# Attitudes and Challenges Toward the Use of ICT Skills: an Assessment of ICT Skills Among University Lecturers and Students in Afghanistan

**Farhad Waseel, Fadhilah Yusof**

***Abstract:*** ***Information and communication technology (ICT) play a vital role in the sustainable development and economic growth of a country, as well as it supports the learning and teaching process approaches effectively. In Afghanistan, the level of student and lecturers' understanding of the ICT skills tools is almost at its preliminary stages. In addition, enough studies have not been conducted in the field of information and communication technologies. The purpose of the current descriptive study is to find out students' ICT skills and the challenge swhich students and lecturers encounter toward integrating ICT in education at public universities of Afghanistan and the lecturers, as well. The data regarding the usage of ICT skills in learning practices have been collected through two distinct questionnaires which involved 317 students and 84 lecturers from the four public universities in the capital of Afghanistan, Kabul. The data analysis was performed with SPSS software to describe and summarize the data statistically. The outcomes indicate that students and lecturers are not much skilled in ICT, other than word processing programs and multimedia presentations. Moreover, lack of ICT infrastructure for students and enough insufficient technical training as challenges toward are challenging the higher education institutions, as well as the gender differences in terms of ICT skills, are identified.The study recommends the government and higher education authorities in Afghanistan to take practical and immediate actions for enhancing technical training and providing ICT infrastructures to students and lecturers at these universities. Theseinfrastructures should be intended to support the students and lecturers for utilizing the ICT widely. It should enhance students' learning abilities.***

***Index Terms: ICT, Higher education, Kabul, Afghanistan.***

## I. INTRODUCTION

The industrial revolution in the world has passed its three stages, and now the phase of the 4th Industrial Revolution is happening. This revolution will be the fourth wave of technology-fuelled alteration which will bring immense changes in industries. The 4IR urges us to make innovations, increase the quality and efficiency of our products and create rapid industrial processes(Woodhead, 2017). It transforms economic and political systems and urges the policy-makers and authorities to take necessary actions on behalf. Moreover, these new technologies have the potential to transform our lives. Therefore, to effectively adjust people and industries for the 4IR, much more interdisciplinary teaching, research, and innovation is necessarily required(Xing & Marwala, 2017)

In order to learn essential skills and knowledge for the new world, it is necessary to bring changes on the way of teaching, thinking and learning approaches in the higher education institutes globally.Traditional education has played a useful role and contributed significantly to the current level of technological advancements. Universities and higher education institutes play a vital role to transform essential knowledge and shape future technology for innovation and future generations' education.

Many opportunities are available that could be used to support the fourth industrial revolution in higher education settings. Thus, to increase the quality education, the strength of traditional higher education should be combined by increasing trend of MOOCs as essential steps. On the other hand, "Global Identity" and "Education for You" embody aspects, if globally embraced, that would transform global higher education(Xing & Marwala, 2017).

The revolutions and innovations in education and knowledge that could be quickly learned by using information and communication technologies (ICT) are frequent. The educational institutions are highly motivated to use ICTs till to support the new generations and digital natives who live in this competitive world and cross over 21st-century challenges they face by the new industrial revolutions. The century where industries, media, and businesses are technology-fueled. ICT integration as pedagogical practice is becoming a sine qua non of higher education settings (Croteau, Venkatesh, Beaudry, & Rabah, 2015).

ICT skills play a vital role in developing a country. Skills and confidence with computer technologies are prerequisites for competitive employment market as well as a big challenge for the digital natives (Teck & Lai, 2011), (Idowu, Adagunodo, & Idowu, 2004).

Over the past two decades, the usage of technology and the internet in higher education has increased incredibly. The information and communication technology, especially the internet, web conferencing and video provided many opportunities for the students and lecturers to learn and teach easily, without any boundary (Buchanan, Sainter, & Saunders, 2013). The Blackboard, Desire-2- Learn and Moodle as the use of ICT tools allow faculties to provide a distance learning environment that will be an educational opportunity for students to learn effectively at a distance. (Al-Zaidiyeen, Mei, & Fook, 2008) sited in (Alshahri, 2015).

