

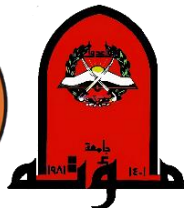


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**ICT4EDU:**  
**Enhancing ICT Competencies of Early Childhood Educators at  
HEIs in MENA Countries**

**ERASMUS+ PROGRAMME**  
**Project Number: 101083078**

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## Executive Summary

This document is a fulfilment to WP 2.3: Report on available facilities and resources at early childhood (EC) and related departments through a questionnaire (survey) for exploring the availability of ICT facilities and resources at EC departments and relevant academic programs.

The survey was designed to target the university staff members and departments heads at different universities from partners countries from Jordan, Egypt and Palestine.

The main purpose of this report is to summarize the current ICT available facilities and resources at EC departments as well as to define the current ICT needs and establish clear road map to enhance an adopted ICT facilities such as computer labs, specialized software, data shows, and interactive technologies in HEIs in partner countries.

The data were collected by circulating the survey online to the university staff and department heads and in Jordan, Egypt and Palestine. A total of 95 responses were collected from the survey. The survey data indicate that in order to improve the quality of ICT competencies among early childhood educators and students in partner countries, it is essential to enhanced ICT infrastructure and resources. This includes supporting educators with an up-to-date and advanced ICT tool, specialized laboratories, interactive technologies, and providing appropriate ICT infrastructure for teaching and learning.

## Background and Objectives

Early Childhood Education (ECE) is considered an important base for life-long learning and whole person development and the most important and vital of all stages in the proper development of a child whether is in the emotional, behavioral or cognitive domain. Early years of child life are crucial as it is of the utmost importance in the child's physical, emotional and intellectual development.

In line with the current digital era, teachers are required to integrate ICT in their daily teaching and replace their traditional methods with modern tools and facilities. Carrying out this project is

essential for undersetting practices, and impacting policies and curricula in school of educational sciences and for the integration of ICT teacher education to meet the requirements for digitally competent youth and children.

In this report, the surveys targets university staff and students. The survey's findings will be implemented within the project framework (ICT4EDU) such that to enhance ICT skills of early childhood educators at HEIs in partner countries. The primary objective of the surveys is to enhance the quality of ICT competencies of early childhood teacher and educators in higher education institutions in Jordan, Palestine, and Egypt in line with advanced EU practices, thereby enhancing the quality of education in pre-schools and primary schools in Jordan, Palestine, and Egypt.

This work package aims at scoping the current situation of ICT utilization in ECE in the beneficiary partners institutions including the extent of how the digital resources is represented in the study programs, as well as identifying the real competences that have to be provided to teachers and students and to verify the facilities of partners to develop the existing resources.

## Scope and Procedure

The major activity of Work Package 2 aims at scoping the current situation of ICT utilization in ECE in the beneficiary partners institutions including the extent of how the digital resources is represented in the study program. The project will commence in a scoping and needs analysis exercise to investigate the real competencies that have to be provided to teachers and students. In addition, to investigate the facilities of partners institutions to develop the existing resources. The scope and procedure of the work package can be summarized as per the following points.

- A survey on current situation of the level of ICT integration in early childhood education teaching and learning materials was be conducted at each partner institution and at each department level.
- Identifying the weakness and strengthen the curricula, verifying the courses offered, what to update and what courses needed. Taking into account the courses proposed by each

partner at the proposal preparation stage. This is to be carried out on regional level by all beneficiary partners.

- To examine the ICT usage habits and the self-assessed ICT competencies possessed by undergraduate students in EC teacher preparation programs as well as to investigate the level of competences and then needs of the teaching staff.
- Results in identifying the real ICT competencies that have to be provided to both target groups, and define the most competitive and high valued situation and trends in ICT as well as to figure out the new technologies and digital that should be integrated within the new curricula, this will assist in reviewing, modernizing and designing the new ICT-based teaching materials.
- Verifying partners facilities in order to build on existing resources available in partner universities, distribution of surveys with related parties inside each partners university and department level.
- Demonstrates the gap analysis, and the needs for capacity building, infrastructure, and human resources.

