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E-Learning in Afghanistan Higher Education: Wheel of Change

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ABSTRACT

The research discusses the implementation of e-learning programs in Kabul based public universities. The aim of this research is to find what types of facilities, problems and challenges exist towards launching e-learning programs in the stated universities. The study uses both qualitative and quantitative methods for data collection to answers the following questions: Do instructors and students at Kabul based public universities have necessary skills to integrate technology in their teaching and learning? What are the advantages and disadvantages of e-learning in higher education? What types of e-learning programs can be launched with more ease and effectiveness in the next two years (2019-2020) in these universities?

The research results indicate that most instructors have the basic skills to integrate technology in their teaching while majority of students need trainings. However, lack of sustainable electricity, ICT tools and poor internet connection can challenge the efficient implementation of e-learning programs in Kabul based public Universities. Quality education, cost, time, and greater enrollment are main factors for growing e-learning programs. Kabul based public universities can use various platforms such as AfghanX and Moodle for managing e-learning programs.

1. Introduction

Progress in Information and Communication Technology (ICTs) has influenced all parts of society including education part. The application of ICTs in shape of e-learning is already changing teaching and learning process.

There are various factors that encourage institutions to adopt e-learning. Better access to information and communication via electronic facilities, good assistance and collaboration, and low cost are the examples. Instructors and learners can choose more appropriate applications that are flexible in time, place, adapted to specific domains and more cost-efficient (Fisser, Pelliccione, 2001).

In contrast, there are many challenges Afghan Higher Education Institutions face as they seek to implement e-learning program. Luck of sustainable electricity, ICT tools, and poor Internet connection are major challenges still exist in these institutions.

2. Ministry of Higher Education Strategic Plan Towards E-Learning

E–Learning programs have massive advantages both for instructors and students. Taking this point in mind, the Ministry of Higher Education (MoHE) has embedded e-learning system in its next five years (2016-2020) strategic plan. The plan is to launch e-learning programs in Kabul based public universities (Kabul University, Kabul Medical University, Kabul Polytechnic University, and Shaheed Rabbani Education University) where the basic facilities (such as electricity, computers, projectors, LCDs, and Internet) are somehow available and will be enriched until 2020.

Currently, e-learning committees are established in each stated universities working on how to design, develop, and implement e-learning programs in their universities. These committees are supported and coordinated by a main e-learning committee which operates in MoHE. The committees are working to pave way for launching e-learning programs in the respected universities.

This research study discusses the implementation of ICTs in teaching and learning by reviewing the context of e-learning in Afghan Universities.

3. Literature Review

One of the most important areas in education is teaching and learning and the entire efforts of institutions are to make sure that instruction is effective and students are able to maximize their outcomes (Livingstone, 2014). According to Lunenburg and Irby (2006) the aim of education is learning and the vehicle used to achieve that aim is teaching. Universities try to teach right contents with right tools in order to achieve the intended outcomes.

The 21st century is also called technological era; each sector of life is affected by technology including education sector. Universities need to integrate technology to learning and teaching practices in order to help their students achieve 21st century skills. According to Stockley, the delivery of a learning, training or education program through the help of electronics is called e-learning (2014).

Universities are perfect place to prepare students with what they need in term of knowledge, skills and competencies for the real world (European Commission, 2005). E-learning provides students with active environment where they have access to technological tools. It increases interaction between learner and instructors, learner and learner and learner and content (Hewitt, 2003; Moore, 1989; Sutton, 2001; Wagner, 1997). E-learning provides students the twenty first century skills such as critical thinking, leadership, team working, lifelong learning, creativity and so on.

E-learning tools may include radio and television, CDs and DVDs, video conferencing, web based technologies, mobile

technologies and electronic platforms (Singh, 2003).The Open University of Malaysia uses learning management, email and other IT services, tutor instruction, CD-ROM courseware, discussion forums and diverse classroom environment (formal classroom, computer lab, science lab) for operating its e-learning programs. Similarly, the University of New South Wales uses library, technology enabled learning and teaching platform, e-portfolio, virtual meeting rooms, learning management systems, webinars and recorded lectures. In general, universities use teleconferencing, videoconferencing, print and online materials, email, fax, library and research centers, help desk, information center and technology systems to support education (Cuesta, 2018).

