Viability of E-Learning Approach in the University of Khyber Pakhtunkhwa

Ishtaiq Hussain[*]
Nabi Bux Jumani[**]
Maqsood Ahmed[***]
Sarfraz Ahmad[****]

Abstract

The present study was aimed to find out viability of e-learning approach in the universities of Khyber Pakhtunkhwa so that problems faced during implementing e-learning approach may be addressed. It was made possible through highlighting the five factors during a survey. Results showed that readiness level was moderate to launch e-learning programme for the students of far flung areas, and especially those students who are job holder and wish to improve their education. Three factors i.e., Infrastructure, cultural and human factors were found low, and remaining two factors i.e., support and pedagogical were at moderate level. Ten basic strategies were found to be useful for the effectiveness of e-learning approach as it is based on the knowledge and different fields of research. Separate directorate has been suggested to run the e-learning programmes and emphasis has been laid down on short courses at the initial stages for making people of Khyber Pakhtunkhwa aware about e-learning approach for the improvement of the study. A separate Institute with its independent funds has been suggested to monitor the e-learning activities with the coordination of the IT department in all public and private universities of Khyber Pakhtunkhwa.

Keywords: Viability, e-learning, achievement, readiness, allocation

[*]Associate Professor, Institute of Education & Research, Kohat University of Science & Technology (Pakistan) Email: dr.ishtiaq@kust.edu.pk
[**]Professor of Education and Dean Faculty of Social Sciences, International Islamic University Islamabad, Pakistan Email: nbjumani@yahoo.com
[***]Ph.D Scholar, Allama Iqbal Open University, Islamabad, Email: aburaafey2008@gmail.com
[****]Ph.D Scholar Kohat University of Science & Technology (Pakistan),
Email: sarfraz.ahmad@kust.edu.pk

Introduction

A lot of associations have demonstrated an astounding inclination to offer e-learning courses because of the considerable capability of e-learning figuring out how to give benefits as synchronous and offbeat classes, andhow an expansive number of students are coordinated towards long lasting learning. Truth be told, creating self-sufficient students who can learn without anyone else and enhance their insight and aptitudes paying little respect to their geological areas, age, time restrictions and learning methodologies has turned into a definitive objective of numerous instructive associations (Hsia & Tseng, 2008).

Regardless of its perceptible advance in current training, e-learning has not achieved an abnormal state of appropriation by clients, especially in customary learning conditions. E-taking has gotten genuine feedback from the promoters of customary instructive frameworks; for instance, educators trust that e-learning does not cover all parts of instructing, nor does it bolster all highlights of learning (Bashirian, Jalilian, Barati & Ghafari, 2013).

In different researches, it has been explained the need and importance of Information Technology for higher education as well as for the society. Its example has been given by the Singh, O' Donoghue and Worton. (2003) that from the previous two decades overall development of information technology had a great change for the societal access as well as to enhance knowledge. It also molded the way of teaching in the field of education. Today in this world, especially the young generation of the western world is growing up with the great knowledge of internet and technology like using mobile phones, chat rooms, simulations and games. They are so familiar with the technologies that they have almost access of internet all the time in the school as well as in the home, and they are synchronizing their ways of living with the technologies. Hawkin and Oblinger (2005) explained that it is expected by the coming generation to use this technology at higher level because they are already using it at primary and secondary level (Holmström, & Pitkänen, 2012).

Keeping in view the previous enrolment in higher education, this is becoming the norm (Newman & Couturier, 2002; Middlehurst, 2003). Globally, this expansion is at higher level of education which may exceed into many countries and regions. Students are increasing from the last twenty years globally in size (40.3 million students in 1975 to 80.5 million students by 1995) explained by the World Bank (2000). Future demand is also explained by the Olsen (2002) through different

researches. He predicted that the global demand may increase form 48 million 1990 to 159 million in 2025 (Holmström & Pitkänen, 2012).

Association is greatly flourished and encouraged as a method that may become the cause of the clustering of investment and expertise. It also may cause for the enough economy of scale and active distribution of the result. It has also been emphasized at the corporate sector to work as partner to gather bottom up networks and associations by involving many countries so that a centralized network may be established in the form of Virtual universities (Wende & van Ven, 2003).

Mirza Mohammadi (2017) stated that the experience of e-learning needs the restrained and shrewdness of an intelligent and serious teaching members who may contribute for making principles and strategies while remaining in any field which is their fundamental requirement. The most researches showed from their results that mostly teachers are unfamiliar with the use of modern technologies being used in the field of education while teaching through e-learning.

