Obstacles to the Use of Information and Communication Technology (ICT) in Afghan Universities

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ABSTRACT

This study intended to investigate the level of ICT integration in Afghan universities and obstacles to its use and integration. The study is aimed at to explore how much the ICT has been integrated and how much effective it has been. The study examined the level of its effectiveness in Afghan universities. How effective it is for the students, teachers and administrative staff in the universities. For that, the primary question of the study was what are the obstacles to the integration and use of ICT in Afghan universities? We explored about the level of ICT integration, level of effectiveness and obstacles to the use of ICT.

The study collected data, through questionnaires, containing both open and close-ended questions to accumulate the diverse experiences of our respondents and explore those obstacles that might be missing in the existing literature. The data was collected from three different categories of people/stakeholders in the universities.

The study founded that ICT has not been fully integrated and installed in Afghan universities. These universities are still struggling to find electricity for their works. The level of ICT is comparatively high for administrative staff, followed by teachers and students. Students are at the worst position; they are the most alienated of all from the ICT. The obstacles found in the study are the lack of electricity, lack of expertise and lack of ICT infrastructure.

Keywords: Afghanistan, Uses of ICT, Higher Education in Afghanistan

INTRODUCTION

The Afghan government is responsible to provide higher education facilities to all Afghan people, Therefore, for higher education improvement and quality the government have to lay learning and teaching system on ICT in universities. However, there are still some challenges that some of universities are not willing to use ICT to play a vital role in the development of the country and Information and communication technology is the enhancement tools for learning and teaching process in higher education. This study attempts to examine and investigate the obstacles to the use and integration of ICT tools in Afghan universities.

According to Zulfiqar Ali Solangi (2018), that the recently Information and Communication Technology has changed the life of higher education in term of teaching and learning for both student and teachers, on other hand the fundamental instrument now a day in the economic world, which enhanced the competitiveness in all over the world and plays a critical role in the progress of education system and economy of a country. The Maria Concepcion Veg Hernandez (2018), presented that ICT has the significant effects on the environment of higher education because every student can learn in a different way related

to academic development and we can realize this effect when the universities widely use the information and communication technology.

This research addresses the factors influencing ICT using in higher education and the ways to overcome the obstacles to promote the use and acceptance of ICT in higher education in Afghanistan. According to Raquel Munoz-Miralles (2016), that ICT has a great influence on education and have great effect on learning and teaching process especially at universities, it is very useful tools for transferring a complete and effective knowledge to students who will become expert and professionals in the future and motivate the students for empowered tomorrow. As well as the main focus is the awareness about the rapid growth of ICT in the world. It is the view of Moursund (2015), that ICT is the combination of science and technology for processing information. ICT uses full range of hardware and software, telecommunication, internet and cell phones in the form of wired and wireless network. ICT is a helpful asset for solving different kinds of problems and have the ability to accomplished tasks in term of business, industry, government, education and many human endeavors. The importance of ICT in higher education is to enhance the teaching and learning practices and to develop the learning environment for students. The research of Chigona A. a. (2015), stated that the importance can be realized when instructors and pupils are motivated for the using of technology in higher education also they have mentioned the importance that ICT use in education encourage teaching and learning environment and develop their thinking more efficient than traditional teaching and learning practices.

According to Ministry of higher education (2015), after the United State Intervention in 2001 in Afghanistan the government of Afghanistan gave priority for education incensement and student's enrollment are increased as well in Afghanistan. Similarly, in this period the Ministry of education and Ministry of higher education provide many facilities for the improvement of higher education in Afghanistan. Besides such support they developed strategy for high quality of education. during the period of united states intervention, the government of Afghanistan and international community gave full consideration to provide the opportunity to access to education and to improve the quality of education on nationwide in Afghanistan. Some of the achievements in 2010 were the universities buildings, vocational trainings, expend the facility at universities, founded private universities in different cities in Afghanistan.

Highlighted by MCIT (2018), during the period of improving higher education system in Afghanistan, the government was provided sufficient resources to the higher educational institution for the efficient education but using of information and communication technology were faced with problems. Nevertheless, security problems and a decades of war in Afghanistan prevented ICT using in education. Because four decades of war in Afghanistan destroy most of the higher educational universities infrastructures, people were migrated to neighbor countries and a generation of children was kept away from education. As well as they were away from ICT and about last ten to fifteen years minimum of the ICT resources were gained from helping countries to Afghanistan. According to Ali Ahmad Mohammadi (2016), that lack of understanding about ICT resources as computer and relevant equipment's and how to benefit from it lead the people to face challenges.

The report of MCIT (2018), stated that Afghanistan is one of the south east country located in south Asia, and are among the poorest country in the world. Last four decades' war destroyed all the infrastructures in the country including higher educational universities which leads the country people toward illiteracy and was caused decreasing of student's enrollment in education universities but this number dramatically increased in the period of former presidency. However, student's enrolment continuously increased on average, 200,000 new students enrolled per year in higher education. During this period there were not any telecommunication infrastructures in Afghanistan. When the Islamic republic of Afghanistan began to

recover and the country was considered the undeveloped country in the world and later worked on appropriate strategies and polices for ICT progress in Afghanistan.