It is important for Afghan universities to integrate technology in their teaching and learning process. E-learning provides quality education and 21st century skills to students. It also helps instructors to teach large classes with help of technology. However, it is necessary for universities to provide essential ICT tools and facilities before starting e-learning programs.

E-learning programs require Learning Management Systems (LMS) to run. There are different types of LMSs such as AfghanX and Moodle which can be used by Afghan universities for running e-learning programs. AfghanX is a newly developed platform with an aim to host courses in Afghan national languages (Pashto and Dari). The university can also use Moodle which is a free open source platform and can be customized accordingly. It is easy to use and requires no license fee (Weller, 2004).

4. Problem Statement

Quality, cost, time, and greater enrollment are main factors for growing e - learning programs. The Ministry of Higher Education is currently facing number of challenges.

First, in 2001 only 7500 students participated in the entrance exam (Kankor) from while country to get admission in universities, while this number has rapidly increased to 210000 in 2018. There are 25 public universities and institutes of higher education in Afghanistan. MoHE can enroll only 70000 out of 210000 students for higher education due to lack of basic infrastructure and lecturers. The government particularly MoHE is under great pressure both from Afghan citizens and parliament. They criticize MoHE for not being able to provide equal enrollment opportunity for all baccalaureates.

Second, shortage of instructors in each public university is another challenge. MoHE has not been able to recruit enough new instructors each year for all universities due to shortage of its budget.

Last, there are typically over 50 students in each class and in some classes the number can increase up to 120 students. The instructors do not know how to effectively teach these large numbers of students through traditional teaching methods. The quality of education is systematically getting poor by passing each year; as a consequence, the graduates cannot meet requirements of job market.

Providing equal enrollment opportunity for baccalaureates to access quality higher education is a huge challenge for the Ministry of Higher Education. The Ministry is attempting different approaches to overcome this challenge. One of these approaches is the introduction of e-learning programs as a wheel of change in Kabul based public universities at the end of 2020.

5. Objective of the Study

1. Explores the current usage of ICTs in education practices in Kabul based public universities.
2. Recommends technology based education for tertiary learning and teaching.
3. Suggests an e-learning platform for the stated universities.
4. Determine sustainability of e-learning programs in Kabul based public universities.

6. Research Setting

Kabul based public universities are the major public universities in Afghanistan training professionals in different disciplines for job markets. Each university has better educational facilities and higher degree (MA, PhD) instructors in comparison to provincial universities.

The study took place in four public universities (Kabul University, Kabul Medical University, Kabul Polytechnic University, and Shaheed Rabbani Education University). Three faculties of each stated universities were randomly selected for the study.

7. Research Questions

The study mainly addresses the following questions:

1. Can MoHE provide all necessary ICT tools for launching e-learning program in Kabul based public universities up to 2020 (according to its strategic plan)?
2. Are instructors and students of the stated universities ready to embrace technology based education?
3. Can e-learning program address the shortage of instructors, classrooms, learning resources and students' low enrolment?
4. What type of e-learning programs can be launched with more ease and effectiveness in the next two (2019 -2020) years in these universities?

8. Research Gap

As far as I am concern, no one has conducted research yet on the Introduction of e-learning programs in Kabul based public universities. I would like to discuss advantages of e-learning, challenges and issues that currently exist towards this system in these universities.

The purpose of this study from one hand is to explore which ICT tools and skills are required for launching e-learning programs in Kabul based public universities. The study also explores advantages of e-learning programs and how it can provide opportunities both for instructors and learners of the stated universities.

