

Implementation of Learning Management System: A Way Ahead on the Digital Journey in Distance Learning

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Abstract

Over a number of years, the Allama Iqbal Open University (AIU) has encouraged and supported moves to Learning Management System (LMS) replacing aspects of paper-based and face-to-face teaching and learning including, assignments, workshops and examination. The views of learners and academics were explored to consider the advantages of the system as well as potential challenges. Twenty-two participants were involved in qualitative data gathering by means of focus group discussion and semi-structured interviews, which were comprised of 12 M.Phil students and 10 academics from the Faculty of Education. Thematic analysis was carried out by applying themes and codes. Numerous advantages were identified with the use of Learning Management System. However, it was found that the approach did face some challenges. Learners often lacked easy Internet access and the necessary skills to use new technologies efficiently. Academic staff required considerable time for the development of online materials. Major training needs arising from the findings and it was recommended that the university must consider setting up small campuses in rural areas as well as provided mandatory training and support for learners, especially those from rural areas. There is also a need for formal training for academic staff and the sharing of ways by which the new technologies can be used effectively and efficiently in enhancing all aspects of distance learning.

Keywords: Learning Management System, distance learning, rationale, challenges

Introduction

Milestone of digital journey is a significant movement towards digital learning to promote an environment where every distance learner can learn and share learning material without physically attending face-to-face traditional classroom lectures. Learning management system (LMS) is software that is widely used to present electronic presentation of content that supports online learning (Bach, Domingues & Walter, 2013; Kis, 2007). It is one of the examples of using digital technologies that support distance learning. Moyle and Wijngards (2012) defined digital journey as an effective and efficient use of technology to increase the learning experiences of learners. It is to make available such kind of learning environment that can facilitate every learner to get timely learning material and instructions without having regular face-to-face interaction with his or her instructors.

Implementation of LMS has made easy for distance universities to provide a proper digital learning environment to a large number of distance learners (Cigdem & Tirkes, 2019; Jankowski & Marshall, 2015). LMS has extensively facilitated the virtual delivery of educational programs of distance universities. Barriers of physical distance in distance learning are now ending with the implementation of LMS as information sources are shifting from teacher and printed textbooks to digital tools. Kirkwood and Price (2016) pointed out that with the progress in technology has shifted the whole distance learning into new forms. As the notion of distance learning is to provide a distance mode of instruction to learners without attending regular classes in study campuses.

The rationale behind the use of LMS is to provide increased accessibility and affordability in learning to distance learners, as they are now part of the global learning environment. According to

Levy and Roberts (2005) most of the distance universities around the world are trying to incorporate LMS as a basic and mandatory tool for transformed teaching and learning system. Allama Iqbal Open University (AIOU) is also offering an open and distance mode of learning in Pakistan with large scale enrolment of 1.3 million learners. Such increasing enrolment demands from the university to digitally support its learners in three basic components of distance learning. As the findings of (Silva, 2013; Martyn, 2005) studies pointed out that many online learning resources through LMS have made easier for learners to learn in a better way without attending or participating in conventional face-to-face classroom discussion. So the evolution in ICT has demand from AIOU to change its way of instruction for effective teaching and learning process. However, in its digital journey, AIOU is now trying to digitally support the learning of distance learners to ensure easy accessibility to the information through LMS, but this service is less supportive and insufficient to fulfill learning needs of learners at all levels. The study of Radwan, Senousy and Riad (2014) highlighted that there is a need to measure efficiency and challenges of LMS to successfully implement in distance learning. The findings of Wajid, Hayat and Naseer (2011) study also pointed out that there is a need to have more initiatives to strengthen and to ensure a successful journey of the university towards digital learning.