Problem Statement

The government of Afghanistan provide education facilities to all Afghan, and education system is primary school, secondary school and higher education which is university level. Therefore, for education improvement and quality education the government should use ICT in educational universities. Because ICT incorporate the improvements to the government health sectors, economic, education as well as play a vital role in the development of a country. Information and communication technology enhance best learning and teaching process in education universities. The use of ICT in education is crucial for the advancement of education both nationally and internationally, and this is especially true in Afghanistan. ICT using in education will increase the communication of teachers, students and other perspectives in term of education improvements. Research by Olena Budnyk (2020), suggests that the use of information and communication technology must be used effectively in educational universities to provide the facilities to learn in a better way and to promote the students learning environment. Because the use of ICT in education will maximize pedagogical practices for teaching and will maximize students learning practices as well the use of technology is an important aspect in educational universities for their improvements. This study will be conducted in Afghanistan by getting different viewpoint to find out why people are not accepting, up taking and not trying to diffuse the use of information and communication technology in higher education in Afghanistan. This research is important for Afghanistan higher education (universities) because it will give us the information about ICT effectiveness in learning and teaching process for high quality education, make teaching and learning process easy, and what obstacles have effect on ICT using in universities for learning and teaching process. So this research will help us to understand the usefulness of ICT in higher education and the obstacles which prevent the acceptance of ICT in Afghanistan universities as well as give the concept and ability that how can we address these challenges to implement ICT in Afghanistan higher education

Research Objectives

The research is intended to investigate the status of ICT uses in Afghan university and explore the hurdles and obstacles to its integration.

Research Question

This study intended to investigate the "What are the obstacles to the use of ICT in Afghan universities?".

Theoretical Framework

According to the technology acceptance model, a variety of factors affect users' and stakeholders' decisions regarding when and how to adopt new technology when it is provided to them. These elements include individual intents, behavioral intentions, attitude, and perceptions of the system's utility and usability, as well as organizational and supporting conditions. One important factor in determining whether a user would accept or reject a system is their attitude towards it.

The study of Lucky Oghenetega Urhiewhu (2015), highlighted that conceptual research framework that I want to use for my research implementation is Technology Acceptance Model (TAM) to show how the stakeholders and end users come to accept and use technology for their careers. One important factor in determining whether a user would accept or reject a system is their attitude towards it.

Figure 1 Research framework

The attitude of the user, in turn, was considered to be influenced by two major beliefs:

Perceived usefulness and perceived ease of use having a direct influence on perceived usefulness.

- **Perceived usefulness:** Perceived usefulness is a concept in higher education that measures how much members of the universities believe a certain technology or system will enhance their efficiency, productivity, and general performance in administrative and academic aspects of university. For example; students evaluate how these technologies impact their learning results, faculty members analyze whether these tools improve their efficacy as teachers.

- **Perceived ease-of-use:** Perceived ease of use in the context of higher education refers to people's subjective assessments of how straightforward and intuitive they regard ICT (information and communication technology) processes and tools to be during the teaching and learning process. It considers how simple it is for people to engage with, move around, and access various technological features. Adequate training programs and attentive support services have an impact on positive opinions.

- **External/internal obstacles:** Universities may encounter a number of internal and external obstacles to the adoption and integration of information and communication technology (ICT). These obstacles which can differ depending on university contexts, resources, and strategies, can affect how successfully ICT efforts are implemented. External obstacles are included financial constraint, policies challenges, technology infrastructure, while internal obstacles are lack of ICT skill and training, motivation for changing to ICT, lack of ICT infrastructure.

- **Attitude towards:** the attitude towards is the use of information and communication technology (ICT) is a major factor in determining how successful and effective technology integration is in the university as a whole. Administrators, teachers, students, and other stakeholders all work together to shape the general perception of ICT. Academic members (teachers) believes that ICT is the enabler for improving of teaching, research and administrative process, while students positive viewpoint shows that ICT is the integral part of leaning and researching life and administrative staff believes that ICT is important to simplify the procedures and proficiency advantages.

RESEARCH METHODOLOGY
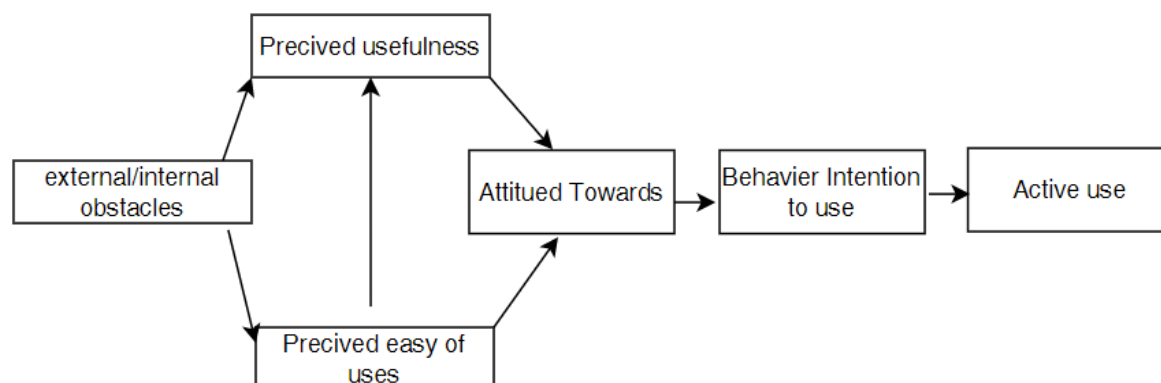
We applied qualitative research method to achieve our determined goals. We have created a questionnaires to implement a qualitative method to obtain viewpoints from all perspectives like faculty members

(teachers, students and researcher) and administrative staffs include IT department personal, and library staff about the obstacles and factors which impact the uses of ICT in higher education in Afghanistan and for quantitative research we interviewed the high authorities like chancellor of universities, dean of faculties, IT department directors, technical team and research committee included both governmental and private universities to know their viewpoints about ICT uses and obstacles in Afghan university because they are responsible to make decision.