9. Research Methodology

In order to obtain perspectives regarding the implementation of e-learning programs in Kabul based public universities, 108 interviews have been conducted with deans of faculties, chairs of departments, e-learning committee members and instructors. Similarly, 1600 paper based questionnaires were distributed to the instructors and students of the stated universities. I had the list of instructors and

students and the participants were selected based on random selection.

10. Expected Results

ICTs provide good opportunity for institutes of higher education in developing countries to improve their teaching and learning process. The basic ICT infrastructure such as Local Area Network, internet, computers, projectors, LCDs, video, audio, CDs and DVDs, and mobile technology facility has to be available in a university to launch e-learning. Pedagogical, technical and cost issues must be taken into consideration for each particular technology when integrating ICTs in teaching and learning practices.

The results of my study help administrators, instructors, and students to have more positive attitudes towards ICTs and use them in their teaching and learning process. It also help the Ministry of Higher Education to know about the amount of ICT tools currently exist in Kabul based public universities and how to launch e-learning programs in these universities in the light of its strategic plan (e-learning plan).

In the light of collected data from the survey, interview and literature review I have plan to suggest a form of e-learning platform that can be used for teaching and learning which will result the following outcomes:

First, e-learning can improve quality of education, because it provides interactive and communicative environment to all students. This system improves critical thinking, problem solving, and communication skills (so called 21st century Skills) in students.

Second, e-learning address the shortage of learning materials such as chapter notes and textbooks. Students can simply receive all materials and study them on hand-held devices such as mobile phones and computers. This system provides high quality of teaching materials, such as videos and interactive software.

Third, e-learning system is cost – effective (Weller, 2004). Students do not need to pay for printing chapter notes and assignment. They can submit their assignments from their homes and offices.

11. The Participants

The participants included dean of faculties, chairs of departments, faculty members, e - learning committee members, and students.

INTERVIEW PARTICIPANTS (KBL based Universities)					
Interview Participants	**Number of Participants**	**Male**	**Female**	**Teaching Experience**	**Administrative Experience**
Dean of faculties and chair of departments	**40**	**32**	**8**	**3 – 20**	**1 – 12**
Instructors	**60**	**46**	**14**	**2–32**	**X**
E - learning Committee Members	**8**	**6**	**2**	**1 – 3**	**X**
Total	**108**	**84**	**24**		
Percentage	**100%**	**77.7%**	**22.3%**		

Table 1: describes some characteristics of interview participants (KBL based Universities)

QUESTIONNAIRE PARTICIPANTS (KBL based Universities) – INSTRUCTORS				
Faculties	**Number of Participants**	**Male**	**Female**	**Teaching Experience**
Kabul University	**50**	**40**	**10**	**1 – 30**
Kabul Medical University	**50**	**41**	**9**	**1 – 25**
Kabul Polytechnic University	**50**	**45**	**5**	**1 – 35**
Shaheed Rabbani Education University	**50**	**30**	**20**	**1 – 25**
Total	**200**	**156**	**44**	
Percentage	**100%**	**78%**	**22%**	

Table 2:describes some characteristics of questionnaire participants (KBL based Universities)

QUESTIONNAIRE PARTICIPANTS (KBL based Universities) – STUDENTS				
Faculties	**Number of Participants**	**Male**	**Female**	**Year**
Kabul University	**350**	**260**	**90**	**Juniors + Seniors**
Kabul Medical University	**350**	**290**	**60**	**Juniors + Seniors**
Kabul Polytechnic University	**350**	**310**	**40**	**Juniors + Seniors**
Shaheed Rabbani Education University	**350**	**190**	**160**	**Juniors + Seniors**
Total	**1400**	**1050**	**350**	
Percentage	**100%**	**75%**	**25%**	

Table 2:describes some characteristics of questionnaire participants (KBL based Universities)

12. Data Analysis

The interview contained 10 questions while the questionnaire 15. Data is collected physically in paper based form by the researcher and then stored in database. The software package SPP 20.0 and Microsoft Excel software package are used for statistical analysis. The data collected from the questionnaire is described by frequencies and percentages, while the data collected from the interviews is transcribed, categorized and qualitatively analyzed.