Components of Distance Learning

In distance learning system assignment is an essential component along with other academic work. The main purpose of assignment in distance learning is to motivate learners to overview or easily understand basic concepts by searching content related learning material from different resources available online (Trivedi, 2010). With the help of shared learning material on LMS, learners can efficiently add the most relevant material into their assignments. Workshops are a second essential component of distance learning and for this purpose LMS gives distance learners opportunities to discuss in groups, explain and incorporate those materials and resources that are most relevant, up-to-date and informative. According to Jones and Tanner (2006) evaluation is an essential component of an educational process. With the help of LMS, learners can incorporate more relevant and unique ideas and points during their exams. Distance learners can collaborate with their study peers during their preparation. Along with this online learning resources enable learners for self-assessment; they can assess their learning through online quizzes uploaded on LMS by their instructors (Hanna, 2016; Serim, 2012; Wider, 2011)

Although, AIOU is facilitating its learners through a Learning Management System, this service is mostly available for postgraduate learners. However, the university still needs to have a full-fledged digital learning environment for all levels of learners to support them within and outside of the university campus. There is a need to have a well-established learning environment for learners to digitally support their learning. Therefore, it is very important to explore the rationale of using new technologies in distance learning as well as those challenges that hindered in the successful incorporation of such technologies in distance teaching and learning.

Theoretical Framework

Theoretical approach of the study pointed out the efforts grouped under social constructivism that encourage active participation of learners in learning. Theory of online collaborative learning (OCL) given by Harasim (2012) considers Internet as the best source of providing opportunities to the learners for collaboration and to create their own knowledge. The theory emphasized on learners'

need of understanding and experiences during their learning. Now much emphasis is given upon interaction during online learning, and LMS is considered as one of the best practices that increase online interaction between learners and teachers. Teaching and learning is an interactive social activity in which importance is given to shared objectives, developing and creating knowledge by both teachers and learners instead of just distribution to the learners. However, there must be collaboration and sharing of knowledge among learners in distance learning to encourage them to solve their learning problems. Distance learners cannot learn efficiently until they actively participated in learning.

Purpose of the Study

Implementation of LMS at AIOU has great significance as the university has a plan to provide distance learning for an increased number of learners that demands from university to provide all those facilities that can best support its distance learners. However, considering the LMS as a sign of digital transformation of the university, the main questions of the study were:

1. What are the perceptions of distance learners about the use of LMS for their assignments, workshops and examination?
2. Why do academics of AIOU prefer to use LMS during their instructions to distance learners?
3. What types of instructional and technical challenges academics are facing during the use of LMS for instructions?

Literature Background

Provision of flexibility is a critical element of Learning Management System (LMS) and, for this reason, distance universities around the globe are incorporating LMS as a basic tool in their teaching and learning system to facilitate their learners and academics. Earlier studies (Chetwynd & Dobbyn, 2011; Bartolome & Steffens, 2015) pointed out that with the help of digital technologies distance universities develop their e-content with all necessary learning materials and upload these to be widely accessed by the distance learners around the globe. Now distance learners are not only bound to one single source of learning, but they also need multiple sources of information and knowledge to improve their learning. Implementation of LMS has become of great magnetism to distance universities as they solve chief barriers in the conventional distance educational system e.g. decreases the isolation of students by increasing collaboration with their teachers, as well as with other students, gives effortless contact to online resources and additional learning sites which were almost not possible in the earlier period. Learners now can easily discuss their classroom learning topics online with the sharing of learning material that is to provide them a more productive learning environment.

The findings of Peters' (2000) study pointed out that with the existence of a technology-enriched situation, learners are more able to learn in a conformable learning environment. LMS enables faster communication between teachers and students. Submission of assignments is now reduced from weeks to days. It provides learners the flexible learning opportunity regardless of time and place. The study of Harasim (2000) found that the utilization of LMS has increase interactivity and flexibility in distance education. Earlier studies (Salmon, 2000; Surry, Ensminger & Haab, 2005; Hague & Williamson, 2009) indicated that digital technologies are required for fast communication and self-assessment of distance learners to facilitate them in components of their distance learning.