## Organization of Work Package - 2

The Team of Palestine Technical University – Kadoorie (PTUK) was defined as leader for the work package 2. The co-lead universities are Irbid National University (INU), Mutah University Ltd (MU), and Suez Canal University (SCU). The following questionnaires prepared according to the project description, approved by all partners, and maintained by PTUK team online.

1. In-depth survey on State of art of ICT in ECE (Curriculum Verification).
2. In-depth survey on Teachers and Students Digital Competences. This survey was divided into two different surveys for teachers and students.
3. In-depth survey on available facilities and resources at EC departments

Additionally

4. A complementary survey has been designed and distributed to targets school teachers and principals to investigate their needs in order to offer ICT skills and competences for university students and facility staff.

4. The surveys students was developed and maintained online by PTUK team with the help and approval of the co-leaders and all partners. The distribution of the surveys was carried out by the help of all partner institutions.

Teams from INU, MU, and SCU has translated the surveys from English into Arabic and maintained online by PTUK team. The partner universities in Jordan, Egypt and Palestine collected responses and filled surveys online. The analysis and reporting of the results from all surveys was completed by PTUK team, reviewed and approved by the co-leaders and all partners.

Table 1 Responsibilities distributions among partners

#	Name	Country	Survey on teachers and students ICT competencies
1	University of Jordan (JU)	Jordan	Coordination, approval, and collect responses from Jordan
2	Irbid National University (INU)	Jordan	Co-lead, approve, and collect responses from Jordan
3	Mutah University LTD (MU)	Jordan	Co-lead, approve, and collect responses from Jordan
4	Al-Azhar University (AZHU)	Egypt	Approve and collect responses from Egypt
5	Suez Canal University (SCU)	Egypt	Co-lead, approve, and collect responses from Egypt
6	Heliopolis University Association (HUSD)	Egypt	Approve and collect responses from Egypt
7	Palestine Technical University Kadoorie (PTUK)	Palestine	Lead, approve, maintain surveys responses online, and collect responses from Palestine
8	Palestine Technical College – Dier Elbalah (PTC)	Palestine	Approve and collect responses from Palestine
9	Al-Istiqlal University (PASS)	Palestine	Approve, and collect responses from Palestine

## Surveys Results

This survey will help us accurately identify the actual status of the facilities and resources of ICT for further enhancement. This survey is divided into the following sections:

Part A: Contact Information & University Profile.

Part B: ICT Literacy.

Part C: Availability and Access of ICT Tools Resources.

The sample properties for Part A and Part B are illustrated as per the following.

Table 2 Sample Properties - Part I

Variable	Level	Frequencies	Percentage
Choose your university	University of Jordan (JU)	10	10.5%
	Irbid National University (INU)	13	13.7%
	Mutah University LTD (MU)	8	8.4%
	Al-Azhar University (AZHU)	12	12.6%
	Suez Canal University (SCU)	6	6.3%
	Heliopolis University Association (HUSD)	21	22.1%
	Palestine Technical University Kadoorie (PTUK)	9	9.5%
	Palestine Technical College – Dier Elbalah (PTC)	2	2.1%
	Al-Istiqlal University (PASS)	14	14.7%
College/Faculty	Engineering	8	8.4%
	Applied Sciences	0	0.0%
	Business and Economics	14	14.7%
	Agricultural Science and Technology	3	3.2%
	Arts and Educational Sciences (Humanities)	29	30.5%
	Information Technology	10	10.5%
	Graduate Studies	5	5.3%
	Physical Education and Sport Sciences	1	1.1%
	Pharmacy	25	26.3%
	Others	8	8.4%
Gender	Male	52	54.7%
	Female	43	45.3%
	Prefer not to mention	0	0.0 %
Age	Less than 25	10	10.5%
	25 - Less than 30	15	15.8%
	30 - Less than 40	27	28.4%
	40 - Less than 50	25	26.3%
	50 - Less than 60	17	17.9%
	60 or above	1	1.1%
Total		95	100 %