13. Results

The results are as follow:

1. ICT Resources

DESCRIPTION: The available resources including electricity, computers, projectors or LCDs in your universities.

No	Universities	Yes	No	Minimum	Maximum	Medium
1	Kabul University	88%	12%	85.0%	89.0%	87.0%
2	Kabul Medical University	89%	11%			
3	Kabul Polytechnic University	86%	14%			
4	Shaheed Rabbani Education University	85%	15%			

Table 1 (Participant responses towards the existence of ICT resources)

The above table indicates that all universities have almost equal access to electronic resources.

The qualitative data also supports the above statistics. Majority of interview participants said they have access to internet in their offices. The classrooms are facilitated with projectors or LCDs and instructors use their personal laptops for delivering lectures. However, the classrooms are not connected to Internet and students have not access to it. If students need Internet connection, they must go to computer lab or library where limited computers have been connected to Internet. Each faculty has hundreds of students and the computers exist in their computer labs are not enough for them, they said.

2. Students Literacy Skills

DESCRIPTION: The usage of Computer, the Internet, and application programs.

No	Universities	A lot	Average	Limited	No	Minimum	Maximum	Medium
1	Kabul University	15%	50%	25%	10%	93.0%	91.0%	92.0%
2	Kabul Medical University	17%	43%	33%	7%			
3	Kabul Polytechnic University	13%	47%	31%	9%			
4	Shaheed Rabbani Education University	12%	51%	29%	8%			

Table 2 (Participant responses towards ICT literacy skills)

The above table shows that majority of students have the potential skills of how to use Computer, the Internet, and application programs.

The qualitative data also supports the above statistics. The instructors of computer science faculties and generally those who got their bachelor or master's degrees in foreign countries have better concept of ICT. These instructors prepare their lessons in power points and use ICT tools in their teaching. However, the elder instructors aged over 50 had lower concept of ICTs. They prefer using traditional teaching method with no involvements of ICTs. They need more motivation and training to prepare power points and use ICT in their teaching.

3. Interest In ICT Usage

DESCRIPTION: Interest rate of students in using ICTs during learning.

No	Universities	100%	50%	25%	0%	Minimum	Maximum	Median
1	Kabul University	61%	30%	5%	4%	95.0%	97.0%	96.0%
2	Kabul Medical University	60%	25%	10%	5%			
3	Kabul Polytechnic University	65%	28%	4%	3%			
4	Shaheed Rabbani Education University	64%	23%	9%	4%			

Table 3 (Participant responses towards ICT usage)

The above table shows that generally all students seem enthusiastic for using ICTs in learning process.

4. ICT Training

DESCRIPTION: Conducting trainings on how to use Internet and to find learning resources on the web.

No	Universities	Yes	No	Minimum	Maximum	Medium
1	Kabul University	64%	36%	61.0%	72.0%	67.0%
2	Kabul Medical University	61%	39%			
3	Kabul Polytechnic University	67%	33%			
4	Shaheed Rabbani Education University	72%	28%			

Table 4 (Participant responses towards holding ICT trainings)

The above table indicates that most students need training on how to use internet and to search online learning materials.

The qualitative data also supports the above statistics. The first group of interview participants said they know how to use simple ICT tools such as computer, power points, projectors and LCDs. However, they need training on how to use smart boards and manage their lessons on LMSs. Some of them also need training on how to record their lessons properly and use different software during teaching for classroom activities.

The second group of interview participants said they need training on basic stuff such as how to use application programs for teaching and learning, and how to prepare standard power points. Generally, these are elder faculty staff used to traditional teaching methods. The assumption is, if these faculty staffs have not well supported and trained they will not like to use ICTs in their teaching process, the instructors said.

5. E-Learning Concept

Description: What E-Learning is.

