

Mitigating the Challenges of Open and Distance Learning Education System through Use of Information Technology: A Case Study of Allama Iqbal Open University Islamabad, Pakistan

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Abstract

The usage of various media methods in distance education shows its historical development path. It is said that AIOU has been using radio and television broadcasts, special textbooks and reading materials for distance education. To assess the level of technology usage and its role in AIOU model, Non-Random, Purposive Sampling, technique was used to choose the sample of 54 respondents. The data was collected on a semi-structured interview schedule. It was found that AIOU tries to align its pace with the emerging challenges through utilization of the technologies in the distance education. However, same time, they do not have desired capacity and ultimately the role of university administration to develop desired and due capacity is not up to the mark. Resultant, teaching staff is not effective and facing issue to contribute efficiently and effectively in the use of technology for distance education at AIOU. Similarly, this research also determined the future perspective of the administrative and teaching staff. So, there is provision and willingness from the concerned staff to bring use of mobile app, video games and virtual class rooms to enhance the scope of distance education and improve the role of AIOU in wider coverage.

Keywords:

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Introduction

Education is a methodological process of nurturing in which systematic instructions are given and received. As to enhance intellectual growth, personal development and determine future position and living (Perrin 2017). When it comes to *distance education*, it is a result of pedagogical technological development in the field of education (Asdaque, et al. 2018). The features of distance education shows us that this is an effective system to educate the people from various segments of the society and it is reflected as a close ancillary of conventional on-campus education (Sultana and Kamal 2002) particularly in hard to reach areas (Bughio and Abro 2014). Because, this type of education system gives an opportunity to the students of diverse socio-economic and geographical settings (Sultana and Kamal 2002).

There is a strong co-relation between history of distance education and technological development. This relationship has been shown by the various terms referred for distance education like open learning, flexible learning, individualized learning, blended learning, network learning, web based learning, off-campus learning, online- learning, and distributed learning (Bughio and Abro 2014, 276; Holmberg 2008). These types of distance learning has been aligned with print, audio, video, telephone, computer based communication systems and media methods (Sultana and Kamal 2002). It is evident from literature that technology was not developed to enhance education system. Nevertheless, it was emerging 'needs' to enhance education by incorporating available technologies. In other words effectiveness of the distance education was enhanced with the adoption of technology (Panagiotakopoulos, Lionarakis and Xenos 2003).

The distance learning education programs in Pakistan started with the emergence of AIOU as a national university. At the time it was solely relying on the conventional means where from writing to printing, dissemination of books and the announcements were done through the conventional methods. However, the use of media was considered very important since start and Television as well as Radio was used for educational information sharing. During the past two decades the technology has been changed/ developed a lot. With the entry of mobile phone technology, its wide spread, increased use of internet and the social media the whole scenario is changed. There is dire need for all the systems including educational institutions to adopt the new technologies and use social media and internet for education and dissemination of information. Allama Iqbal open university being the mega university

with over a million enrolment and the pioneer of distance education in Pakistan is an obvious option to be focused if we want to assess the use of technology in distance education in Pakistan.

Literature Review

The use of information and communication technology has been increasing and shaping new era of web based and virtual learning. The ultimate purpose of these interventions are to achieve better outcome in the field of distance education (Bughio and Abro 2014, 276; Bukhsh 2015, 90). Hence, the concept of virtual class room has been replacing traditional pattern of teaching and it is enhancing scope of the virtual class room due to availability of social media and other virtual spaces.

Allama Iqbal Open University (AIOU) is Pakistan's leading distance education university. This university was established in May 1974 with the objectives to expand education network to the people who cannot leave their homes and jobs to attain on-campus education. Since its inception, AIOU significantly achieved its objectives through offering undergraduate, graduate and post graduate's programs in shape of degree and courses in various fields. The AIOU has tried to align its space of expansion and to meet the needs of students through adoption of modern technologies, which are being used in distance education globally. Therefore, the university has 1.3 million students. The website of the university indicates the availability state of the art facilities including main buildings, specified departments, labs, experimental equipment's, library, access to digital library and its own journals as well. Along with it, the university has regional offices (9), regional centers (33), approved study centers (41) and part time regional coordinating offices (138) (Shahzad 2017; Bughio and Abro 2014, 275; www.aiou.edu.pk).