Table 3 Sample Properties - Part II

Variable	Level	Frequencies	Percentage
Academic Level	Bachelor	25	26.3%
	Master	21	22.1%
	PhD	46	48.4%
	Other	3	3.2%
I am currently teaching in an ECE study programme	No	71	74.7%
	Yes	24	25.3%
Computer and ICT Literacy	Poor	1	1.1%
	Basic	4	4.2%
	Good	37	38.9%
	Excellent	53	55.8%
Computer Training	Non-formal (Self-Training)	53	55.8%
	Formal (Professional Development)	36	37.9%
	None	6	6.3%
Years of Computer Use	Less than one year	3	3.2%
	1 - Less than 2 years	5	5.3%
	2 - Less than 3 years	5	5.3%



	3 - Less than 4 years	4	4.2%
	4 years or above	78	82.1%
Access to Internet	Faculty Library	10	10.6%
	Faculty e-learning Centre	18	19.1%
	Home	64	68.1%
	Internet Café	2	2.1%
Frequency of Internet Use	Never	0	0.0%
	Once a week	4	4.2%
	Several times a week	10	10.5%
	Daily	81	85.3%
Use of Email	Never	0	0.0%
	Monthly	5	5.3%
	Weekly	24	25.3%
	Daily	66	69.5%
<b>Total</b>		95	100 %