The main study population included both governmental and private universities staff like faculty members, administrative staff, students, teachers, ICT department, researcher and library staff. The population of this research will be included teachers, students and administrative staff of both private and government universities of Afghanistan. Therefore, we selected 10 governmental universities and 7 private universities to distribute questionnaire and interviewed with high authorities and ICT related department about ICT obstacle for using in Afghan universities.

For qualitative research we distributed questionnaires to 300 individuals which are included 150 students, 100 teachers and 50 administrative staffs. For quantitative research we interviewed 20 high authority individuals from various governmental and private universities. They are included 5 chancellor of universities, 8 persons from IT department, 2 persons from dean of faculty, 3 persons from technical team and 2 persons from research committee. The collected data was thoroughly analysed thematically. Themes were developed according to the collected data and analyzed in a proper way.

LITERATURE REVIEW

According to views of Ayman (2008), that ICT using in higher education is the most compulsory aspect for the quality education and the use of ICT in teaching and learning environment. It will effect on the acceptance, up taking and diffusion of ICT on nationwide in Afghanistan.

This research shows obstacles influencing ICT using in a specific field higher education and will explore the ways through which we can understand and overcome these influencing obstacles, this research will also recommend some useful ways and techniques to understand and overcome the obstacles affecting ICT using in higher education in Afghanistan. As well as the focus will be on the diffusion of ICT among people to use it in higher education.

According to Diana Kozlova (2021), that the modern world ICT is the essential innovation, this ICT is the key of progress in various filed of a country such as education, financial, and administrations. The field of higher education was faced with many social, cultural, technical and economic problems since the beginning of 21st century. But this is ICT which eliminating most of these problems by providing some model, new ways and technique for the increase of learning and teaching.

According to Chan Ei Chew (2010), that the ICT using in higher education is not a simple work by accepting, this using will face various problems, such as obstacles which do not allow ICT using in term of higher education here in Afghanistan. Actually obstacle is defined as any objectives that make it difficult to achieve the desired and predefined goals. According to the view of Rogers (2017), that the modern information and communication technology world, ICT brought a revolution in term of higher education. These technologies have clear effect in telecommunication, education, business and in other infrastructure, but change is never easy. In order to explain ICT using process it is important to identify some importance of ICT and the criticism of ICT using concept in detail. As this research Ulka Toro (Gulavani) (2012), that explaining the ICT using to find out the obstacles so that people could try for the acceptance, up taking and diffusion of ICT in education and to make the people able to use the ICT based system and resources in

higher education. There are some challenges effecting ICT using process in education in literature review, some of these obstacles are limited technical support, lack of effective training, lack of teacher's compet7ency and budget constraints.

RESULTS:

Obstacles to the use of ICT in Afghan Universities

This section is about the hurdles and obstacles to the use of ICT in Afghan universities.

Table 1. 1 Technical difficulty while using ICT Tools

Options	Percent	Valid Percent	Cumulative Percent
A little	23.1	23.1	23.1
Completely	15.4	15.4	38.5
Moderately	30.8	30.8	69.2
Mostly	23.1	23.1	92.3
Not at all	7.6	7.6	100.0
Total	100.0	100.0	

While using it, administrative staff may counter problems in the use of ICT. So we asked them, *have you encountered any technical difficulties while using ICT tools in your educational institute?* Among them, 23.1% were of the view that they encounter problems "mostly", when they are at work. Among others, 15.4% said completely, every time, and 30.8% said they counter hurdles moderately. While 23.1% encounter problems a little and the rest, 7.6% never countered any problem in the use of ICT.

Table 1.1 Is there adequate ICT Training?

Options	Percent	Valid Percent	Cumulative Percent
A little	38.5	38.5	38.5
Completely	15.4	15.4	53.8
Moderately	23.1	23.1	76.9
Mostly	7.7	7.7	84.6
Not at all	15.3	15.3	100.0
Total	100.0	100.0	

To know about their awareness and training about ICT we asked them; *Do you feel adequately trained to use ICT tools in your administrative works?* Among the respondents, 15.4% do not feel adequately trained (this level for the teachers is 23.3%). Among the rest, 7.7% said mostly and 23.1% of them moderately feel themselves trained (the level of teachers is 33.3% and 16.7% respectively). The people who completely feel trained are 15.3% while the rest of them 38.5%, have little experience about the ICT.

Table 1.2 Is there sufficient resources and support for the use of ICT tools in Afghanistan?

Options	Percent	Valid Percent	Cumulative Percent
A little	36.5	36.5	46.2
Completely	15.4	15.4	61.5
Moderately	32.3	32.3	84.6
Mostly	7.9	7.9	92.3
Not at all	7.9	7.8	100.0

Total	100.0	100.0	

Providing sufficiently provided with the ICT, we asked, *Does your educational institute provide sufficient resources and support for the use of ICT tools in Afghanistan?* Among the respondents (students), only 7.9% said that they are not receiving assistance from the university. Among others the same percent (%) of people said that they are mostly, 15.4% completely, 32.3% moderately and the rest of them 36.5% provided with ICT tools in the university.

We asked our respondents about the hurdles that mostly hinder the use and availability of ICT in Afghan universities. Majority of them said "Lack of electricity, Lack of ICT resources, Lack of proper training, poverty and Lack of proper training". These were, according to the data, the main hurdles to the use of ICT in Afghan universities. Further, we asked *In addition to the above factors, do you think there are other obstacles? What are they?* The response was overwhelming. The respondents responded this way. "Girls don't have permission to use ICT. Secondly, poverty is baring people from its use. People have No experience in ICT learning process, no internet and no specialist or someone who could understand ICT.