It is said that AIOU has been using radio and television broadcasts, special textbooks and reading materials for distance education. Same time AIOU also "attempting to harness modern information technology for spreading education in Pakistan" (Bughio and Abro 2014, 275). The global trends of distance education have been replicated in AIOU by the establishment of e-learning platforms, using of mobile technology and app (). (Rosenblatt, Balderaz and Zeglin 2017, 59; Singh, Naz and Narayan 2017, 41). However, one of the study conducted in Pakistan suggested that use of skype, sending SMS alert, LMS system and social media platforms like linkdln and Facebook can contribute effectively and efficiently among the tutor and peer students of AIOU to increase outcome of distance education (Noreen, Z. 2013). Hence, we are aware

at some extent that AIOU has been using modern technology in the distance education. However, the magnitude and nature of relationship between technology and distance education yet need to be explored. Therefore, this research study was designed to understand the usage of modern technology in distance education and its current functionality among the teachers and students of AIOU.

Research Question

Use of modern technology in dispensing distance education at Allama Iqbal Open University and perspective of teachers and students about it?

Methodology

This research is descriptive in its nature and used quantitative research tool i.e. semi-structured interview schedule to gather the desired data. All the gathered data was analyzed by using descriptive statistics. The purpose of using this type of methodology was to provide simple summaries of the responses given by the respondents. As to treat data more for formative research and derive future directions to design a comprehensive exploratory research study.

Population and Sample

The researchers chosen Allama Iqbal Open University for this study which is one of the Mega University in Pakistan disseminating distance education using ODL systems since its inception. Specific employees of Allama Iqbal Open University, including, Deans of Faculty, Chairman and Head of academic and servicing departments and other allied departments including library, I.E.T and ICT were considered the population.

For the present paper, it was crucial to select the most appropriate sampling technique. Therefore, to reach out the experienced members of AIOU with some highly responsible position, non-Random, Purposive Sampling, technique was used to choose the sample of 54 respondents. The data was collected on a semi-structured interview schedule with different questions about the position, experience and academic background of the respondents. In addition, the questions related to use

of different machines and technology including internet, social media were included.

Results and Discussion

This research illustrates (See table 1) that all of the respondents (54) were using internet and consulting website of the university as to acquire desired information from university and communicate with students. However, when we compare use of modern technology with traditional method of education specifically refereeing television and then we came across that the trends reduced till 53%. It means a significant shift has had occurred in term of using modern technology for distance education. Interestingly, the use of modern technology is not only restricted to educate the students but it was also used for evaluation of candidature of the applicant for the enrollment in degree program at AIOU. In this regard 44.4% of the respondents said that they used skype for pre-admission interviews and meetings with applicant and students.

Table 1

S.No	Technologies	No. of Employees		% of Employees
		No	Percent	
1.	Internet	54	28.4%	100.0%
2.	Skype	24	12.6%	44.4%
3.	Website	54	28.4%	100.0%
4.	Radio	29	15.3%	53.7%
5.	Television	29	15.3%	53.7%

This research explored the usage of social media in the communication, coordination and sharing of information in the domain of distance education and routine announcements. Interestingly the findings show that all the respondents were using one of other means of social media to remain connected with the students. All of the respondents were part of the different Facebook pages and keep updating information about the assignment, technical guidance and supervision of the students who approach them and part of those Facebook pages. Similarly, 53.5% of the respondents were using WhatsApp and YouTube to remain connected with the students The least preferred social media tools were Instagram and LinkedIn with 4.7% and 18.6% respectively.