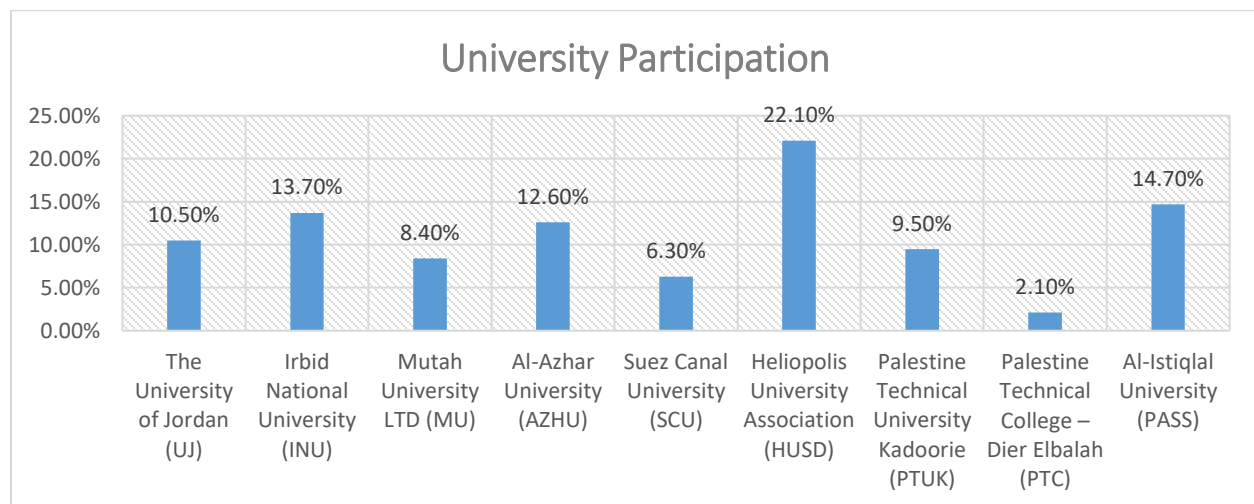


Figure 1. University participation

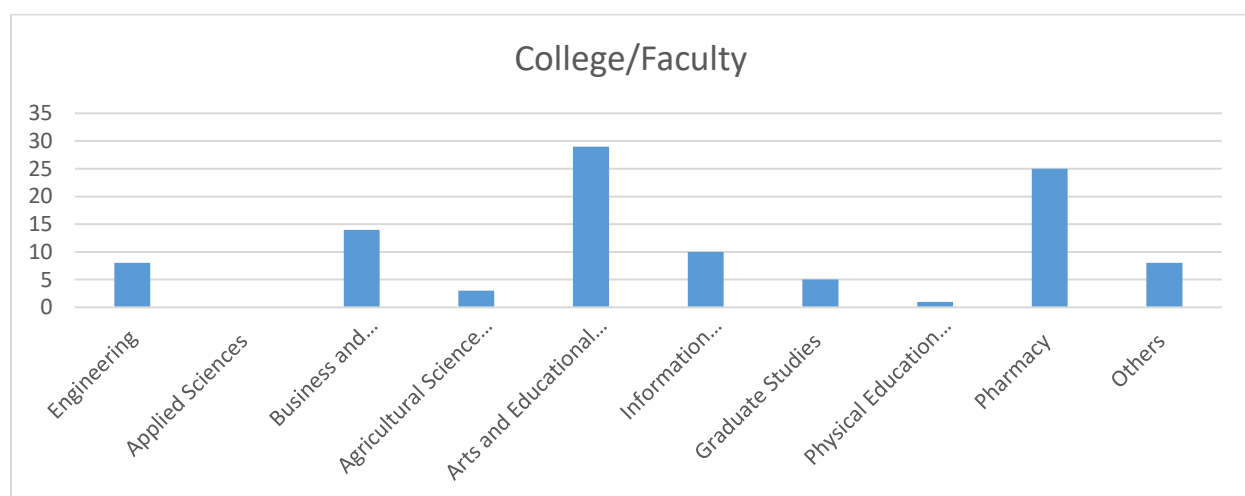


Figure 2. College/faculty participation

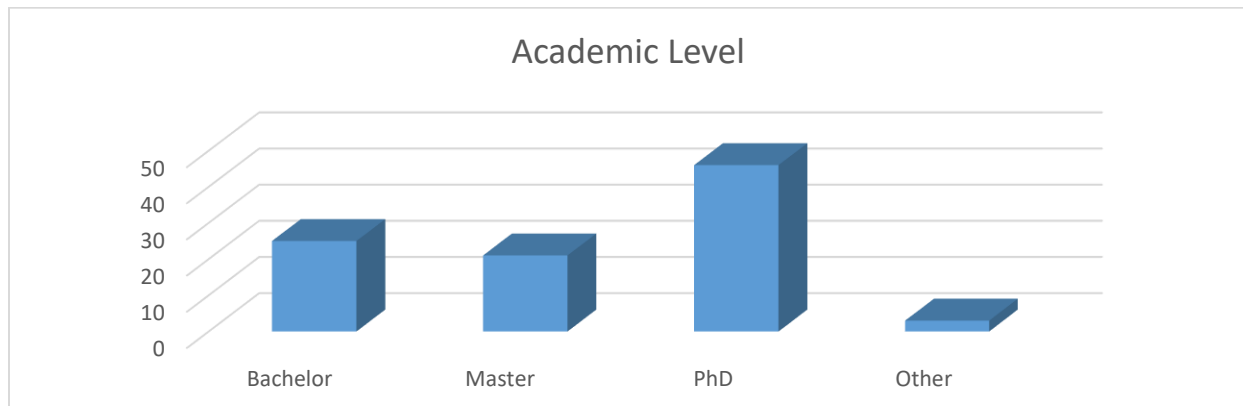


Figure 3. Academic level

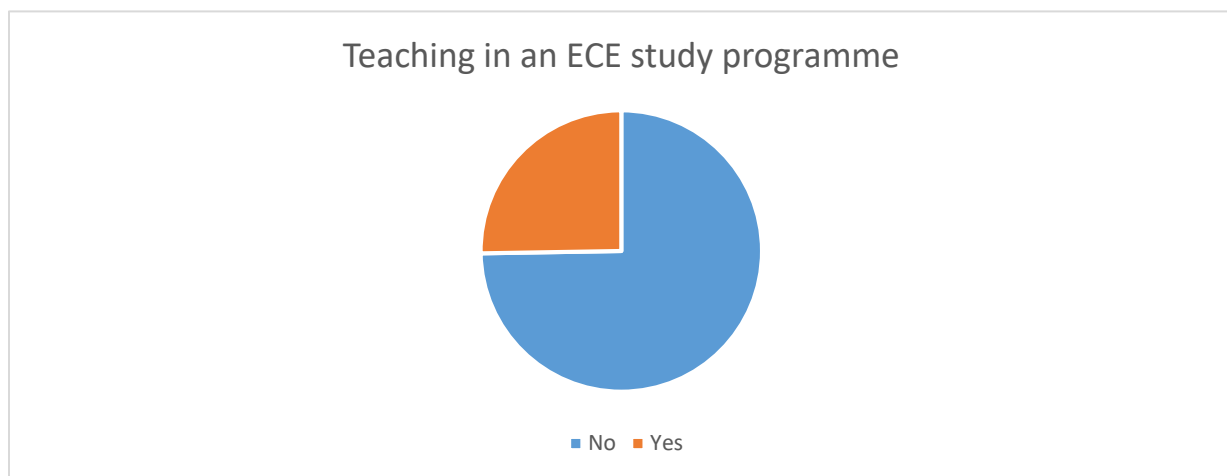


Figure 4. ECE program teaching

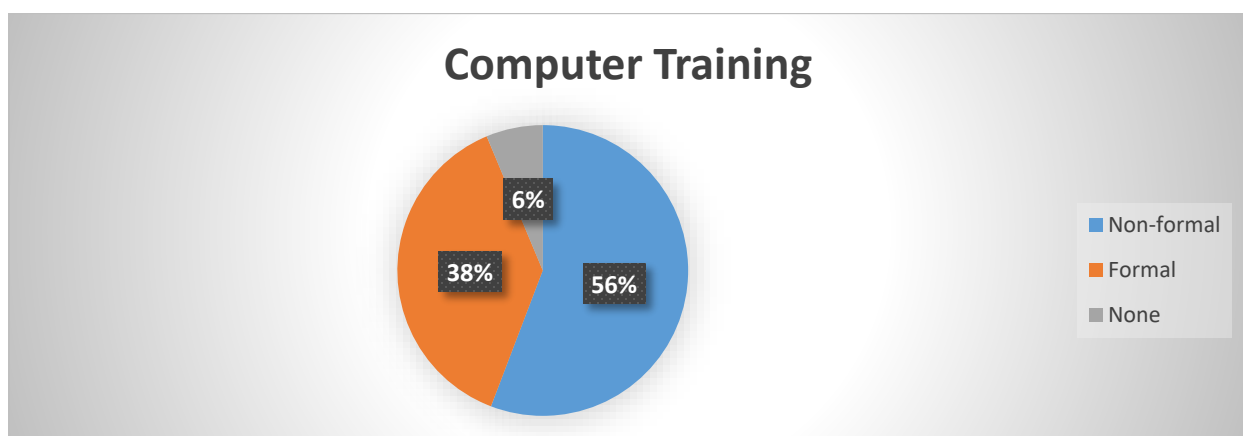


Figure 5. Computer training

The first part of the survey investigates the availability and access to ICT-based tools and resources for teaching and learning in EC and relevant departments. The received data indicate that there is clear shortage in ICT infrastructures. This includes 35% shortage in personal computers and ICT labs and 60% shortage in educational software and ebooks. Table 4 summaries the current availability and access to ICT tools and resources.

Table 4 Availability and access to ICT tools and resources – Part I

Variable	Frequencies	Percentage
Personal computers for ICT lab	62	65.3%
Video editing and creation software	24	25.3%
Data Show	50	52.6%
Interactive/smart board	45	47.4%
Communication equipment's/routers/switches	41	43.2%
Educational software and e-books	38	40.0%
Video conference system	25	26.3%