Moreover, the findings of Ku and Chang (2011) and Kennedy (2014) indicated that the use of LMS also raised many challenges for the administration as well as academics of distance universities. Likewise, the study of Wajid et al. (2011) indicated that every year the number of enrolled learners of AIOU is increasing majority of them come from rural and far-flung areas without sufficient knowledge about digital devices or computer skills.

The findings of Al-Suqri and Afzal (2007), Luboobi (2007) and Buchan (2011) indicated that there is a lack of a regulatory framework to check and maintain the quality of online learning through LMS which is a great challenge especially for those distance universities who have newly started their journey towards online learning system. The findings of Surry et al. (2005) study also indicated that incorporation of LMS in instruction can have many obstacles e.g. capability of learners, technology approval and enthusiasm of teachers for its efficient use. According to Bates (2005), many distance universities are still using print as the medium of instruction because most of their learners do not have proper access to technology and academics find it difficult to provide digital content to rural and urban areas learners equally. Moreover, most of the teaching faculty remains busy in their work schedule and they find no extra time to give online instruction to the learners in place of teaching from printed learning material. The study of Tarus (2011) highlighted that converting or development of e-content needs more time and sources for its distribution to the increasing number of learners on all levels.

Research Methodology

The present study was qualitative based on phenomenological design to explore the rationale and challenges of implementing LMS in teaching and learning at AIOU. The main reason behind the use of phenomenological design was to get an in-depth understanding of the phenomena from the perspective of learners and academics as they are of main concern in use of LMS in distance mode of learning at AIOU. Data was collected through focus group discussion and face-to-face semi-structured interviews. Participants were selected through purposive sampling technique. Focus group discussion was arranged with 12 M.Phil learners during their course workshop (spring, 2019) to identify those reasons for which distance learners prefer to use LMS for their assignment, workshops and examination. Face-to-face interviews were conducted with 10 academics from the Faculty of Education to explore instructional and technical challenges they are facing in using LMS for their learners. Focus group discussion guide was built around a set of 10 questions, while the interviews involved 11 questions. Probing questions were asked to allow responses to be expanded.

Codes (numbers) were allocated to participants (distance learners) during focus group discussion, so that data could be recorded and interpreted anonymously. Participants were informed through emails and telephone calls before the conduct of focus group discussion and interviews. Views of participants were recorded and important points were also noted. A Content Validity Index (CVI) was calculated for the validation of the instruments. For this purpose, five experts in educational technology were invited to categorize each question from 1-not relevant to 4-highly relevant. This gave consistency rated at 0.87 and 0.85 respectively. Thematic analysis was used to draw themes and codes from the data. The Meta themes emerged in this way. Finally, the names of the participants were replaced by codes like R2, meaning respondent 2. The responses of respondents were presented in tables separately by making Meta themes, themes and codes while representing the relevant respondents' numbers "R" and frequency "f" of their responses (tables 1, 2 and 3).

Findings: Distance Learners' Views

Table 1: Rationale of preferring LMS for Assignments, Workshops and Examination (Distance Learners)

Meta Themes	Themes	Codes	R	f
Flexibility	<ul style="list-style-type: none"> • Mobility in learning • Alternative way of learning 	• Study during job hours	R5, R6, R1, R7, R3, R4	6
		• Availability of online lectures	R3, R4, R5, R1, R4	5
		• Self-learning	R9, R4, R5, R7, R2	5
Enriched learning	<ul style="list-style-type: none"> • Increased collaboration • Decrease rote learning 	• Peer learning	R1, R6, R7, R3, R11, R9	6
		• Discussion with tutor	R9, R8, R9, R12, R11	5
		• Conceptual understanding	R9, R5, R1, R4, R3, R9	6
		• Critical thinking	R10, R8, R7, R5, R4	5
Skill development	<ul style="list-style-type: none"> • Job skills • Academic skills 	• Efficient future teacher	R8, R6, R9, R10	4
		• Presentation skill	R7, R9, R6, R5, R3	5
		• Confidence development	R1, R8, R7, R10, R12	5

Flexibility

The review of themes and codes collected under this Meta theme showed that the main reason why distance learners prefer to use LMS for their assignments, workshops and examination related to the way this allowed learning anywhere.