Among others, they were of the view that the most common problem in institutions is electricity. If there is no electricity, the system does not work, the other obstacle is no internet electricity, and that makes them unable to use ICT.

Further we asked them to specifically identify obstacles to the use of ICT. The responded this way Afghanistan has seen many ways and hence from the perspective. Among the most recurring problems were Digital Divide: Unequal access due to economic or geographic disparities. Technophobia: Resistance to technology due to fear or complexity concerns. Digital Literacy: Lack of skills hindering effective ICT use. Privacy/Security Concerns: Fears regarding data security and privacy. Cost Constraints: High implementation costs, especially in smaller businesses or developing regions. Resistance to Change: Organizational culture and tech aversion. Regulatory Hurdles: Complex regulations impacting ICT implementation. Lack of Strategy: Absence of clear ICT plans leading to inefficiencies. Infrastructure Limitations: Insufficient tech infrastructure in underserved areas. Cultural/Social Factors: Societal norms affecting ICT acceptance. Vendor Dependence: Overreliance on proprietary tech. Ethical/Social Concerns: Worries about job loss or data ethics. I have already said that poverty, security and lack of electricity, Is that, we, our government and our teachers don't know by the benefit of ICT, if we will know, we will use it unavoidably, Lack of good trainer, no ICT tools, no electricity, no ICT resources, no internet electricity and also we do not have specialist workers then we asked them*;*

What do you think are the conceptual factors that hinder the application of ICT? Please explain. They responded as; Economic problem, poverty, security and lack of electricity, I think the ICT Psychological factor can improve the Afghan people talent and skill. Lack of Interest, Psychological factors significantly impact ICT application. They include resistance to change, fear of technology, perceived complexity, self-efficacy beliefs, privacy/security concerns, job displacement anxiety, and cognitive overload, lack of motivation, age-related factors, and social norms. This type of responses were more common from respondents.

Strategies like training, emphasizing benefits, addressing privacy, and fostering a supportive culture are key to overcoming these obstacles for successful ICT implementation. When we asked them, *What do you think are the Psychological factors that hinder the application of ICT? Please list the three factors that you consider to be the most important obstacles to the use of ICT in Afghan universities?* Majority of the respondents categorized lack of proper training, lack of experts and awareness.

Table 1.3 Problems in utilizing the existing tools of ICT in your university

Options	Percent	Valid Percent	Cumulative Percent
Maybe	18.8	18.8	37.5
No	33.7	33.7	62.5
Yes	47.5	47.5	100.0
Total	100.0	100.0	

Among the universities that have some sort of ICT, only 33.7% of them had no issue in utilization of ICT in their universities. Majority of them, 47.5% had problems in utilization of ICT. It means that majority of the respondents were of the view that they could not utilize the ICT in their universities. 18.8% claimed to that maybe there some sort of problems in utilization of ICT. If we put these result in the context of previous results, it means that only 56% had ICT, among them 37% have problems in using and utilizing ICT. When asked, *What specific technological challenges do Afghan universities face when attempting to implement and utilize ICT effectively?* Respondents opined that Afghan universities face several technological challenges when attempting to implement and utilize ICT effectively. Some of the specific challenges include: 1- Limited Infrastructure 2: Connectivity Issues 3: Power Supply 4: Limited Access to Devices 5: Digital Literacy 6: Cybersecurity Concerns 7: Funding Constraints.

Another respondents said that Education and training of experts in the field of technology, reducing internet costs, encouraging university professors to use technology and holding educational courses in the field of technology. Others were of the opinion that they face the issue of Lack of technology-equipped classrooms, internet and electricity, lack of technical tools, and luck of professional staff., No or less familiarity of the students with technology to best use and enhance their study level, beside of this a wholesome of lower and classic technology use, uneducated ICT teachers and stuff, lack of strategic plan for ICT integration at University.

In another question, they were asked: *How to elaborate all hurdles to the integration of ICT in Afghan universities. That might be cultural, technical, psychological, management, economic or political?* Our respondents were of the view that, all points you are mentioned in your questions should be integrated especially technical, management, economic and the teachers should be trained as well as ware them about the benefits of using of ICT at Universities by finding the financial supporters. If facilitated onward by somehow technology of the day it will bring an ease to the processes, it causes the lots of the technical, economic and political reasons. Lack of sufficient experience, not handing over the work to qualified workers, embezzlement in the purchase of technical equipment.

To know about the major hurdles to the administrative staff, we asked which *of the following do you think are the hurdles to the use of ICT in Afghan universities?* Majority of them categorized Poverty, Security, Lack of electricity, Lack of proper training, Lack of ICT resources. Then we asked; *In addition to the above factors, do you think there are other obstacles? What are they?* They opined as cultural diversity, lack of professional system in the administration, Inadequate field of better education, Lack of common understanding, negative motivation between administrative staff for using ICT and No training for administrative staff in all universities.

After that we asked: *What do you think are the conceptual factors that hinder the application of ICT? Please explain* they responded this way that here is no tools for using ICT but how to hinder the others. In general, several studies have identified a range of the following or similar factors as widespread barriers: lack of computers, lack of quality software, lack of time, technical problems, teachers' attitudes towards computers, poor funding, lack of teacher confidence, resistance to change, poor administrative.

We asked further: *What do you think are the psychological factors that hinder the application of ICT?* A respondent replied, In general, several studies have identified a range of the following or similar factors as widespread barriers: lack of computers, lack of quality software, lack of time, technical problems, teachers' attitudes towards computers, poor funding, lack of teacher confidence, resistance to change.