No	Universities	A lot	Average	Limited	No	Minimum	Maximum	Medium
1	Kabul University	7%	57%	32%	4%	89.0%	96.0%	93.0%
2	Kabul Medical University	11%	52%	29%	8%			
3	Kabul Polytechnic University	9%	55%	30%	6%			
4	Shaheed Rabbani Education University	13%	49%	27%	11%			

Table 5 (Participant responses towards concept of E-Learning)

The above table indicates that students have somehow concept-learning.

The qualitative data also supports the above statistics. A group of instructors replied they are familiar with the concept of E-Learning; they use computers, power points, projectors and LCDs in their teaching. They also record lectures through Camtasia and other screen recorders and hand them over to students. They use variety of open source LMS such as Moodle, Facebook group pages, Google drive and drop box for facilitating learning.

The next group of instructors said they have basic concept of E-Learning which means the combination of face to face method and ICTs usage during teaching.

6. Effective Education System

Description: The education system which is more efficient, fast, and cost effective.

No	Universities	F2F	DL	BL	Minimum	Maximum	Medium
1	Kabul University	25%	9%	66%	67.0%	80.0%	71.0%
2	Kabul Medical University	33	16%	51%			
3	Kabul Polytechnic University	20%	13%	67%			
4	Shaheed Rabbani Education University	33%	7%	60%			

Table 6 (Participant responses towards most effective education system)

The above table shows students' perspective about education system which is more efficient, fast, and cost effective. The result indicates that students prefer E-Learning system (in the form of blended and distance learning) in comparison to just face to face learning.

7. E- Learning Effectiveness

DESCRIPTION: E-Learning programs can fulfill students need.

No	Universities	A lot	Average	Limited	No	Minimum	Maximum	Medium
1	Kabul University	51%	33%	14%	2%	95.0%	98.0%	97.0%

2	Kabul Medical University	62%	27%	9%	2%
3	Kabul Polytechnic University	47%	32%	16%	5%
4	Shaheed Rabbani Education University	36%	50%	12%	2%

Table 7 (Participant responses towards E-Learning effectiveness)

The above table shows the perceptions of students about the effectiveness of E-Learning programs. The result indicates that E-Learning programs are effective and can fulfill the needs of students.

8. Students Readiness For E-Learning Programs

DESCRIPTION: Starting E-Learning programs in Kabul based public university.

No	Universities	A lot	Average	Limited	No	Minimum	Maximum	Medium
1	Kabul University	26%	39%	26%	9%	81.0%	96.0%	89.0%
2	Kabul Medical University	22%	45%	29%	6%			
3	Kabul Polytechnic University	16%	36%	29%	19%			
4	Shaheed Rabbani Education University	13%	30%	44%	13%			

Table 8 (Participant responses towards students readiness fore-learning programs)

The above table shows students' view on starting E-Learning programs. In general, students feel positive about starting E-Learning in the universities; however, some students feed doubted.

The qualitative data also supports the above statistics. Majority of instructors said they have already started e-learning in their classes. They use both face to face methods and ICTs during teaching and learning process.

14. Discussion

After processing and analyzing data from the field with respect to the introduction of e-learning programs in Kabul based public universities, the following results and findings have been founded:

The first point is that both instructors and students accept that basic ICT tools such as computers, projectors and LCDs are existed in the classrooms along with electricity. When both instructors and students were asked about having access to the Internet at Kabul based public universities, 83% instructors admitted that they have access to Internet in their offices; however, only 14% students said they have access to Internet in the university. The assumption is that only a low percentage of computer science faculties' students have access to Internet in computer labs of their faculties while the students of other faculties do not.