Mobility in learning

Most of the learners are of the view that the use of LMS would provide them increased mobility in learning. For example, R6 explained that,

'... For me it is mostly impossible to study during my job hours, and I cannot attend face-to-face classroom lectures. I think attending lectures and submission of assignments through LMS would be easier for me to study anywhere and whenever I want to learn even during my job hours'.

The findings of Duncan and Ekmekcioglu (2003) study also highlighted that the online learning environment gives learners opportunities to organize their learning in their own way at whatever location suits them. Along with this, distance learners can get a substitute for learning if they do not receive their instructional material from their instructors.

Alternative way of learning

Distance learners gave their arguments that LMS would provide them an alternative way of learning in case of not receiving learning material from the university. In this regard R5, observed that:

'Sometimes I do not get books timely and I feel frustrated. Last time I received my course books after my exams that was quite irritating for me, so if university sends me an online list of topics and lectures on LMS that would be easier for me to complete my work and especially during exam preparation instead of waiting for delivery of my books and buying them from somewhere'.

R8 further added that:

‘With the use of LMS would give me a sense of self-learning or responsibility of my own learning to complete my tasks in time instead of waiting for pre-planned or printed outdated textbook or learning material from my department’.

Enriched Learning

LMS is a unique way of learning that enriches learning for distance learners. They can learn more interestingly with increased collaboration among peers as well as sharing of the latest online learning material.

Increased collaboration

R9 explained that *‘with the use of LMS I would be able to have an online connection with my class fellows and this connectivity would decrease my isolation during study’*. Further R12 added that: *‘I would be able to discuss any study related topic with my tutor at anytime and anywhere’*.

Hanna (2016) noted that digital learning is growing and it allows learners to develop their ways to locate information and take ownership of how and what to learn. R3 stated that:

‘Getting instruction from my instructors through LMS would increase collaboration by reading, discussing and sharing learning material with my peers as well. As I feel comfortable to share learning material by just clicking on a specific learning site instead of searching from huge textbooks and printed manuals’.

Decrease rote learning

The majority of distance learners are of the view that the use of LMS in learning would decrease rote learning among them. As R9 explained that:

‘It is very difficult for me to study heavy textbooks provided by the university as I used to study important topics and to get a conceptual understanding instead of reading a bundle of textbooks, so I think learning material in an electronic form would be easy for me to study in a short time’.

R8 further explained that: *‘I think sharing of key points, relevant up-to-date learning material and completion of quizzes through LMS would increase critical thinking in me’*.

Skill Development

The review of themes and subthemes collected under this Meta theme indicated that with the use of LMS learners can develop and improve their job and academic skills.

Job skills

Distance learners explained that, with the use of LMS, they can enhance their job skills. R8 explained that: *‘I think implementation of LMS in learning would enable me to become an efficient future teacher’*.

R6 further added that: *‘in future if I have a plan to join the teaching as a profession and with the use of LMS during my learning would help me to prove myself as an efficient teacher’*.

Academic skills

Respondents explained that audio-video lectures through LMS would increase their presentation skills, R5 observing that: *'I think the use of LMS would give me an opportunity to actively participate in classroom learning and share my knowledge with class fellows effectively which would also increase my presentation skills'*.

Serim (2012) states that learning through LMS can work well for every age of students, noting that the use of graphical presentation can enrich learning. Confidence can develop, R7 explaining that: *'I feel confident when I use the Internet for clarifying my concepts'*.

R1 went further in indicating that: *'I can confidently write the points during exams which I have learned from my instructors and peers instead of browsing these points personally'*.