Table 2

S.No	List of Social Media	No. Employee Using		% of Employees
		No	Percent	
1.	Facebook	43	39.1%	100.0%
2.	Twitter	11	10.0%	25.6%
3.	Instagram	2	1.8%	4.7%
4.	LinkedIn	8	7.3%	18.6%
5.	YouTube	23	20.9%	53.5%
6.	WhatsApp	23	20.9%	53.5%

However, when it comes to know the opinion of the respondents about the contribution of technologies in distance education then the results show that 11.1% said, technology has very minimal contribution in the distance education and a significant number of the respondents i.e. 33.3% said the contribution of the technology in the distance education is up-to some extent. The respondents' opinion about the contribution of technology in the distance education is also contextualize with reference to its use by the respondents. So, those who said they have minimal usage can be subject to their capabilities and capacity about the usage of technologies. However, majority of the respondents (55.6%) were with the view that usage of technology contributes very extensive in distance education.

Table 3

S.No.	Contribution of Technologies	No. of Employees	% of Employees
1.	Very Minimal	6	11.1
2.	Up-to some extent	18	33.3
3.	Very Extensive	30	55.6
	Total	54	100.0

In the same lines, a significant number of the respondents (94.4%) admitted that role of technology in the distance education is very important. However, around 6% of the respondents were with the view that either role of technology is little important or not important at all. So, the data presented in the previous table "contribution of technology" and in the table "Role of technology" indicates some discrepancies which may leads towards the idea that majority of the respondents believe that technologies can play an important role in the distance education.

Table 4

S.No	Role of Technology in work	No. of Respondents	Percentage
1.	very Important	51	94.4
2.	Little Important	2	3.7
3.	Not Important	1	1.9
	Total	54	100.0

However, when it comes to the usage and contribution then a significant number of respondents not as efficient to take benefits of technology or its contribution in the distance education. The same idea emerges from the question “how it the use of technology at the current moment? (Table 7) Then majority of the respondents (81.5%) said it needs further improvement and 16.7% showed somehow satisfaction with the usage of technology in distance education. The data presented in the table 8 about the challenges in the adoption of technology shows that 33.3% of the respondents did not receive any formal training to develop their capacity for the adoption of technology. While, 29.6% of the respondents learnt usage of technology in distance education by themselves. Therefore, we create link between their capacity for the adoption of technology and its outcome that is contribution of technology in the distance education. Then, a very basic question rise about their effectiveness in the distance education and we assume that they were not as effective as they could be. Because, a significant number of respondents did not acquire due formal training and its usage in distance education. In the same context, we would like to highlight that even 16.7% of the respondents even resistant to adopt the technology. However, same time 20.4% respondents said that they had not faced any challenge in the adoption of technology.

Table 5

S.No	Technology in use	No. of Employees	% of Employees
1.	Up to the Mark	1	1.9
2.	Up to some Extent	9	16.7
3.	Further Improvement Required	44	81.5
	Total	54	100.0

In the same context, Dean Overseas Education and E-learning said that” there is great need to train all the concerned-on e-learning trainings, students should be provided proper guidelines and training to get use of

this methodology, it should be ensuring the all have access to computers, copy right issues in development of material is a big issue and OER is very limited in use” (Director of Overseas Education AIOU).

Table 6

S.No.	Challenges in Adoption	No. of Respondents	Percentage
1.	No Challenges	11	20.4
2.	No. Formal Trainings	18	33.3
3.	Self-learning through hit& trail	16	29.6
4.	Resistance to adopt	9	16.7
	Total	54	100.0

Results also presented, the majority of the respondents (92.6%) were with the view that usage of training expedites the work. They were with the view that it has expedited their work, like the things which use to be done in months, now many a times only within hours those can be done, like scheduling interviews with the candidate for the pre-admission processes and even for viva voices as well. However, same time 3.7% of the respondents had the opinion that usage of technology delays the work progress or speed and even same proportion of the respondents were with the view there is no any benefit of using the technology.

Table 7

S.No.	Benefits of using Technology	No. of Respondents	Percentage
1.	Expedite your work	50	92.6
2.	Delayed in Processes	2	3.7
3.	None	2	3.7
	Total	54	100.0

Table 8 shows the response about the new learning method of education by research population In response of question what should be the future mode of learning, about 56% of the respondents said the new learning method will be based on virtual/online classrooms, most of those respondents were using LMS or OLIVE apps for the delivery of courses, about 40% of the responded said that there will be blended mode of learning in future as well as currently in practice, as on this most of respondents were on view that importance of classrooms cannot be eliminated, as classroom environment is mandatory for the learning

process, whereas about 6% responded that physical classrooms-based learnings will remain in place and important mode of learning.