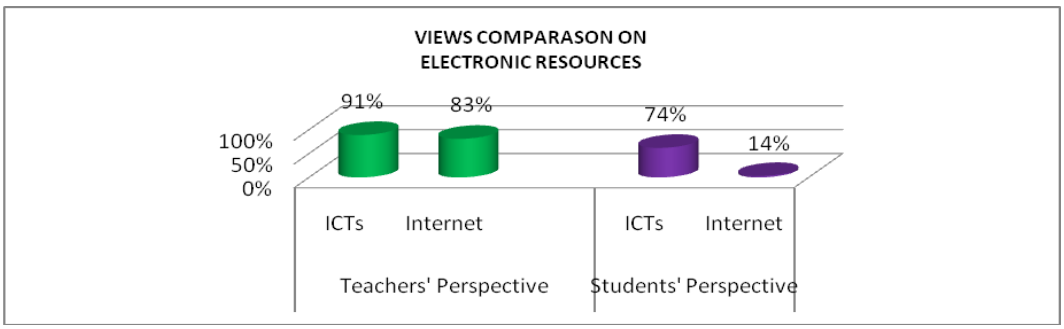

Figure 1 (Electronic Resources - comparison between instructors and students view)

The second point found in this research is that both instructors and students have high interest in using ICTs during teaching and learning. Instructors want to use computer, power points, projectors, LCDs during teaching and Internet for updating their teaching resources. Similarly, students want to use computers and internet for learning and completing projects and assignments.

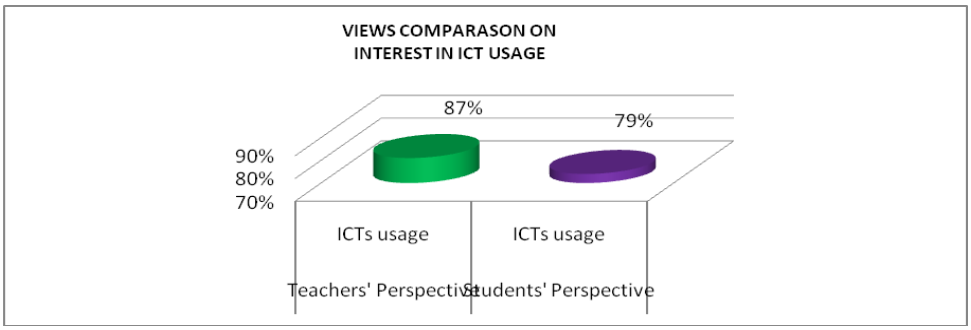

Figure 2 (Interest in ICT Usage - comparison between instructors and students view)

The third point found in this research is that 51% instructors need training on how to use ICT tools during teaching properly. They need training on how to use smart board, record their lessons through different software, and manage their lessons on LMSs. They also need training on how to find standard and academic journal and sources which help them in updating their teaching resources. Similarly, 73% students need trainings on how to use ICT tools properly during learning. They need trainings on how to use smart board, Internet and other ICT sources for learning and completing assignments and projects.

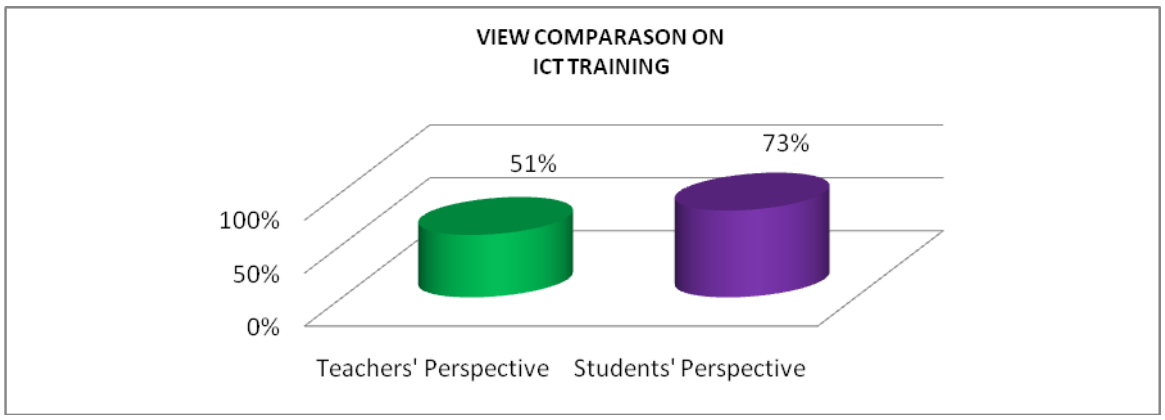

Figure 3 (ICT Training - comparison between instructors and students view)

The fourth point found in this research is that 75% instructors believe that e-learning (includes both blended and distance learning) system is more efficient, fast and cost effective compare to face to face and distance learning. Similarly, 69% students believe that e-learning system can help them acquiring twenty first century skills such as critical thinking, lifelong learning, creativity, team working, leadership, and so on.