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In the meanwhile, today many schools and universities in Afghanistan have faced challenges in the use of ICT for learning and instruction. More than three decades of conflict in Afghanistan urged experienced and educated people to leave the country, and it challenged the higher education universities and organizations in Afghanistan (Roof, 2014). However, universities have reopened in Afghanistan and redevelopment of the education system has been started. But, unfortunately, these processes were not enough and mostly made beyond primary schools (Crane & Rerras, 2009).

Higher education was considered one of the top eight essential priorities in the Afghan National Development Strategy for 2008–2014. In addition, In National Higher Education Strategic Plan: 2010–2014, the ministry of higher education prioritized their goals on efforts to improve quality in education and prepare broad access of higher education for the Afghans.

There are now reported to be 153,314 students in universities and higher education institutes, which doubled between 2011 and 2014. The gender gap is still remarkable, but the number of female students tripled between 2008 and 2014, which shows one in five university students (MOHE, 2013; UNESCO, 2015).

Despite progress, the Crane and Rerras (2009) and Aturupane, Sofizada, and Shojo (2013) reported as Afganistan is one of the least developed countries with roughly 5 percent; lowest enrollment ratio of higher education in the world. The impact of sustaining war and instability in the last three decades and a low level of educational achievements among females are two considered reasons for the issues(Aturupane et al., 2013).

The claim for higher education in Afghanistan is four times greater than tertiary schools, so government officials request for more institutions. In the meanwhile, universities are not able to provide the experts as much skill as the labor market expectations are either quality or quantity, especially in management and technical majors(Prioritization and Implementation Plan, 2010). Simultaneously, improvement in providing qualified higher education, as well as expanding the number of higher education institutes have been focused by the Ministry of Higher Education(MOHE, 2010).

The next challenge which impacts the quality of higher education is the lack of qualified lecturers and traditional method of teaching in the universities. Computer and ICT literacy has a positive impact on career opportunities in the future as literacy had in previous centuries (Ajegbelen, 2016). Recent studies discovered that Internet, email, the emergence of web 2.0 technologies are commonly used ICTs in higher education settings (Conole, De Laat, Dillon, & Darby, 2008), (Liu, Kalk, Kinney, & Orr, 2010). Additionally, studies found that for the utilization of ICT in the classroom, it is necessary that lecturers should have positive perceptions towards ICT (Hew & Brush, 2007), (Keengwe, Onchwari, & Wachira, 2008).

Procurement, arrangement and running of ICTs and services for learning and instructionare highly depended on electricity. Studies have found that poor infrastructure and maintained equipment will challenge the integration of ICT for teaching and learning. According to the officials reports energy is mainly provided by hydropower. Only 33 percent of Afghans have access to electricity, and 70 percent in the capital have access to reliable 24-hour electricity, which reaches only one in three Afghans (Flak, 2012). (Flak, 2012).

Facilities and resources such as computers, the internet, and other productive tools are vital, to use ICT for teaching and learning. However, the question is, are the lecturers and students are ICT literate? How and by which amount the ICTs are being used in universities for the learning and teaching purposes? Lecturers and students facing challenges in order to use these infrastructures? To answer the questions, we have to go for the literature reviews in the articles. There are significant enough studies, and researches are done to the challenges on using ICT for teaching and learning in developed countries, and also most of developing countries have done researches on ICT skills and usage for educational purposes, especially in the university level. In the meanwhile, the researches on higher education are very limited due to security problems and instability. Literature review findings from scant researches disclose that health problems are more focused than education in Afghanistan (Kuek, Velasquez, Castellanos, Velasquez, & Nogales, 2014) whereas such publications are valuable and essential data sources for the developments and successful integration of ICT tools in education.

According to Thomson Reuters' Web of Science, Afghan scientists published 1.4 publications per one million populations in 2014, that shows the lowest publications in South Asia. However, the number of Afghan papers increased from 7 to 44 in 2005-2014, and most of the articles were published by foreign authors (Roof, 2014).