Table 8

S.No.	Modes of Learning	No. of Respondents	Percentage
1.	Virtual(online)	30	55.6
2.	Classrooms	3	5.6
3.	Blended mode	21	38.9
	Total	54	100.0

Table 9 shows the response on that technology can be used to inspire both the teachers and students by the research population. In response of this question, 98% of the research population respondents responded that technologies can be used to inspire teachers and students both in the learning and teaching methodologies, as major drawback seen as of today is that if teachers and students are not at the same page, they are not familiar with the use of technologies, or they do not have proper infrastructure available at both it will be burden, but still only 2% responded that no it will not.

Table 9

S.No.	Tech to inspire Teachers & Students	No. of Employees	% of Employees
1.	No	1	1.9
2.	Yes	53	98.1
	Total	54	100.0

Table 10 shows the responses of research population on video game as teaching tool. In response to the question that video game should be used a teaching tool, about 52% respondents responded that video game can be used as teaching tool, where 24 % were not in this opinion to use video game as a teaching tool and 24% were partially agreed too. Mostly the response from the academia was that as video game are used for sharpening the skills of the persons, especially young kids so that these should be used as these games enable students in better decision making powers in the real world when they are at business and work scenarios.

Table 10

S.No. Video Game as a Teaching Tool	No. of Employees	% of Employees
1. Agree	28	51.9
2. No Agree	13	24.1
3. Partially agree	13	24.1
Total	54	100.0

Table 11 shows the response of research population for producing a mobile “app” application for online courses. In response of the question that mobile application should be developed and deployed to distance learning purposes, 91% of the respondents responded that mobile applications should be developed to deliver online courses and the same could be a viable solution as well, whereas 9% of the respondents responded that no this is not required as per them it will not serve the purpose of learning in adults.

Table 11

S.No Mobile Apps Development	No. of Employees	% of Employees
1. No	5	9.3
2. Yes	49	90.7
Total	54	100.0

Discussion

A significant shift has been reported in the distance education which is followed by technological development and its usage (Singh, Naz and Narayan 2017, 41; Swapp 2001). AIOU tries to align its pace with the emerging challenges through utilization of the technologies in the distance education. Somehow during last 48 years the university achieved its foundation objective and continue to do it with the adoption of new technologies in the distance education (Bughio and Abro 2014, 275). However, AIOU can play its due role more effectively and efficiently through proper utilization of technologies and the prime focus of this research was to understand the dynamics of current technology use in the distance education and its future perspective from the perspective of university concerned employees from the administrative and teaching side. As did by Bukhsh in 2015. To know such perspective

is an important issue because Pakistan is a country where most of the students get education from the formal institution and universities. However, due to cost effectiveness and recognition of distance learning institution like AIOU and Virtual University, a significant number of students are getting attract towards distance education in Pakistan (Shahzad 2017). In such scenario utilization of improved technology in the distance education will increase its attraction of the potential students. In addition to this, bringing inside from the administrative and teaching was an important dimension, because, one of the study conducted in 2015 mentioned that academic programme and academic institution were paid less attention in the research (Asdaque, et al. 2018)

Previously one of the study conducted by Noreen, Z. (2013) particularly emphasized upon higher education and specifically degree programme of M.Phil and Ph.D. in AIOU. She said that university needs to use technology like SMS alert, LMS system, use of Skype and other technology for better communication among teachers and students. In the same lines, she also recommended that for each class there should be a Facebook and may gather scholar at LinkedIn. In this context she also compared virtual university and emphasized virtual university upon AIOU. (Noreen 2013). However, this research goes further from the previous research and bring the fact that the teaching staff of the university and concerned administrative staff have been using skype, Facebook, twitter, Instagram, LinkedIn, YouTube and Whats App; as to connect with students and utilize virtual space for the betterment of distance education. In this way this research study is align with the other studies which advocate utilization of technology in distance education, particularly mobile technology. As Rosenblatt, Balderaz and Zeglin (2017) said that usage of mobile technology gives additional advantages over traditional teaching methods and it has potential to bring positive impact in the learning process. The same study indicates “special education teachers [in online course] were not using technology daily and were therefore not exposing their students to potentially beneficial methods of instruction (Rosenblatt, Balderaz and Zeglin 2017, 59; See also Alwraikat 2017a, 2017b; Panagiotakopoulos 2003)

However, this study is not only restricted its scope to know the usage of technology in the distance education. But, it also tried to come up its

status as to identify gap and suggest its better use with reference to the capacity of the concerned administrative and teaching staff and their perspective about it.