Findings: Faculty Staff Views

Table 2: Rationale of Using LMS during instruction (Academics)

Meta themes	Themes	Codes	R	f
Wider sharing and teaching efficiency	• Learning community	• Sharing of audios/videos	R3, R4, R1, R9	4
		• Quick respond to queries	R4, R2, R3, R8, R10	5
		• Healthy online discussion	R5, R6, R2, R1, R8, R7	6
Quality services	• Quick updating	• Latest content information to learners	R1, R4, R2, R5	4
		• Uploading and downloading	R3, R2, R9, R10	5
	• Equal chance of learning	• Sharing of learning websites for any topic • Lectures from experts	R3, R4, R5, R6, R7, R9 R4, R3, R9, R8, R10, R10	6 7

Wider Sharing and Teaching Efficiency

The review of themes and codes collected under this Meta theme indicated that academics are of the view that with the use of LMS they can have an efficient learning community and can provide quality services to their learners.

Learning community

The review of codes collected under the theme indicated that LMS can be very effective for instructing to a large number of learners. In this regard R3 noted that: *'I think if I share lectures, videos and soft copies of learning material to learners that would establish a kind of learning community among a large number of learners at one time'*.

R4 further added that: *'Learners can post their queries and questions related to assigned class work. These queries and questions can be answered by me as well as all learners'*. In this regard, R5 explained that: *'there can be healthy discussion on different study related topics that would increase collaboration among peers'*.

Quality Service

Academics can update their learners in time without wasting time in postal services and this will provide an equal chance of learning for all learners.

Quick updating

Respondents laid stress that, through LMS, they would be able to provide distance learners with quick and latest information by uploading online learning material resources. R1 explained that:

‘Mostly I receive many calls and emails from learners regarding late delivery of letters about their workshop schedules and I find it hard to overcome this problem. If the university has a proper way of delivering e-content and all announcements to the learners through LMS, this would help me to provide learners with technology-enriched services and material at their homes without their travel to the university campuses’.

R3 further explained that: *‘It would be easier for me to deliver content related information to all learners equally at the same time without any delay in delivery of learning material’*. R2 went on to note that: *‘I think a large number of learners can have access to online learning material at the same time without any complaint about late delivery of their study material’*.

Another participant (R4) added that:

‘Sometimes it is very hard for me to send a huge amount of letters as a reminder to learners for submission of their assignments and then collect assignments on daily basis, if these questions booklets and all learning material are provided to learners through LMS that would provide me and learners an easy platform for uploading, sharing and downloading all teaching and learning material’.

Equal chance of learning

Furthermore, online available learning materials can give learners and equal chance of learning as R2 stated that:

‘Most of the printed textbooks of the university are outdated and university kept on reprinting these textbooks for many years without any revision, but now there is a need to provide learners with online learning resources and websites on any topic so that learners can cope up with their practical life problems and there is only one way to provide such kind of service if university start to provide online learning resources to its learners and LMS would be more reliable and authentic way of providing online learning to learners’.

Respondents also explained that, with the use of LMS, academics can have a larger horizon of information and knowledge related to their subject area. According to R3: *‘Implementation of LMS would enable me to get information from other experts teaching anywhere around the world and can get most modern and authentic information for learners as well’*.

James and Allan (2004) suggested out in their study findings that the Internet is less expensive which also allows students to have fast interaction with instructors than the traditional way of posting textbooks to students. However, there are costs in setting up and equipment to access the Web.

Challenges in Implementation of LMS

The responses from interviews were merged into two Meta themes including, technical and instructional challenges for the academics in instructing learners through LMS.

Table 3: Challenges for Academic Staff

Meta Themes	Themes	codes	R	f
Technical challenges	• Access to Technology	• Lack of internet connectivity • Less access to electronic devices	R1, R3, R4, R5 R4, R2, R3, R1, R10	4 5
	• Lack of training on ICT use	• Less knowledge on ICT use • Lack of awareness among staff and learners	R3, R5, R8, R6, R9, R10, R2 R9, R10, R8, R7, R2	7 5
Instructional challenges	• E-content development	• Required extra time • Prefer to learn through printed textbooks	R2, R4, R1, R9, R8 R2, R3, R4, R6, R7, R8	5 6
	• Geographical distribution	• Rural, urban digital divide • Less use of technology among female learners	R3, R2, R4, R1, R7 R4, R7, R8, R9, R10, R5, R3, R1	5 8

Technical Challenges

The Allama Iqbal Open University recently started its journey towards the provision of technology-enriched learning to its learners and, for this purpose, the university started LMS as a tool for online learning. However, academics do face diverse challenges for its efficient implementation.