In this perspective, as an attempt In order to support and accompany government authorities and policymakers for improving the new generation learning skills, the ongoing research goal is to identify the ICT skills in Afghanistan. Consequently, attempting to find out the challenges and barriers that this nation faces in order to adapt themselves to the new technology-based world. This paper followed by the study methodology and findings are then discussed in light of current research and recommendations are being stated for the authorities and followed by the study limitations and future studies desires.

## II. OBJECTIVES AND RESEARCH QUESTIONS

The purpose of this research is to identify the computer and ICT skills of lecturers and students at public universities in Kabul, Afghanistan, as well as to determine the challenges toward using the ICT and the ICT usage for academic purposes.By this study, we need to find the responses to the following questions:

1. What ICT skills are confidently used by university lecturers and students in Afghanistan?
2. What are the challenges that prevent lecturers and students in Using ICT for teaching and learning?


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## III. METHODOLOGY

*Research Design*

The quantitative survey research method was used to investigate the ICT skills of Afghan university lecturers and students. The nominal and ordinal data has been collected, and data were analyzed as per each question and each section in respect of frequency and percentage. Tables and figures are created based on each research question or category.

*Participants*

The target groups were students and lecturers of the university in Afghanistan. Specifically, Kabul province, the capital of Afghanistan, has been chosen for the survey. Kabul has four public universities namely Kabul University, Kabul Medical University, Kabul Polytechnic University, and Shaheed Rabbani Education University. These four universities are the largest and oldest universities in Afghanistan and contain the large population of university students and lecturers.

In total, 84 completed questionnaires from lecturers and 316 from students in four public universities in Kabul, were found complete and acceptable. Most of the respondents were familiar with the internet, social networks and gathering information as most of them used the online version to answer the questions. The questionnaire was chosen for the reason that it allows the collection of large amount data in a short period time and it suits well with the conditions in Afghanistan.

*Instruments*

Specifically, two distinct validated questionnaires for lecturers and students were used to examine the lecturers and students' challenges preventing them from using ICT in education and confidence level of ICT competencies. Both validated questionnaires had been translated to the national languages of Afghanistan, Pashto, and Dari. After that, the questionnaires were distributed to four public universities in the capital of Afghanistan, Kabul. Also, the google form link was posted on social media and sent to the respondents via email.

The lecturers' questionnaire consisted of four main sections and demographic questions. Section one with four items is asked about access to the basic ICT infrastructures that universities provide as support to lecturers. The second section contains eight items considered about the lecturers' professional developments in information technology that they have attempted. The next section with six items is intended to identify the challenges which lecturers face in the use of ICT for teaching and learning purposes. The last section covers 14 items which indicate the confidence level of lecturers in the use of important ICT skills that are necessary for teaching and learning purposes.

The student's questionnaire consists of three sections. The first section with 17 items, is about demographic information and students' engagements with internet social networking. In addition, in section II, students were asked about the technologies that they use for their learning purposes at University. In total, nine items are asked by students in this section. The last section with ten items asks students about their confidence in using ICT tools.

## IV. RESULT AND ANALYSIS

The demographic data shows that most of the students (62%) in these universities are young which aged under 24 years old, as well as, nine percent of them are aged more than 30 years old. English as an international language is essential for the students in order to access most of the resources available on the internet. The 53.8 percent of students rated their English language skills as beginner, as well as the 27.5 percent of students have evaluated their skills as intermediate.

The data demonstrate that 92.1 percent of students owned their personal computer and 48.4 % use their computers up to 2 hours per day. However, the results show that 54.1 % of students have not taken any training courses in any aspect of computer use. In the meanwhile, 97.2 % of students have smartphones, and 69.2% use their smartphones more than 2 hours per day.

The Internet is the most commonly used ICT tool to communicate with the world and get access to all learning resources easily. The data confirms that 98 % of students have access to the internet. On the other hand, by answering a question, 71 % of them claim that smartphone devices have been used for internet browsing and only 7.9 % use Desktop/Laptop computers for browsing. The remaining 21.1% answered that they use both devices for purposes.The students frequently use social media networks such as Facebook, Viber, WhatsApp. The data declares that 87.6 % of students are engaged with the social networks up to 4 hours on a daily bases.