One of the previous research conducted about the role of technology in the distance education at AIOU highlighted that 64% of the research respondents (teaching and administrative staff) do not face any hurdle from the organizational side. The same study shows that a significant number of respondents (88%) admitted that bandwidth technology is a challenge for them and 88% of the respondents were facing trouble in video sharing and even 52% of the respondents complained about the internet connection. Similarly, 72% of the respondents were with the opinion that there is a dire need of technical skills at user end. In the same vein, 64% affirmed that computer skills are needed at user and institutional level. Finally, I would add from the same study that 84% of the respondents said technological challenges exist at AIOU (Buksh 2015, 92-95). With reference to Buksh's (2015) study, I like to compare results of this study and propagate the issue regarding use of technology in distance education with more updated information. The findings of this research indicates that there were only 22% of the respondents who said that they did not face challenges in the adoption of the technology in distance education. It means remaining faced certain level of challenges in the use of technology in distance education. Hence in this way this study is consistent with the Buksh's (2015). However, this study brings the reason why a significant number of the teaching and administrative staff was facing challenges in the adoption of technology? Then the answer came with 33% respondents view that they did not receive a formal training. Therefore, they were facing challenges in the adoption of technology. When we went further and tried to know then how other are managing to handle with the technology use in distance education. Then we learnt that 29.6% of the respondents somehow using technology in distance education by self-learning. In the same vein, among those who were facing in the adoption of technology, they gave a reason that it delays the process. If it is true, technology really delay the process? Yes, it can be for those who are not better equipped or do not have capacity. In the same way, 81% of the respondents were with the view that at AIOU there is dire need to further improvement in the use of technology at

this point this research somehow consistent with the Buksh's (2015) 72% of the respondents were with the view that skills regarding technological use should be enhanced. But with all the limitation, the good side came out from the respondents side were that 94.4% respondents thinks use of technology in the distance education is very important, 55.6% says technology has very extensive contribution, 33.3% says it has contribution up-to some extent, 92.6 % said it expedite the work, 55.6% emphasized upon virtual class rooms while 38.9% said blended mode of class can be beneficial, 98.1% were with the view that use of technology can inspire students, 51.9% of the respondents were agree to introduce video game as a teaching tool, while 24.1% were partially agree similarly, 90.7% said that mobile app can be useful in distance education as well at AIOU.

Conclusion

The study found that AIOU has gradually adopted the technologies from time to time and therefore successfully catered to the needs of its students. However, there is a need of comprehensive technology adoption and capacity building plan to shift towards new technologies. Many officers of the AIOU are using social media and internet for dissemination of information but it should be effectively moderated officially by the university. The use of SMS, university website services especially the data with regards to admissions confirmation, delay or issues as well as examinations services related to online roll number slips, results history etc. are quite helpful for the students as well as university staff. The study highlighted that teachers and administrative staff is eager to increase the use of technology in the distance education. However, same time, they do not have desired capacity and ultimately the role of university administration to develop desired and due capacity of the concerned staff is lacking. Resultant, teaching staff is not effective and facing issue to contribute efficiently and effectively in the use of technology for distance education at AIOU. Therefore, this research is a call to understand the need of the concerned administrative and teaching staff in the use of technology and its utilization for better results. Similarly, tis research also determine the future perspective of the administrative and teaching

staff how they perceive about the technology in future and how they want to use it. So, there is provision and willingness from the concerned staff to bring use of mobile app, video games and virtual class rooms to enhance the scope of distance education and improve the role of AIOU in wider coverage.

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