This section discussed about the obstacles to the uses and integration of ICT in Afghan universities, through a deep down analysis and understanding explored that why ICT has still not been integrated in Afghan universities, various questions asked form different point of view from the respondents to understand the complexity and diverse side of the area under investigation. Most of the respondents mentioned the issue of electricity and lack of awareness about ICT and its benefits during teaching and learning process as the main obstacles and expertise among other hurdles of the use and integration of ICT in Afghan universities. We also asked them about their suggestion that how these hurdles and obstacles should be eradicated to integrate ICT, hence we collected wide range overwhelmed and productive opinions about related issues.

Attitude towards the Use of ICT in Afghan University

The ICT tools are believed to be an improvement tool for learning when installed in the universities.

Table 1.4 the use of ICT and Learning and Communication Improvement (students)

Options	Percent	Valid Percent	Cumulative Percent
A little	16.7	16.7	26.7
Completely	28.3	28.3	50.0
Moderately	6.7	6.7	56.7
Mostly	45.0	45.0	96.7
Not at all	3.3	3.3	100.0
Total	100.0	100.0	

To know about the students' perception about the use of ICT, we asked them, do you think the use of ICT tools has improved your ability to collaborate with peers and teachers? Only 3.3% of the respondents were of the view that they improved "not at all". The rest of them responded as they are improved, "mostly", 45.0%, "moderately" 6.7% and completely, 28.3% and a "little" only 16.7%. This data highlights that except for the 3.3% all of them have been improved with the use of ICT in the universities. The data show that the use of ICT is really effective fruitful for the use of learning in the higher education.

Table 1.5 Importance of ICT in Management Process (Administrative staff)

Options	Percent	Valid Percent	Cumulative Percent
Agree	23.1	23.1	23.1
Strongly agree	76.9	76.9	100.0
Total	100.0	100.0	

After the importance, we asked about the importance of ICT in management. 23.1% of them said that they are agree about the ICT and 76.9% strongly agreed that ICT be used from management purposes because it is important.

What do you think ICT should be used for in Afghan Universities? The responded this way: For better learning of the lectures, for simple understandings of the concepts, for saving time. Give each other advice, if it has used, the students will be able to do everything in their own field. If this program comes to

Afghanistan or if people study it, then every Afghan can gain more knowledge and experience. Also, this program can standardize the life of every Afghan. To raise the level of people's knowledge.

Table 1.6 The Use of ICT and Academic Improvement (students)

Option	Percent	Valid Percent	Cumulative Percent
A little	20.0	20.0	30.0
Completely	28.3	28.3	53.3
Moderately	13.3	13.3	66.7
Mostly	35.1	35.1	96.7
Not at all	3.3	3.3	100.0
Total	100.0	100.0	

Academic improvement is always the goal of students in their educational life. They need to be facilitated from every way. To know about this we asked our respondents; *have you noticed any improvement in your academic performance as a student using ICT tools?* As the table shows, only 3.3%, again, are of the view that they did not improved due to the use of ICT. The rest of the respondents had positive view about the ICT as 35.1% have academically improved "mostly", 28.3% "completely" and 13.3% "moderately. Furthermore, only 20.0% of them have "a little" impact on their academic career. This data also shows that the use of ICT can improve the academic performance of the students.

Table 1.7 Will they recommend the Use of ICT to others? (Students)

Options	Percent	Valid Percent	Cumulative Percent
Agree	48.3	48.3	53.3
Neither agree Nor disagree	6.7	6.7	60.0
Strongly Agree	45.0	45.0	100.0
Total	100.0	100.0	

If the use of ICT is necessary, important for academic works and makes these works easy, we asked if they would recommend ICT to other students. Among the respondents, 45.0% of them strongly agreed and 48.0% agreed that they will recommend the ICT to other students. It means that about all of them want to recommend ICT to other students.

Table 1.8 The Wish to use ICT (students)

Option	Percent	Valid Percent	Cumulative Percent
May Be	10.0	10.0	10.0
Agree	30.0	30.0	40.0
Strongly agree	60.0	60.0	100.0
Total	100.0	100.0	

The willingness of the students improve their interest in ICT and thus in learning. To learn about their willingness we put a statement in front them if they want the ICT or not in their universities. The result is overwhelming as no one responded with no. All the respondents have positive view as 60.0% strongly agreed and recommended the use and availability of the ICT and the rest 30.0 % of them agreed. The result shows that all the Afghan students want ICT to be used in their universities.

Table 1.9 Importance of ICT (students)

Option	Percent	Valid Percent	Cumulative Percent
Agree	36.7	36.7	46.7
Strongly agree	63.3	63.3	100.0
Total	100.0	100.0	

About all of the students want ICT to be used in universities because of its importance and benefits in learning process. About the importance, no one gave negative response as 36.7% of the respondents agreed that the use of ICT is necessary and important. While a vast majority, 63.3% strongly agreed that ICT is necessary for the students in Universities.

Table 1.10 Using ICT helps improve the quality of higher education in Afghanistan

Option	Percent	Valid Percent	Cumulative Percent
Agree	30.8	30.8	30.8
Neither agree Nor disagree	7.7	7.7	38.5
Strongly agree	61.5	61.5	100.0
Total	100.0	100.0	

It is believed that ICT can improve the higher education. To know about that, we asked them to give their opinions. Among the respondents, 30.8% agreed and 61.5% strongly agreed that the use of ICT has improved higher education in Afghanistan.