Table 1 shows that how much students are confident while they are using the ICT tools.

**Table 1: The familiarity of Students in Using the ICTs**

| | Not | A little | Somewhat | A lot |
|---|---|---|---|---|
| Create or maintain blogs or websites | 154 | 90 | 48 | 24 |
| | 48.7% | 28.5% | 15.2% | 7.6% |
| Create a database | 126 | 92 | 62 | 36 |
| | 39.9% | 29.1% | 19.6% | 11.4% |
| Edit digital photographs or other images | 53 | 94 | 104 | 65 |
| | 16.8% | 29.7% | 32.9% | 20.6% |
| Save electronic documents | 95 | 85 | 95 | 41 |
| | 30.1% | 26.9% | 30.1% | 13.0% |
| Create a multimedia presentation | 66 | 79 | 80 | 91 |
| | 20.9% | 25.0% | 25.3% | 28.8% |
| Activity on social networks | 21 | 58 | 121 | 116 |
| | 6.6% | 18.4% | 38.3% | 36.7% |
| Install a software | 36 | 63 | 103 | 114 |
| | 11.4% | 19.9% | 32.6% | 36.1% |
| Use spreadsheet Programmee | 75 | 93 | 84 | 64 |
| | 23.7% | 29.4% | 26.6% | 20.3% |
| Create or edit online questionnaire | 126 | 103 | 63 | 24 |
| | 39.9% | 32.6% | 19.9% | 7.6% |
| Produce text using a word processing program | 10 | 27 | 94 | 185 |
| | 3.2% | 8.5% | 29.7% | 58.5% |

Even though, the table 1, reveals that 58.5 percent of students are confident enough in using the word processing programs for producing text, 29.7% are somewhat confident, 36.1% are a lot confident in installing software, 32.6% are somewhat confident. However, the results in creating or editing online questionnaires, creating databases, maintaining blogs, saving electronic documents and using spreadsheet programs shows they are not confident at all, or they are confident a little which as university students the results are not satisfiable. Table 1, is illustrated as a chart in figure 1 in the aspect of frequency percentage.

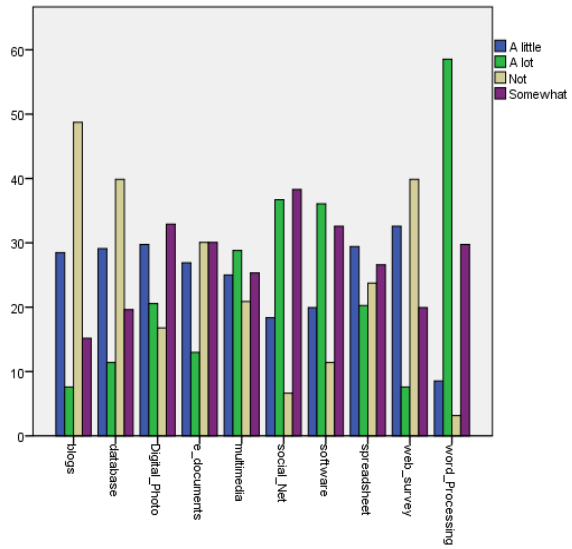


**Figure 1. The familiarity of Students in Using the ICTs**

Table 2 is in particular about the usage of ICT tools for educational purposes by students. It demonstrates how much students use ICTs for the works that are related to their universities and educational purposes. Overall results from Table 2 point out that ICT usage is low for educational purposes. However, the integration of Information and communication technologies and multimedia as a new method of teaching has brought radical influences in a traditional way of teaching and positively supports the pedagogical approaches to the objective of teaching and learning curriculum. When the ICT integration used correctly, studies declared interactive approaches being facilitated as well (Arkorful & Abaidoo, 2015)(McDougall & Boyle, 2004),(Watson, 2006), (Woollard, 2005).

More than 61.1% of respondents never used the university website to post their assignments or works. Only 12 respondents (3.8%) always used university website for posting their work, but according to MOHE and university officials, none of these universities provide e-learning platform to lecturers and students to upload their learning materials.