The most important at the end of teachers and students is regarding their teaching and learning. There are two major components i.e., environmental features & characteristics of the students explained by the Kint and Zhu (2016) while having the environment of blended learning. Liaw and Huang (2003) explained that readiness of the learner as their characteristics including attitude, beliefs, confidence and motivation must be find out for implementation and development of e-learning. Other three factors including experience, competence effect and attitude also have their impact on the implementation and development of e-Learning (Sadic, 2007).

A clear relationship has been declared by the Malic (2010) between the educational continuation and students' motivation in e-Learning. Another conclusion has been made by the Hart (2012) that a set of different variables like attitudes, skills and behavior is required for the complete success in online training courses and they are linked with the encouragement which causes to continue the education system of learning. It has been explained by the Lin, Huangand Chen (2014) about the two parts i.e., inner and outer parts related to the teaching faculty members which were deprived off from the many problems like not preparation of the faculty members, support of organization, time problem, personal motivation and support related to the technical problems.

Other restrictions explained by Nedelman (2013) for using the technology at higher level of education included facing problems the lack of technical information, structure regarding management, less

effectiveness of the technology, and change in the organization. Understanding regarding the readiness of faculty members examined by the Jariang Pcasert (2003) working in the Business Administration at "Chiang Mai" University where it is used as eLearning.

There is a tremendous role of infrastructure used with the technology let impressive impact on the teachers' thinking about e-Learning (McConnell et al., 2008). Most of the countries are using very useful infrastructure of using technology especially in China but the support factor is still weak as compared to the UK or USA and still need to be developed. This is because that mostly teachers in China are facing problems using e-Learning technology in higher education system as compared to the UK. Bu comparing the different factors of China and UK, we can easily say that there are different role of e-Learning as dynamic and developing because it has greatly influenced by the culture, system of education and beliefs that they have to make their society. This is why, China has devised the way of teaching through their model where they can deliver their lectures and can provide online material. That must be dependent on the information available regarding e-Learning and traditional way of teaching (Holmström, & Pitkänen, 2012).

The conceptual model of the present study as used in the research of Mirza Mohammadi (2017) was used to find out viability of e-learning approach in the university of Khyber Pakhtunkhwa which is as follows:
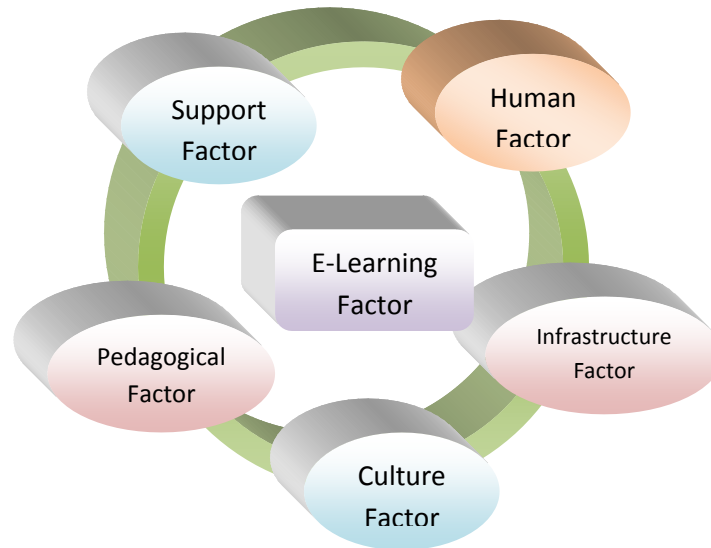

Figure 1**:** Conceptual model of the research study (Research based)

Mirza Mohammadi (2017) described that there is still no space and understanding regarding the use of e-Learning in many universities and this is the reason that still it has no such specific value in the field of education and different strategic plans of the universities. Even at the part of teachers and students there is no interest to take part in the different courses regarding the e-Learning and this is because that they still are unfamiliar with the use of technology in many fields. In universities also, there is no appropriate structure found at higher level due to not allocation of the budget and deployment of the personnel. There is no appropriate equipment to maintain the existing installations which have been used for the eLearning in higher education.