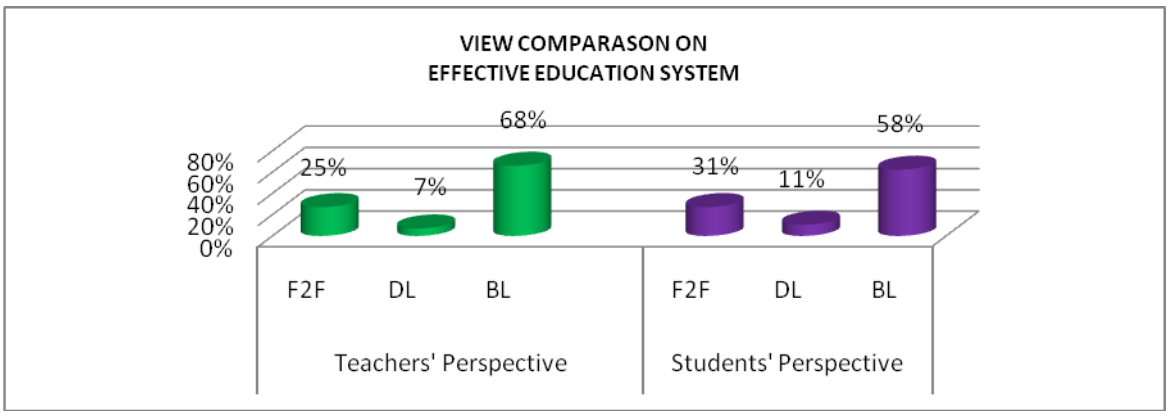

Figure 4 (Effective Education System - comparison between instructors and students view)

The last point found in this research is that instructors feel positive about starting e-learning in Kabul based public universities. They think the basic infrastructure for e-learning is somehow available in the university and can help them in their lessons. Similarly, students believe they can learn better with e-learning and university must encourage instructors to use ICTs during teaching. They feel positive about e-learning and think it will help them better understand learning materials.

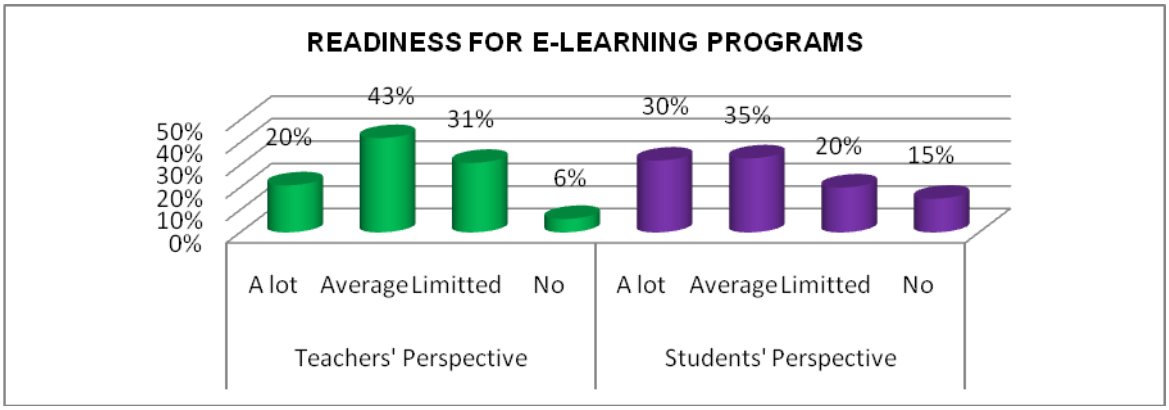

Figure 5 (Readiness - comparison between instructors and students view)