The decisive point is that 67.4 % of students always or often use the internet to collect information. Likewise, 44%, 33.3% of respondents use a computer without internet and computer with internet for educational purposes. The findings reveal that students may use fundamental ICT tools like office automation, writing a document or assignment, as well as the internet for collecting information as their activities that related to their universities and higher education institutes.

**Table 2: ICT Activities for Educational Purposes**

| | Never | Rarely | Sometimes | Often | Always |
|---|---|---|---|---|---|
| Chat online for university work | 71 | 106 | 66 | 54 | 17 |
| | 22.5% | 33.5% | 20.9% | 17.1% | 5.4% |
| Download/Upload/Browse materials from the university website | 85 | 71 | 66 | 52 | 40 |
| | 26.9% | 22.5% | 20.9% | 16.5% | 12.7% |
| Send or read email messages | 29 | 98 | 68 | 69 | 50 |
| | 9.2% | 31.0% | 21.5% | 21.8% | 15.8% |
| Participate in Online communities or forums related to the subjects you study | 90 | 81 | 52 | 56 | 36 |
| | 28.5% | 25.6% | 16.5% | 17.7% | 11.4% |
| Computer with no internet connection | 19 | 46 | 111 | 95 | 44 |
| | 6.0% | 14.6% | 35.1% | 30.1% | 13.9% |
| Use computers when working in groups | 68 | 73 | 77 | 62 | 36 |
| | 21.5% | 23.1% | 24.4% | 19.6% | 11.4% |
| Computer with internet connection | 47 | 71 | 93 | 71 | 34 |
| | 14.9% | 22.5% | 29.4% | 22.5% | 10.8% |
| Post your work on the university website | 193 | 56 | 34 | 20 | 12 |
| | 61.1% | 17.7% | 10.8% | 6.3% | 3.8% |
| Search the internet to collect information | 8 | 32 | 62 | 108 | 105 |
| | 2.5% | 10.1% | 19.6% | 34.2% | 33.2% |

In conclusion, the overall results are not satisfiable and indicate that ICTs are rarely used in universities for educational purposes. The results are also shown in Figure 2 in the aspect of frequency percentage.

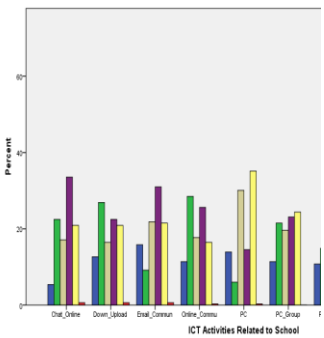


**Figure 2: ICT Activities for Educational Purposes Among Students**

In total there are 77654 students taught by 3159 lecturers in national higher education institutes (Aturupane et al., 2013). Another report form Pajwak Afghan news in 2016 declared that there are 5291 lecturers in all universities in Afghanistan. The data from lecturers illustrates that most of the lecturers (54.8%) are younger aged under 30 years old, and 39.3% are between 30 and 40 years old. Based on the reports from the Ministry of Higher Education in 2016, more than 782 lecturers who aged 66 and above were retired by a decree from President of Afghanistan. However, previously the Ministry were extending their retirement year by year. This announcement was another opportunity for the youngers and job seekers to join the Universities as lecturers.

On the other hand, the data confirms that still, a significant (42.9%) number of lecturers are still undergraduate. Only 10.7% (9 Respondents) are Ph.D. degree holders. Therefore, the result is a big challenge which influences the quality of higher education in Afghanistan. Few countries in all the world hire bachelor degree holders for teaching in universities. Even though, 66.7 percent of lecturers confirms that ICT trainingis available in their universities and only 33.3 % say no. In the meanwhile, but 59.5 % lecturers stated that have not taken training/workshops related to computer and information technology in the University, nor outside.

Table 3, illustrates the courses and training which lecturers have taken in order to increase their professional skills and personal knowledge. Correspondingly, the data reveals that more than 56% of the lecturers were not involved in undertaking training for professional developments. Less than 22 % of lecturers have taken advanced courses on necessary and commonly used ICT tools.