Methodology

This study was descriptive in nature. Survey method has been used for collection of the data. It has been studies about the viability of e-learning approach in the Kohat University of Science & Technology, Khyber Pakhtunkhwa (Pakistan). Moreover, the suitable solutions in terms of culture, support, and infrastructure, human and pedagogical factors have been elaborated. There are 21 public universities in Khyber Pakhtunkhwa but Kohat University of Science & Technology has been taken due to its central location where most of the students belonging or living in Khyber Pakhtunkhwa can approach easily. Another reason to select this university was the advancement of university in the field of science & technology. This university has various departments related to educational fields. The faculty members, supporting staff and experts of the university were approached for data collection.

Population and Sample

Population for the present research was taken all the faculty members and administrative staff working on regular, contract and visiting basis in Kohat University of Science & Technology Kohat. According to the current statistics of this public university,the total population of the study was 576. Detail is as follows

Table 1

Detail of Population for the Study

S.No	Participants	Regular	Contract	Visiting	Total	%age
1.	Faculty members	219	31	06	256	44.44
2.	Administrative Staff	268	52	00	320	55.56
Total		487	83	6	576	100%

The sample of the study was selected by using stratified random sampling. Proportionate sample was taken showing the appropriate representation of subgroups of population. This selection was made using Morgan Table. Detail is as follows:

Table 2

Detail of Sample size taken for study

S.No	Participants	Regular	Contract	Total	%age
1.	Faculty members	140	28	168	44.8
2.	Administrative Staff	159	48	207	55.2
Total		299	76	375	100%

Research Tool for Data Collection

The researcher used questionnaires to collect the information from the faculty members and administrative staff while interviews were taken from the experts in education field. Review of literature and analysis of the previous researches was the base to construct the research tools consisting five types of factors regarding viability of the e-learning approach in the University of Khyber Pakhtunkhwa. Validity of the tools was sought through expert opinion from 10 experienced persons having vast knowledge regarding e-learning in higher education. Reliability of the instruments was checked through data collected from the 25 faculty members and administrative staff other than required sample. Cronbach's Alpha results which is follows

Table 3

Item Statistics results regarding the viability of e-learning approach

	Mean	Std. Deviation	N
Infrastructure Factor	3.72	1.429	25
Culture Factor	3.88	1.563	25
Support Factor	3.92	1.288	25
Human Factor	2.24	1.535	25
Pedagogical Factor	3.52	1.418	25

Table 4

Results concerningthe viability of e-learning approach using Cronbach's alpha

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N
.962	.965	5

From the results of Cronbach's alpha, it was clear that reliability for the viability of e-learning approach research tool is advantageous because the achieved reliability was 0.962 which was exceeded to 0.70.

Required Data Analysis

Quantitative data from questionnaire and qualitative data from interviews have been obtained. Both quantitative and qualitative statistical methods were used for the analysis of the study. In which, frequency, average, percentage, t-test with 0.05 level of p-value was used with standard deviation and inferential statistics, ANOVA and Friedman tests were used to acquire outcomes from the measurable data.

Results

Question: How is the readiness of Kohat University of Science and Technology about viability of e-learning approach?

Table 5

One-sample t-test outcomes on the readiness of Kohat University of Science and Technology about viability of e-learning approach from the perspective of experts.

	N	Standard Deviation	The Standard Error	t-value	Degree of Freedom	p-value
Infrastructure Factor	10	1.398	.442	8.593	9	.000
Culture Factor	10	1.337	.423	8.748	9	.000
Support Factor	10	1.703	.539	6.128	9	.000
Human Factor	10	1.337	.423	5.438	9	.000
Pedagogical Factor	10	1.476	.467	6.000	9	.000

Table No.5 indicated that the importance of e-leaning approach for the professionals was the Support factor and the slightest significant factor was Culture and Human factor.

Table 6

Outcome of Friedman test concerning the readiness level of Kohat University of Science and Technology, according to the experts' view.

		Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People		84.980	9	9.442		
Within People	Between Items	15.880[a]	4	3.970	24.061	.000
	Residual	10.520	36	.292		
	Total	26.400	40	.660		
Total		111.380	49	2.273		

Grand Mean = 3.18
a. Kendall's coefficient of concordance W = .143.

Table No.6 shows that readiness level of Kohat University of Science and Technology in experts' views.

Table 7

t- test outcome concerning the readiness level of Kohat University of Science and Technology from the Infrastructure factor view

Number	Mean	SD	SE	t value	Df	p-value
362	3.76	1.518	.080	47.166	361	.000

Indicating the result presented in table No.7, the sample mean and the assumed mean of the population have the significant difference at the significant level of 0.05 (t=47.166) which was concerning the preparatory level of the Kohat University of Science & Technology in respect of implementation of the e-leaning mode of teaching from the infrastructural factor opinion is moderate to low.