Table 1.11 ICT and Work Efficiency

Option	Percent	Valid Percent	Cumulative Percent
Agree	46.2	46.2	46.2
Strongly Agree	46.2	46.2	92.3
Strongly disagree	7.6	7.6	100.0
Total	100.0	100.0	

The improvement of administrative works in important for education. We asked respondents to give opinion about the improvement of their work, 7.6% strongly agreed that it has improved their performance while 46.2% of the agreed. While 46.2% remained neutral.

Table 1.12 Afghan universities demands and government responsibilities ICT

options	Percent	Valid Percent	Cumulative Percent
Agree	23.1	23.1	23.1
Disagree	7.7	7.7	30.8
Neither agree nor Disagree	7.7	7.7	38.5
Strongly agree	38.5	38.5	76.9
Strongly disagree	23.0	23.0	100.0
Total	100.0	100.0	

To know about their demand and the responsibility of the Afghan government we asked our respondents about the responsibility of the government. 23.0% strongly agreed, 23.1% agreed and 7.7% disagreed with the statement. The data indicates that majority of them want Afghan government to provide resources of ICT to the universities.

Table 1.13 Applying ICT build my confidence and encourage me to do more (students)

Options	Percent	Valid Percent	Cumulative Percent
Agree	61.5	61.5	61.5
Strongly Agree	38.5	38.5	100.0
Total	100.0	100.0	

Applying ICT could build confidence and encourage people? The 61.5% of the respondents agreed with that and 38.5% strongly agreed. It means that all of them consider it that the use of ICT encouraged them facilitated them in their work.

The section of the chapter explored the attitudes of the respondents regarding the ICT uses in educational institutes and Afghan universities. The respondents' attitude was full of hope and enthusiasm about the use and possibility of ICT in the future. They (students, teachers and administrative staffs) were hoping and willing to use the ICT for changing the learning, teaching and management process and procedures in Afghan universities but they faced obstacles those should be eradicated.

Suggestion about ICT adoption in higher education

How can we enhance digital literacy among students and faculty to maximize the benefits of ICT? The recommendation of the students were necessary to enhance digital literacy and maximize the benefits of ICT. They responded this way. By providing ICT resources and awareness programs.

Encourage students and proper internet and electricity will be the most important. Enhancing digital literacy in educational institutions involves offering comprehensive training programs, integrating digital tools into curricula, implementing online learning platforms, providing faculty development opportunities, ensuring access to resources, conducting digital literacy assessments, promoting ethical use, fostering collaboration, nurturing a culture of continuous learning, offering support mechanisms, recognizing achievements, and forging industry partnerships. These strategies empower students and faculty with essential digital skills, enabling them to fully leverage ICT for teaching, learning, and research, while bridging the gap between academia and the evolving digital landscape. I think digital literacy is very important for everyone, by ICT people can change their life and can enhance their experience and knowledge. It is so valuable for student in university for literacy, Students should be taught in a standard manner in the university so that there is no problem for the student in the future. Support the office and get training to girls and Support them, To facilitate them with the ICT tools and bringing interest to the use of ICT, We must raise the level of knowledge, We need to improve our learning about ICT to inform everyone about the advantages of ICT, and improve internet ,electricity. We further asked

What do you think should be adopted to overcome the obstacles to the use of ICT in Afghan Universities? They responded; by providing ICT resources and awareness programs, find the easy way for using ICT in university. First of all, public awareness should be given to the students and then other work should be done, The fund must be allocated for the organizing of the ICT tools, Teachers must be trained to use ICT tools in their daily lectures instead of ancient learning methods, Electricity and Internet have to be stable, cheap and accessible to everyone. Tightening the conditions of the university transparency in the examination. To overcome ICT obstacles in Afghan universities, strategies include investing in infrastructure, launching digital literacy programs, integrating ICT into the curriculum, offering faculty training, optimizing online learning platforms, ensuring resource accessibility, conducting digital literacy assessments, providing ICT support, fostering partnerships, promoting ethical education, recognizing achievements, engaging with industry, monitoring and evaluating initiatives, advocating for government

support, and involving local communities. These comprehensive measures aim to create an enabling environment for effective ICT utilization in higher education, enhancing teaching, learning, and research capabilities. Further we asked for;

How to overcome all of the hurdles to the use of ICT in Afghan universities?

This was important question as to overcome the hurdles we had to as from the very stakeholders. They responded this way; Focus on more using ICT in all afghan universities. Government should support the universities to change traditional management system to digital management system. Make a plan to practice the ICT tools in Administrations. Overcoming hurdles to the use of ICT in Afghan universities involves addressing various challenges such as limited infrastructure, a lack of technical expertise, financial constraints, and cultural barriers. Here are some steps that can be taken to overcome these hurdles: Infrastructure development: Focus on improving internet connectivity, establishing computer labs, and providing necessary hardware and software resources. Technical training and capacity building: Offer training programs to faculty and staff to enhance their ICT skills and knowledge. Encourage the hiring of IT professionals to support the implementation and maintenance of ICT systems.

Financial support: Seek funding from government agencies, international organizations, and private sector partners to invest in ICT infrastructure, equipment, and training programs. Curriculum integration: Integrate ICT into the university curriculum to promote digital literacy and ensure students are prepared for the digital age. Encourage the development of ICT-related courses and programs. Collaboration and partnerships: Foster collaboration between universities, government agencies, and industry partners to share resources, expertise, and best practices. Engage with international organizations that specialize in ICT development and education. Cultural awareness and acceptance: Address cultural barriers that may hinder the adoption of ICT. Promote the benefits of ICT in education and its potential to enhance teaching and learning outcomes.