**Table 3: Training Taken for Lecturers' Professional Developments**

| Professional development | | No | Yes |
|---|---|---|---|
| Basic courses on office automation tools and internet | PDQ1 | 47 | 37 |
| | | 56.0 % | 44.0% |
| Advanced courses on Office automation programs, databases, virtual learning environment, etc. | PDQ2 | 66 | 18 |
| | | 78.6 % | 21.4% |
| Advanced courses on the usage of the internet such as creating blogs, video conferencing, e-learning platforms, etc. | PDQ3 | 67 | 17 |
| | | 79.8 % | 20.2% |
| Training on pedagogical usage of ICT in educational purposes | PDQ4 | 48 | 36 |
| | | 57.1 % | 42.9% |
| Joining online groups (Blogs, Twitter, LinkedIn, ResearchGate, etc.) for communicating with colleagues | PDQ5 | 50 | 34 |
| | | 59.5 % | 40.5% |

Table 4 reports how much the lecturers are familiar in using the information and communications technologies. The overall skills in ICTs are more than 50%. Lecturers are confident a lot (89.3%) in using word processing programs, 79.8% in using emails as well. Only the skills in for creating a database, create or edit online questionnaire, create and maintain blogs or websites and learning platforms for students' use are generally not satisfiable. However, still the overall skills are not enough for lecturers, and more efforts should be taken for improving the competency level. The results are represented in Figure 3.

Figure 4 illustrates that the infrastructures by public universities in Kabul, an aspect of the frequency percentage, are not enough provided.

**Table 4: The familiarity of Lecturers in Using the ICTs**

| ICT Skills | | A lot | Somewhat | A little | Not at All |
|---|---|---|---|---|---|
| Produce a text using a word processing Programme | ITQ1 | 75 | 7 | 1 | 1 |
| | | 89.3% | 8.3% | 1.2% | 1.2% |
| Use emails to communicate with others | ITQ2 | 67 | 8 | 6 | 3 |
| | | 79.8% | 9.5% | 7.1% | 3.6% |
| Edit text online containing internet links and images | ITQ3 | 46 | 24 | 7 | 7 |
| | | 54.8% | 28.6% | 8.3% | 8.3% |
| Create a database | ITQ4 | 28 | 15 | 19 | 22 |
| | | 33.3% | 17.9% | 22.6% | 26.2% |
| Edit a questionnaire online | ITQ5 | 34 | 18 | 12 | 20 |
| | | 40.5% | 21.4% | 14.3% | 23.8% |
| Organize computer files in folders and subfolders | ITQ6 | 69 | 8 | 5 | 2 |
| | | 82.1% | 9.5% | 6.0% | 2.4% |
| Use a spreadsheet | ITQ7 | 53 | 23 | 8 | 0 |
| | | 63.1% | 27.4% | 9.5% | 0.0% |
| Use a spreadsheet to plot a graph | ITQ8 | 47 | 19 | 12 | 6 |
| | | 56.0% | 22.6% | 14.3% | 7.1% |
| Create a presentation with simple animation functions | ITQ9 | 55 | 13 | 11 | 5 |
| | | 65.5% | 15.5% | 13.1% | 6.0% |
| Create and maintain blogs or websites | ITQ10 | 21 | 20 | 19 | 24 |
| | | 25.0% | 23.8% | 22.6% | 28.6% |
| Participate in | ITQ1 | 50 | 23 | 7 | 4 |

| | | | | | |
|---|---|---|---|---|---|
| social networks | 1 | 59.5% | 27.4% | 8.3% | 4.8% |
| Download and install software on a computer | ITQ12 | 57 | 12 | 7 | 8 |
| | | 67.9% | 14.3% | 8.3% | 9.5% |
| learning platforms for students to use | ITQ13 | 32 | 28 | 8 | 16 |
| | | 38.1% | 33.3% | 9.5% | 19.0% |
| Prepare materials to use with an interactive whiteboard | ITQ14 | 35 | 18 | 10 | 21 |
| | | 41.7% | 21.4% | 11.9% | 25.0% |