Table 8

t-test value concerning the readiness level of Kohat University of Science and Technology according to the Cultural factor.

Number	Mean	SD	SE	t value	Df	p-value
362	4.01	1.266	.067	60.305	361	.000

Indicating the result of the table 8, it is highlighted that the sample mean and the assumed mean of the population is having the significant difference between them at the significant level of 0.05 (t=60.305) concerning the implementation of e-learning approach in Kohat

University of Science & Technology as per the cultural factor showing the results moderate to low. The educational experts have stated that there is cultural factor to have access on e-leaning mode for learning education. They also indicated that there is lack of supervisory staff that would have direct control on this programme. They also highlighted that in most of the villages students do not have access of internet facility and result of the students would be failure. They suggested that at initial level learning material should also be provided in hard copy so that students may get sufficient support regarding their learning concepts.

Table 9

t-test value concerning the readiness level of Kohat University of Science and Technology according to the view of Support factor

Number	Mean	SD	SE	t value	Df	p-value
362	3.67	1.434	.075	48.630	361	.000

Result indicated that the sample mean and the assumed mean of the population showing the significant difference at significant level of 0.05 (t=48.630) concerning the implementation of the e-learning approach as per the view of support factor. The experts highlighted that there must be directorate who should purely work on this e-learning implementation programme. They have suggested that a separate fund may be asked from HEC so that a meaningful and effective programme may be started. Administrative staff suggested that fund is the most important support factor in this regard. They have also suggested coordinating with Allama Iqbal Open University, Islamabad and Virtual University through proper channel so that maximum support may be taken for implementation of e-leaning approach. They have suggested creating electronic contents so that students may access the contents at every possible way.

Table 10

t-test result concerning the readiness level of Kohat University of Science and Technology according to the view of Human factor

Number	Mean	SD	SE	t-test value	Df	p-value
362	3.87	1.332	.070	55.264	361	.000

Result written in table No. 10 declared that the sample mean and the assumed mean of the population is having the significant difference at

significant level of 0.05 (t=55.264) regarding the viability of e-leaning approach from the Human factor view which was moderate. The faculty members suggested that students must be called on weekend so that their queries may be solved regarding their issues in their studies if they face during learning process. They also suggested workshops on the pattern of Allama Iqbal Open University so that students may get familiar with the other e-learning sources and e-learning approach in a comprehensive way. They suggested an e-leaning course for each prospective teacher so that awareness about e-learning may be advocated.

Table 11

t-test value concerning the readiness level of Kohat University of Science and Technology accordingly from the view of Pedagogical factor.

Number	Mean	SD	SE	t-test value	Df	p-value
362	2.85	1.484	.078	36.472	361	.000

By analyzing the result in table No. 11, the sample mean and the assumed mean of the population is having the significant difference at the significant level of 0.05 (t=36.472) concerning the viability of e-learning approach as per the view of the pedagogical factor. Faculty members suggested that viability of e-learning approach will be more effective if students would be called on weekend and practical work on pharmacy, computer, and engineering may be carried out which is difficult to learn through e-learning.

Solution of the answer regarding Infrastructure in the field of e-learning has been suggested on the research findings that established conference room may be used for online learning. It has also been suggested that a digital lab may be established under supervision of an educationist so that contents and material may be kept in soft for the students. Solution of human factor may be solved through experts in the field of educational technology. Solution of cultural factor may be overcome through arranging workshops in universities or suitable mechanism may be made for the monitoring activities of the students and teachers. Suitable software like Moodle may be used for e-learning with the help of IT department by allocating appropriate budgets for generating electronic contents and material. Solution of pedagogical factor may be solved through training of different courses.