15. Conclusion

The research was conducted with respect to "The Introduction of E-Learning programs in Kabul based public universities" result the following conclusion:

1. Directors, instructors and students agreed that all classrooms are equipped with electricity and ICT tools such as computers, projectors and LCDs.
2. Instructors accepted that they have access to high speed (37 - 100mb/s) Internet in their offices. They can easily search different academic journals and websites to update their teaching resources.
3. Administrators, instructors and students admitted that students have little or no access to Internet in their classrooms. Only a small percentage of computer science faculties' students may have access to Internet in their faculty's computer labs.
4. Administrators, instructors, and students are highly interested in using ICT tools during teaching and learning. Majority of instructors use computer, power points, projectors and LCDs during their teaching. Similarly, students enjoy learning via the help of ICTs.
5. The results and finding of this research indicates that both instructors and students need training on how to use ICT tools properly during teaching and learning process. The instructors may not have any major problem using power points, projectors or LCDs but they need training on how to use smart boards, LMS, Moodle, and other MOOCs for managing their lessons and learning resources.
6. Administrators, instructors, and students believe that e-learning system is more efficient, fast and cost effective in comparison to tradition teaching system. E-Learning can help graduates to acquire twenty first century skills such as lifelong learning, critical thinking, leadership, communication, and team working.
7. Finally, all research participants believe that offline format of E-Learning also called blended learning were instructors prepare their lessons in PowerPoint, record lessons and sort learning materials and submit them to students in more traditional ways can be started. The online format of E-Learning where instructors and students directly have access to online tools and resources may take some time to start till the internet spread to all classrooms.

The e-learning program may face some challenges in the beginning but through the help of administrators, e-learning committee members and instructors the problems will be fixed and solved.

16. Recommendations

Taking the conclusion in mind, following suggestions are listed:

1. The e-learning committees in each university need to be strengthened and professionalized. It should split to two sub, technical, and professionals committees. The technical committee should be responsible for creating solid infrastructure for e-learning and local network for the whole university. The professional committee should be responsible for creating standard e-learning contents for courses. This committee should also provide decent training to instructors on how to prepare standard power points, record lessons via different software and usage of LMSs. They need to provide training to students on the usage of ICT and MOOCs.

Both technical and professional e-learning committees need to be in close contact with computer science faculties and ask them for help in advice in the above process.

2. The universities are not yet ready to start online E-Learning programs in all faculties of the universities due to various problems and challenges. For example, the lack of professional instructors who know how to carry out the program properly and most importantly lack of internet in classrooms of the university are major challenges.

The university may start offline form of e-learning where instructors prepare power points, learning resources and record lectures and place them in local network of the universities so that students have access to the materials inside the campuses.

3. The universities administrators may enrich classes of one specific department with modern ICT tools and internet which has more enthusiasm and qualification to start e-learning programs. In my opinion, any department of computer science faculties in each university has the potential to take steps in this regard. The instructors can prepare academic power points, record their lessons, find and download learning resources and use any type of MOOC

platform to place their teaching and learning resources there. Once this plan success in one department, it can be gradually spread to other departments.

4. Each faculty should have an equipped computer lab with decent internet so that students have access to learning resources. The instructors may not have this problem for now because they have access to internet in their offices.
5. The AfghanX platform will better help Kabul based public universities to start e-learning in next upcoming few years once the platform is completed and variety of courses both in Pashto and Dari languages have been uploaded. Hope is that till that universities will provide internet to all classes and each faculty will have at least one decent computer lab.
6. It is important that Kabul based public universities top order administrators in coordination with Ministry of Higher Education communicate with national and international donors and encourage them to assist the university in providing ICTs and well equipped computer labs to each department and faculty.

Acknowledgement

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