Then we asked about more suggestions. It was opined that ICTs in higher education are being used for developing course material; delivering content, sharing content; communication between learners, teachers and the outside world; creation and delivery of presentations and lectures; academic research; administrative support, student enrollment, etc. We asked them why ICT could not be integrated. They responded this way; However, I can provide you with some common reasons why ICT (Information and Communication Technology) may not be used efficiently at universities in general: Lack of ICT infrastructure: Insufficient or outdated hardware, software, and network infrastructure can hinder the efficient use of ICT at universities. Limited ICT training: Faculty and staff may lack the necessary training and skills to effectively utilize ICT tools and resources. Resistance to change: Some individuals may be resistant to adopting new technologies, resulting in underutilization of available ICT resources. Inadequate support and technical assistance: Insufficient technical support and assistance can make it difficult for users to resolve ICT-related issues or maximize the use of available resources. Limited budget: Budget constraints may limit the investment in ICT infrastructure, training, and support, thereby affecting its efficient usage.

To find specific information about the reasons for inefficient ICT usage at your university, I recommend contacting your university's IT department or conducting research on their official website. They can provide you with up-to-date information and insights specific to your university's ICT landscape. Further we asked them about the specific recommendations. They responded that eliminating poverty, providing security has been solving everyday challenges is necessary. One said, in my view, one solution to overcome the obstacles and improve the use of ICT in higher education is to focus on the following strategies: Infrastructure Improvement: Enhancing the technological infrastructure of educational institutions is

crucial. This includes ensuring high-speed internet connectivity, upgrading computer systems, and providing access to necessary software and hardware.

Faculty Training and Support: Offering comprehensive training programs for faculty members is essential to enabling them to effectively integrate ICT into their teaching practices. Providing ongoing support and resources for faculty to enhance their digital literacy skills will help them utilize ICT tools more efficiently. Student Training and Access: Ensuring that students have access to ICT tools and resources is vital. Institutions should provide training programs and resources to help students develop the digital skills necessary for their academic and professional success. Curriculum Integration: Integrating ICT into the curriculum across various disciplines can enhance student engagement and learning outcomes. Encouraging the use of online learning platforms, multimedia resources, and collaborative tools can promote active learning and critical thinking. Collaboration and Networking: Encouraging collaboration and networking among educational institutions can foster the exchange of best practices and resources. Establishing partnerships and networks can facilitate the sharing of experiences and successful strategies for implementing ICT in higher education. Further we ask;

Give me your detailed opinion about the use of ICT and its possible improvement in Afghan Universities? They said that By ICT we can do everything, ICT is one of the most important thing for everything like studying working. Of some country want to improve their country they have to use ICT, it's my great ambition to we will have technological system in our country. First of all, public awareness should be given to the students and then other work should be done. If we use ICT our mistake will be low then others. If you support so it will be improved, it need electricity and internet for using ICT in learning process. The use of ICT in Afghan universities presents opportunities for improving higher education, but challenges like limited infrastructure and digital literacy need to be addressed. To enhance ICT utilization, investments in infrastructure, digital literacy programs, curriculum integration, online learning platforms, resource accessibility, support services, ethical education, collaboration, government support, and community engagement are essential. These measures can unlock the potential of ICT in higher education, benefiting both students and the country's overall development. There is less use of ICT in Afghanistan Universities that worries reasons and need to be enhanced by facilitating electricity, ICT resources, proper training of use and so on. To provide everyone internet and teacher to teach the students the use of internet. We need learn about ICT, and some specialist persons teach us to inform about the advantage of ICT, and also need to improve internet, electricity. You can fulfill the dreams of every Afghans can reach their goals through this program. So this program is useful for us from every aspect. It has many advantages.

Table 1.13 The government should provide all the Afghan universities with ICT (teachers)

Option	Percent	Valid Percent	Cumulative Percent
Agree	35.0	35.0	40.0
Disagree	6.7	6.7	46.7
Strongly agree	58.3	58.3	100.0
Total	100.0	100.0	

The government responsibility is always to provide least education to its citizen. As the importance and want of the ICT has been highlighted, we asked students about the provision of ICT from the government. Among the respondents, only 6.7% disagreed about the governmental role in providing ICT. The rest of them, 58.3% of the responded strongly agreed and wanted government to provide ICT on regular basis to all universities in Afghanistan and 35.0% of them agreed (the administrative staff response was 23.1% and 76.9% respectively). This response is also positive as majority of them want government to provide ICT in all universities.

How the use of ICT could be integrated and its use improved in Afghan universities?

The question of improvement is always necessary if we want to solve these problems. For that matter respondents were asked to give their suggestions. They opined that, ICT could be integrated in Afghan universities through; building ICT centers and giving training to teachers and students, by making partnerships between students and teachers, Developing this section, and train professionals, encouraging trained people and reducing the costs of tools related to technology. ICT can be integrated when universities curriculum layout on ICT Improving a commonsense regarding this. The need for higher level marketing should be considered and related trainings should be given to students in universities.

When asked, *What is your suggestion for the university and government of the time?,* they opined that Education and training of experts in the field of technology, reducing internet costs, encouraging university professors to use technology and holding educational courses in the field of technology, Government should highly work and facilitate the universities as a whole and the universities is to provide their staff with desirable technological advances, Make a good ICT Center. Others said that my suggestion for the universities and government of Afghanistan would be to prioritize the following actions:

Policy and Funding Support: The government should develop policies and allocate sufficient funding to support the integration and improvement of ICT in universities. This will ensure a sustainable and long-term commitment to leveraging technology for educational advancement.