According to the results, 54.8 % of lecturers have no access to the interactive whiteboard in their university, only 28.6 % have permanent access. Computer laboratory as an essential place for practical exercises are only accessible to 15.5% lecturers, and 48.8 % lecturers have no access to such an environment to practice successfully.Access to computers is good at these universities, but 34.5 % of lecturers do not have access to computers connected with the internet. In 21st-Century Computer, Internet, Computer laboratory and interactive whiteboard are basic infrastructures that nowadays are provided even to the primary schools, but the results in case of Afghanistan is still not satiable in these top universities. These are influencing factors that inhibit the ICT integration in higher education of Afghanistan.

Also, Table 6 reports the challenges which lecturers face while using ICT in the classroom for teaching and learning. Thus, Lecturers argued that these tools are challenges toward using the ICT for teaching and learning in universities. The 77.4 % lecturers incriminated the insufficient numbers of computers, that somewhat or a lot caused not to use technologies for teaching and learning goals. Besides, 46.4% of the lecturers accept as real that technical support is not available for them in the universities. The reports on the challenges toward integrating the ICT are shown in figure 5, as well.

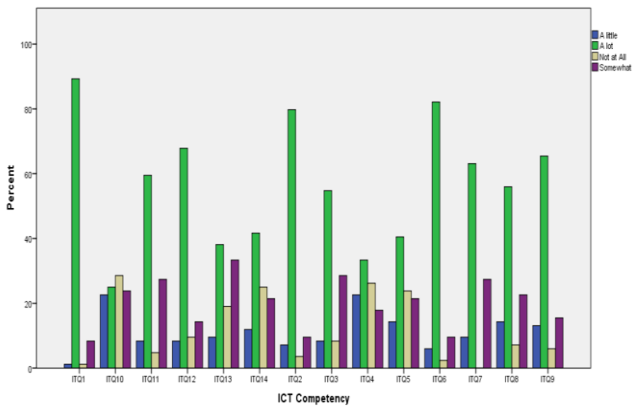


**Figure 3: The familiarity of Lecturers in Using the ICTs**

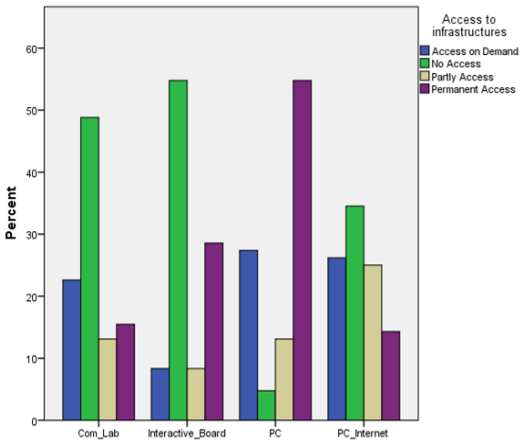


**Figure 4:Access to the Infrastructures by Lecturers**

**Table 6. Challenges Toward using ICT for Education**

| | | A lot | Some what | A little | Not at All |
|---|---|---|---|---|---|
| Insufficient number of PC | LAQ1 | 34 | 31 | 16 | 3 |
| | | 40.5 % | 36.9% | 19.0 % | 3.6% |
| Insufficient number of internet-connected computers | LAQ2 | 38 | 30 | 11 | 5 |
| | | 45.2 % | 35.7% | 13.1 % | 6.0% |
| Lack of adequate skills for teachers | LAQ3 | 25 | 34 | 20 | 5 |
| | | 29.8 % | 40.5% | 23.8 % | 6.0% |
| Insufficient technical support for teacher's | LAQ4 | 39 | 34 | 8 | 3 |
| | | 46.4 % | 40.5% | 9.5% | 3.6% |
| Lack of interest in teacher's | LAQ5 | 20 | 29 | 20 | 15 |
| | | 23.8 % | 34.5% | 23.8 % | 17.9 % |
| Uncertain influences of ICT usage for instruction | LAQ6 | 15 | 21 | 28 | 20 |
| | | 17.9 % | 25.0% | 33.3 % | 23.8 % |