Access to technology

It was indicated that academics have many technical challenges in giving online instructions to their learners by using LMS. R3 explained that: *'Increasing number of learners is a big challenge for academics to instruct all learners through LMS as the majority of the learners do not have Internet connectivity'*.

R4 further added: *'although most of distance learners are employed but it is very hard for those learners to learn online who have poor family background and they do not have access to the latest electronic devices. I think poverty is also a reason for not having Internet connectivity for online learning'*.

Earlier studies (Rumble, 2001; Bates, 2005) also observed that lack of sufficient Internet connectivity is another challenge that is a hindrance in any implementation of LMS. Many of the learners in Pakistan belong to low-income families and most of them come from far-flung or remote areas where they do not have an Internet connection to continue their studies.

Lack of training on ICT use

Academics and learners require essential expertise in the use of up-to-date digital tools. Most of the students have android Smartphones and notebooks and some have laptops; however, learners have a lack of competency to successfully utilize these as digital learning tools. R2 added that: *'Online tutoring system through LMS required that learners must have basic skills to operate or use it so that they can easily upload their assignment of it and download all instructional material'*.

R2 expanded further, adding that: *'Most learners even do not know how to operate a computer system so they need basic ICT skills before using LMS'*.

The study of Khan, Hasan, & Clement (2012) also indicated that if learners desire to learn through technology, then they must have basic knowledge on how to operate and use it.

Instructional Challenges

The review of themes and subthemes collected under this Meta theme indicated that academics have diverse instructional challenges related to e-content development and geographical distribution that are hindrances in the successful use of LMS in instructing the learners.

E-content development

Additionally, creating e-content takes a long time and most of the teaching faculties remain busy in their work schedule and they find no extra time to develop electronic content. For this reason, academics mostly prefer to teach from printed material during their face-to-face workshops and lectures (Bates, 2005; Tarus, 2011; Tarus, Gichoya, & Muumbo, 2015).

Thus, R4 observed that: *'Creating, arranging and uploading of e-content for LMS sometimes need additional time. For the same reason, I mostly prefer to give face-to-face instruction to the learners during my workshop lectures'*.

R 3 further explained that:

'it is hard for me to give online instructions or to include online learning resources for learners, where most of the learners are preferring to learn from printed textbooks and I think behind this preference, there are many reasons such as lack of internet connectivity and less training on use of ICT resources among these learners'.

Geographical distribution

Respondents are of the view that geographical distribution is one of the big challenges for the academics to give instructions to the learners. R2 observed that:

'Geographical division in Pakistan also required fast connectivity of the Internet to help distance learners in their studies. It is a quite big challenge for me as well to provide electronic content to all learners irrespective of geographical distribution, especially for those learners who are living in rural and far-flung areas. These learners do not have an Internet connection and most of them do not know how to use technology for their learning'.

As R4 explained:

'majority of learners of the university come from rural and far-flung areas where it is impossible for me to give them online instructions along with those learners who live in urban areas and have better ICT facilities as compared to rural areas learners'.

R2 further explained that: *'females learners use fewer technologies as compared to male learners and I find it hard to give them online instructions along with male learners'*.

The findings of the study are consistent with the earlier studies (Noreen & Hafeez, 2016; Chapman, Garrett & Mahlck, 2004), which found that the most of challenges of technology use are related to digital divide, lack of training and awareness among learners. However, the present study also found that majority of distance learners in Pakistan belonged to those areas they have no Internet facility, for this major reason, the Allama Iqbal Open University still maintains a corresponding way of instruction as the majority of students do not have efficient internet connectivity (Bates, 2005).