Discussion

Many studies have been conducted regarding eLearning implementation in different universities of the world but purely in Pakistan there is no such study which has showed the possibility of e-learning approach in Pakistani Universities particularly in the universities of Khyber Pakhtunkhwa (Pakistan). This study is the pioneer to highlight the issues regarding the viability of e-learning approach in universities of Khyber Pakhtunkhwa. Faculty of the university in this research was from the Biological sciences, social sciences and physical sciences. This research gave the new approach of learning where maximum utilization of resources are there, and expansion of knowledge also helps to have vast vision in education and the new phenomenon has been given the name e-learning approach. Comparing the results of the research, it is clear that support factor requires separate budget and attention which is possible through making a separate directorate for it. So that, each student may be facilitated in all respects. From the expert and administrative staff views it is suggested that students are having interest to divert themselves toward technology but due to lack of internet facility in villages students may not be accommodated well in manner. Most of the sample showed that there is also lack of motivation which is serious obstacle in implementing e-learning approach in the universities of Khyber Pakhtunkhwa. Technology training model has been suggested for the faculty members and prospective teachers so that at initial base teachers may be equipped with the technology-based learning and teaching as well.
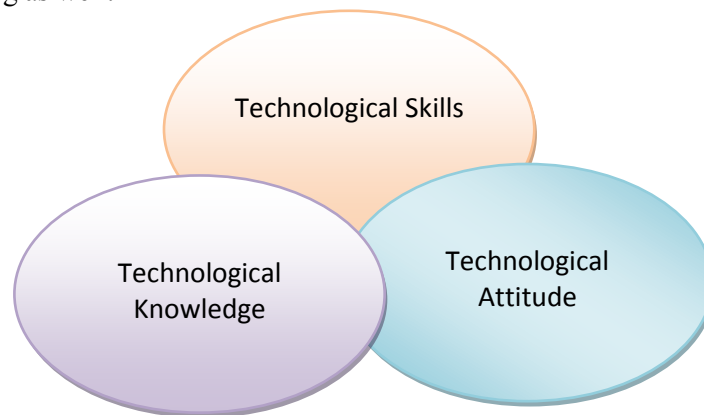
Figure 2**:** The Technological Faculty Members Training Model and Prospective Teachers

Conclusion

E-learning approach in the learning process of higher education is a new way to learn. This way of learning is based on interactive technologies with good communication system for improving learning experiences. It has capability to transform the way we deliver and learn across the world. It can raise the standard of teaching and learning. It has vast participation in lifelong learning process. It is not replaceable with the lecturers or teachers but alongwith the existing methods, it can be used to enhance the quality of the education. It reduces the time and save energies of the teachers in teaching learning process. This mode of learning is more beneficial for the educators and learners to achieve their potential and empowered to change. It surely makes possible truly ambitious education system for the future learning society. The result of the study showed the week experience of knowing about the viability of e-learning approach in Kohat University of Science & Technology. Experts and faculty supported to run this system through applying blended learning approach at the initial base so that it may be strengthened gradually. This e-learning approach would help and initiate the students to learn independently. According to the explanation of the Mironov, Ciolan, and Borzea (2012) that quality always adhere many things with traditional as well as online learning while keeping in view the flexibility approach carrying e-learning process. Other point of view that explained by the Graham (2013) that always there must be a framework which should be taken into consideration for blended learning approach in any field of education or in any organization. Keeping in view of the difference researches, almost 06 cases have been included like; initial application or compatibility, exploration or awareness and full grow or full application. In this wayblended learning at any organizational level may be improved.

According to the current situation in Kohat University of Science & Technology, the following model of e-learning can be applied:
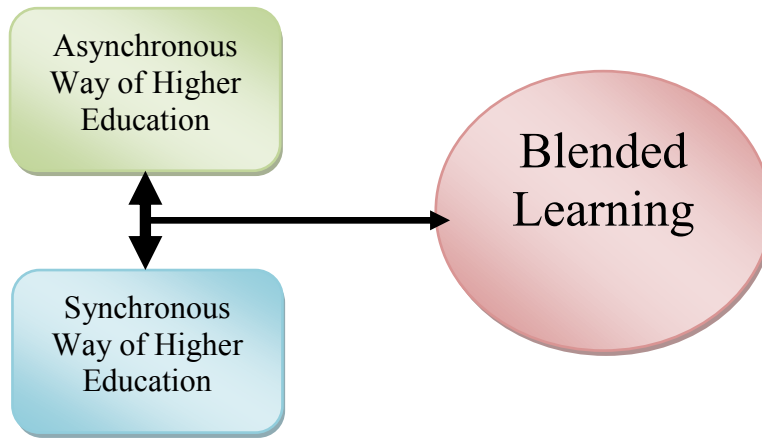
Figure 3: E-learning model in Kohat University of Science & Technology

This model can also be applied to all Public and Private Universities of Khyber Pakhtunkhwa.