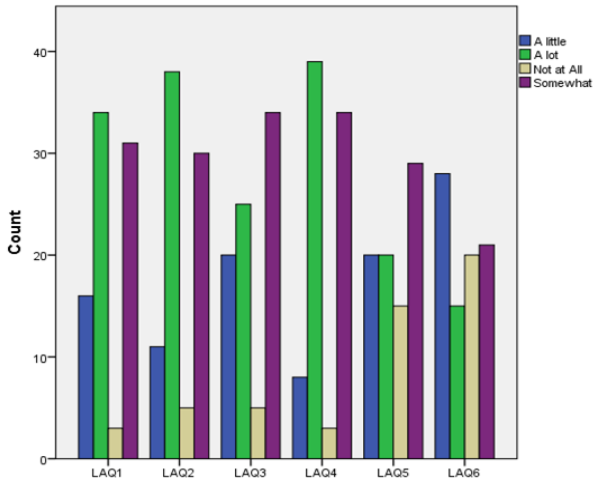


**Figure 5. Challenges Toward using ICT for Education**

## V. CONCLUSIONS

The discussion and recommendations were based on the collected data, Interviews with higher education employers, observations, Field visits, and documents reviews and analysis.

The study accomplishes that university students in Kabul were not sufficiently literate in the aspect of computer and ICTs. The university employers and MOHE authorities are advised to take immediate actions for the increment of the ICT skills of the students. The ICT skills are considered as the vital competencies for the 21st century, digital natives and fourth industrial revolution. The integration of ICT in teaching and learning provide many positive approaches, and pedagogical philosophies may be implemented as well(Croteau et al., 2015; McDougall & Boyle, 2004; Pazur Anicic, Divjak, & Arbanas, 2017; Roof, 2014).Furthermore, the percentage of ICT usage related to their university work; ICT for education by students are very low, and this confirms the previous studies results, that the low ICT literacy influence the achievements in higher education and in especial in 21st century, as well (Ajegbelen, 2016; Arkorful & Abaidoo, 2015; Byungura, Hansson, Muparasi, & Ruhinda, 2018; Croteau et al., 2015; De Wit, Heerwegh, & Verhoeven, 2014; García-Álvarez, Novo-Corti, & Varela-Candamio, 2018; Skryabin, Zhang, Liu, & Zhang, 2015)

The study suggests the government authorities, to increase the numbers of ICT training for students and provide internet access to the students. An acquaintance in using internet and email communication help students to use online resources and web pages in order to access and look through the vast amount of their preferred information. It will also support student-based and autonomous learning. The findings of this article are aligned with the studies by (Hakkarainen et al., 2001; Keykhaie et al., 2014; Taleb, 2012) that have ranked and prioritized the internet among ICT skills for students and teachers.

It also calls to equip the libraries with internet connected computers and IT departments to create e-learning platforms for their universities. Currently, only a few numbers of computers are available in the libraries at these largest public universities of Afghanistan, as well as e-learning platforms are not available for students for post their works, download materials and get access to the online recourses.These libraries will support students to get access to the informationsuperhighway.

According to this study, the lecturers in these universities are computer and ICT literate. Even though this is a good indication, but more efforts need to be done. The training should be provided for the lecturers, and their skills should be updated day by day. Many types of the research argue that if the instructors are not up-to-date in utilizing the ICT tools, so they will not have the capacity to practice it in their courses and it will affect the achievement of learning and teaching. Consequently, the students will be not prepared for the 21st-century aims, such asinnovations, technology, lifelong learning skills, and the skills for the fourth industrial revolutions. The 21st-century competitive world, in increasing and changing day by day, so the students are supposed to be engaged and updated in respect of the significant skills.

In order to integrate the ICT in teaching, the higher education institutes should provide adequate technical support to the lecturers. In the meanwhile, instructors should be aware of what fluctuations happening in the classes, so the effective methods of teaching and learning could be applied by using the information and communication technologies. Likewise, it will improve educational programs.

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