Infrastructure Development: Focus on building and upgrading ICT infrastructure in universities, including high-speed internet connectivity, computer labs, and relevant hardware and software resources. Adequate infrastructure is crucial for effective ICT implementation.

Capacity Building: Provide comprehensive training programs for faculty members, administrators, and technical staff to enhance their ICT skills and knowledge. This will enable them to effectively utilize technology in teaching, research, and administrative tasks my suggestion is that universities should layout their curriculum based on ICT, provide good environment for ICT adoption and the government should support the universities from different aspects such as political, economical. The government should meet the needs of the technological equipment of the universities, and the employees who have gained experience and know how to work, should support them financially so that they can stay in the same universities. They should decrease the prices of internet and increase educated workers for ICT, to make a peaceful place for all students and teachers, to make ICT update, to sure the implementation policy of ICT. We know that this is the time of technology and computers, the government should pay serious attention to it and the beneficial use of computers should be made public in all educational institutions.

DISCUSSION

This research primarily conducted in Afghanistan to investigate and explore the hurdles to the use and integration of ICT in Afghan universities and to provide some solutions to effectively use and integrated higher education in Afghanistan to improve the quality of teaching, learning and daily administrative tasks. The primary data collected from three different stakeholders which are included students, teachers and administrative staff at Afghan universities to explore their prospective towards the obstacles about ICT integration in universities.

The research has shown that the respondents from most of the universities use the ICT for the basic operation in administration part, while teachers and students use ICT rarely for teaching, learning and research work. Even some of them don't have the primary ICT devices like computer, internet connectivity

and other digital devices. In addition the collected information from all involved categories indicates some major obstacles such as lack of expertise and they do not support or motivate the students during learning and teaching process. Some of the respondents were agreed the lack of comprehensive ICT structure to facilitate efficient use of technology, data management, and communication within an organization as well as financial constraint, power source, no adequate plan/policies for adoption of ICT and lack of positive motivation caused unused the ICT in Afghan universities.

According to the collected data and respondents' suggestion, first of all there should be a positive motivation and inclusive architecture for ICT, supporting funds, trained and skillful staff, capacity building, adequate environment, power source and other ICT related requirements should be provided to overcome the obstacles and integrate ICT in Afghan universities.

CONCLUSION

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REFERENCES

Ali Ahmad. Mohammadi, A. K. (2016). *Achievement of the Ministry of Communication and Information Technology.* Ministry of Communication and Information Technology.

Ayman Abd Elmotti Suliman, D. Y. (2008). Barriers for Implementing ICT on Hihger Education in Underdeveloped Countries " Sudan: Case Study" . *International Conference on Information Resources Management (CONF-IRM).*

Chan Ei Chew, M. (2010). The Economic Impact of Information and communication technology (ICTs) on microenterprise in the context of Development. *The Electronic Journal on Information Systems in Developing Countries (EJISDC), 44* (4), 1-19.

Chigona, A. &. (2015). Educators' motivation on integration of ICTs inot pedagogy: Case of Disadvantaged areas. *South African Journal of Education, 34* (3), 01-08.

Kozlova, A., Akhmetgareeva, A., Khanova, A., Kudriavtsev, S., & Fenogenova, A. (2024, August). Transformer attention vs human attention in anaphora resolution. In *Proceedings of the Workshop on Cognitive Modeling and Computational Linguistics* (pp. 109-122).

Lucky OghenetegaUrhiewhu, a. E. (2015). Conceptual and Adoption of Technology Acceptance model in Digital Information Reseoruces Usage by Undergraduations: Implication to Higher InstituationsEducaitons in Delta and Edo of Nigeria. *Journal of Education and Practice , 6* (21), 82-92.

Maria Concepcion Veg Hernandez, C. P. (2018). Multivariate Characterization of university students using the ICT for learning. *An International Journal fo Computers and Education* .

MCIT. (2016). *Achievements of Ministry of Communications and Information Technology.* Kabul: Ministry of Communication and Information technology.

MCIT. (2018). *ICT Policy for Afghanistan : A digital adenda for development and social change.* Kabul, Afghanistan: Ministry of communication and Information Technology (MCIT).

Ministry of higher education. (2015, March). Retrieved February 2023, from https://mohe.gov.af/index.php/ps/guide

MoHE. (2020). *Report about Implementing Stragic Plan of Higher Education.* Kabul, Afghanistan: Ministry of Higher Education of Afghanistan.

Moursund, D. G. (2015). Introduction to information and communication technology in education . *Science Direct.*

OlenaBudnyk, M. K. (2020). Use of Infromation and Communication Technologies in The Inclusive Process of Educational Institutions. *Journal of VasylStefanykPrecarpathianNatinalUnivesity, 7* (1), 15-23.

UNESCO. (2013). *Information and Communication Technology (ICT) in Education in Five Arab States.* UNESCO Institute for Statistics.

Ulka Toro (Gulavani), a. M. (2012). ICT in Higher Education:Review of Literature from the Period 2004-2011. *International Journal of Innovation, Management and Technology, 3* (1), 20-23.

Viraiyan Teeroovengadum, N. H. (2017). Examining tehantencedents of ICT adoption in education using and Extended Technology Acceptance Model (TAM). *International Journal of Education and Development using Information and Commincation Technology (IJEDICT), 13* (3), 4-23.

Zulfiqar Ali Solangi, S. M. (2018). Factors affecting Successful Implementation of eLearning: study of Colleges and institutes Sector RCJ Saudi Arabia. *International Journal of Emeging Technologies in Learning (iJET), 13* (6), 223-230.