References

Bashirian S, Jalilian F, Barati, M , Ghafari A., (2013). Study on the predicting factors of intended E-Learning among faculty members based on theory of planned behavior. *Majale tosae amozesh dr olom pezeshki*, *7*(15), 10-21.(In Persian).

Boezerooy, P. (2006). *E-learning strategies of higher education institutions*. Retrieved from https://www.utwente.nl/en/bms/cheps/ education/phd-page/cheps-alumni-and-theirtheses/2006boezerooy dissertation.pdf

Hart, C. (2012). Factor associated with student's persistence in an online program study: A review of the literature. *Journal of Interactive Online Learning, 11* (1), 19-42.

Hawkins, B. L., & Oblinger, D. G. (2005). The Myth about E-Learning. *EDUCAUSE review*, *40*(4),14-15.

Holmström, T., & Pitkänen, J. (2012). *E-learning in higher education: A qualitative field study examining Bolivian teachers' beliefs e-learning in higher education* (*Bachelor thesis)*. Umea University, Sweden.

Hsia, J. W., & Tseng, A. H. (2008, September). An enhanced technology acceptance model for e-learning systems in high-tech companies in Taiwan: Analyzed by structural equation modeling. *International Conference on Cyberworlds,* (39-44). Spain: IEEE.

Jariang Pcasert, N. (2003). The opinion of faculty of business administration lectures and students, Chiang Mai University about the use of E- Learning, Songkalakarin. *Journal of Social Sciences & Humanities, 9* (2), 136-145.

Kint,M.G., & Zhu,C. (2016). Characteristics and learning outcomes in a blended learning environment in a Ugandan university.*Electronic Journal of E-Leaning, 14* (3), 181-195.

Liaw, S., & Haung, H. M. (2003). An investigation of user's attitudes toward search engines as an information retrieval tool.*Computers in Human Behavior, 19* (6), 751-765.

Lin,C.Y., Huang,C.K.,& Chen, C.H.(2014). Barriers to the adaption of ICT in teaching Chinese as a foreign language in US universities, *Re CALL*, 26 (1), 100-116.

Malic, M. (2010). Factor effecting learner's satisfaction toward E-Learning: a conceptual framework, conceptual framework. *OIDA International Journal of Sustainable   Development, 2*(3)*,* 77-82.

McConnell, D., Banks, S., & Bowskill, N. (2008). Examining Conceptions of e-learning in an   intercultural, Sino-UK, context. *Proceedings of the 6th International Conference on   Networked Learning*, 720–726. Retrieved from www.networkedlearning conference.org.ukpast/nlc2008/abstracts/PDFs/McConnell-270-279.pdf

Middlehurst, R. (2003). Competition, collaboration and ICT: Challenges and choices for higher education institutions. In Vander Wende, M.C. and Vander Ven, M., *The use of ICT in higher Education: A mirror of Europe* (253-275). The Netherlands.

Mohammadi, M. (2017). The feasibility of E-Learning implementation in an Iranian University. *Electronic Journal of e-Learning, 15*(5), 423-432.

Nadelman, C. A. (2013). *Exploring Organizational and Cultural Barriers to Developing Distance Learning* (Doctoral dissertation, Northcentral University, Prescott Valley, Arizona.

Newman, F., & Couturier, L. (2002). Trading public good in the higher education market, The Observatory on Borderless Higher Education. Retrieved from http://www.futuresproject.org/publications.

Olsen, A. (2002). E-Learning in Asia. Paper presented for the observatory on borderless higher education. Retrieved from www.obhe.ac.uk.

Sadic, A. (2007). The readiness of faculty members to develop and implement E- Learning: the   case of Egyptian university. *International Journal of E- Learning, 6*(3), 433-453

Singh, G., O' Donoghue, J. & Worton, H. (2003). A study into the effects of e-Learning on higher education. *JUTLP, (2) 1.* Retrieved July 22, 2005 from http://jutlp.uow.edu.au/2005_v02_i01/odonoghue003.html

Van der Wende, M., & van de Ven, M. (2003). *The use of ICT in Higher Education. A mirror of Europe.* The Netherlands: Lemma Publishers.

World Bank. The Task Force on Education and Society (2000). Higher Education in Developing countries: Peril and Promise. Washington, DC: World Bank.

Citation of this Article:
Ishtiaq, H., Jumani, N.B., Ahmed, M., & Ahmad, S. (2018). Viability of e-learning approach in the University of Khyber Pakhtunkhwa. *Pakistan Journal of Distance and Online Learning, 4*(1).21-36.