Discussion and Conclusion

Firstly, based on the views of the students and teachers, the potential for the use of a Learning Management System in an Open University setting is very considerable. Advantages include increased flexibility of learning both in terms of location and availability of latest online learning material. Learners pointed out that there are advantages in the technologies enriching learning and developing skills useful in employment. There are perceived advantages in the speed of feedback for learners along with increased opportunities to discuss, elaborate and share learning material with their peers without attending conventional face-to-face classroom lectures. At the moment, most of the Allama Iqbal Open University instructional method is based on face-to-face classroom lectures which learners have to attend in workshop centers and it is very difficult for these learners to manage their learning along with their jobs.

The teachers are also enthusiastic. They think Learning Management System is offering a quick and reliable connection between academics and learners. It can improve the services of the university through a wide coverage of an efficient delivery system which would be time saving and effective. The study of Littlejohn (2005) also highlighted the potential advantages of LMS in terms of collaboration and sharing learning resources as well as providing rapid feedback to all learners at the same time. Similarly, Olson et al. (2011) expressed the opinion that Learning Management System could enhance the quality of instruction and speed of feedback.

As most of the learners of the Allama Iqbal Open University come from rural and far-flung areas where the postal service is often delayed and learners do not get their learning material and information from their teachers in time, so the academic life is hindered. Many distance learners missed submission of their assignments, as they sometimes do not get updates from the university regarding assignments submission deadlines. Learners considered Learning Management System a better way to reduce these problems considerably.

However, academics at the Allama Iqbal Open University also highlighted many challenges in the use of Learning Management System. These challenges are mainly related to learners who cannot access the Internet easily or reliably. In addition, many of the learners lack basic Internet skills. Moreover, they appreciate that the development and updating of the online material is time taking and also require a high skill level.

All this is in line with the earlier studies findings (Anbu & Chibambo, 2009; Deng, 2009; Sife, Lwoga & Sanga, 2007) that the biggest challenges for academics in use of LMS during instruction are related to the development of electronic content, inadequate access of learners to technology especially female learners, lack of ICT skills along with the provision and maintenance of technical equipment. Hence, in this situation, academics find it difficult to share and upload learning material for all learners equally and find it hard to unlock their potential to efficiently give instructions to learners.

Moreover, learners at the Allama Iqbal Open University often do not have proper training on the use of ICT resources. Most distance learners have the latest gadgets in their hands, but they do not know how to effectively use these gadgets for learning efficiently. Earlier studies (Noreen & Malik, 2020; Tarus, 2011; Bates, 2005) also point out that most of the distance universities are using conventional system of instructions for their learners as they find it difficult in developing educational technology plans for a large number of learners where most of them do not have access and lacked skills to use the technology. The findings of the present study revealed that learning with a Learning Management System can be helpful for distance learners to learn in a short time and would provide them easy access to their learning content and they can learn anytime and anywhere without moving or physically attending face-to-face conventional classroom lectures. Moreover, the academics can provide more reliable and quick instructions and feedback to the learners, but there is a need to have

a proper planning that can help academics to use LMS to digitally support learning of a large number of geographically distributed distance learners.

Recommendations

In the light of the findings, the following recommendations are made:

- (a) Given difficulties in Internet access, the Allama Iqbal Open University might consider setting up small campuses in remote areas. These might involve support from IT companies or the university IT provision.
- (b) All intending students at the Allama Iqbal Open University should be required to undertake some suitable training in the use of the new technologies in the context of learning. This might be offered by the university or by others with appropriate experience; alumni can be one example of it.
- (c) Support and training need to be made available to teaching staff before the start of each semester to equip them to develop and use quality online materials.
- (d) Teaching staff need strong encouragement to move from a dependence on face-to-face and written materials and to move their teaching to an electronic format.
- (e) Teaching staff also need support and encouragement to develop skill in developing feedback mechanisms which are reliable, speedy and affirmative as well as how to develop quality assessment approaches using online resources.

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