world consider incorporating LMSs into their learning institutions.

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