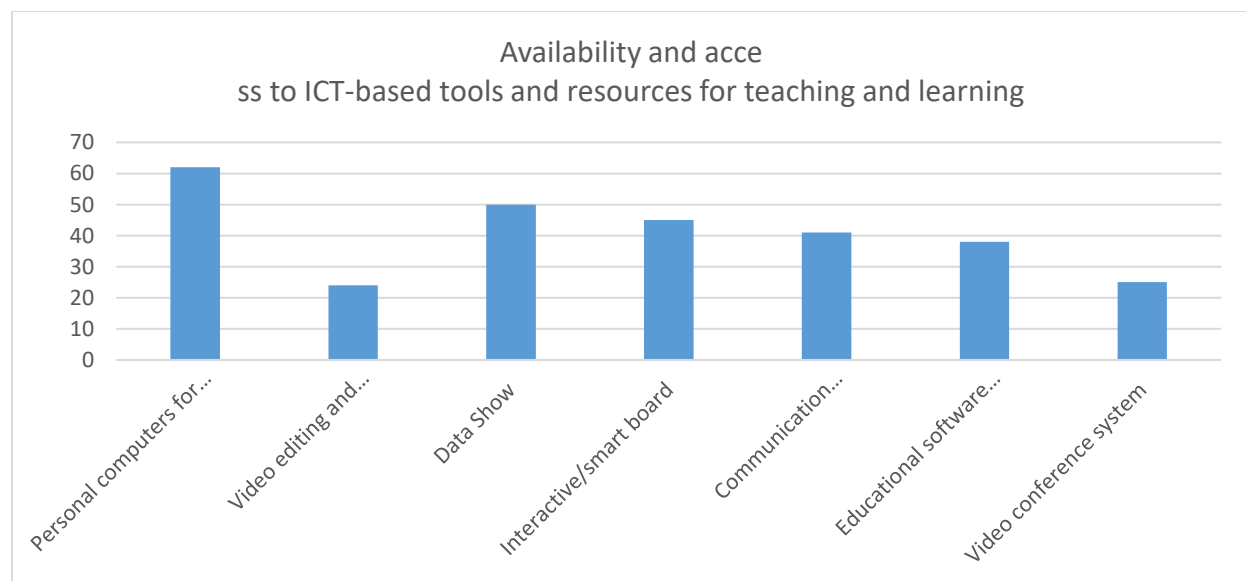


Figure 6. Availability and access to ICT-based tools and resources – part I

## Stability of the study tool

The stability was verified by calculating the stability Cronbach's Alpha equation. Cronbach's Alpha stability coefficient was calculated and this is evident from Table 5 below.

Table 5 Cronbach's Alpha stability values for the questionnaire items

Items	Number of Items	Cronbach's alpha values
Availability and access to ICT-based tools and resources for teaching and learning.	9	0.961

Table 6 Correction key to interpret the study paragraphs

Arithmetic Mean Period	Degree/Class
less than 1.8	Very low
1.8 - 2.59	Low
2.6 - 3.39	Medium
3.4 - 4.19	High
4.2 and above	Very High

The sample properties for Part C: Availability and access of ICT tools and resources are demonstrated in Table 7. The arithmetic means, standard deviations, and the degree were calculated for the validation of the availability and access of ICT tools and resources.

Table 7 Availability and access of ICT tools and resources – Part II

Availability and Access of ICT Tools and Resources	Arithmetic Mean	Standard Deviation	Degree
The availability of ICT tools in your institution for teaching and learning is sufficient.	2.86	1.251	Medium
At the labs, computers are well maintained.	2.87	1.265	Medium
WiFi is available on our campus.	3.24	1.343	Medium
I use the ICT facility with care, ensuring the safety of myself, others, and the equipment.	3.09	1.392	Medium
There are sufficient ICT resources and computer labs on my campus that support me in enhancing my ICT skills.	3.04	1.336	Medium
Facilities and resources of ICT available for use only for specific ICT courses.	2.69	1.337	Medium
The available ICT facilities encourage me to use e-resources for learning curricular subjects.	2.99	1.284	Medium
I have access to various tools and applications for learning and skill development at my university.	3.03	1.282	Medium
Our university has a defined policy that lets students use ICT services flexibly.	3.07	1.323	Medium
Overall	2.99	1.152	Medium

Table 7 indicates that the answers of the study sample towards the availability and access of ICT tools and resources at partner institutions are in a medium degree, and the most approved items are (WiFi is available on our campus.) and in a medium degree. The most unapproved items are

(Facilities and resources of ICT available for use only for specific ICT courses) and to medium degree. According to the received data and responses, it is indispensable to increase the number of computer machines and create well maintained and multipurpose computer laboratories equipped with suitable and modern ICT apparatuses, interactive data shows and educational software.

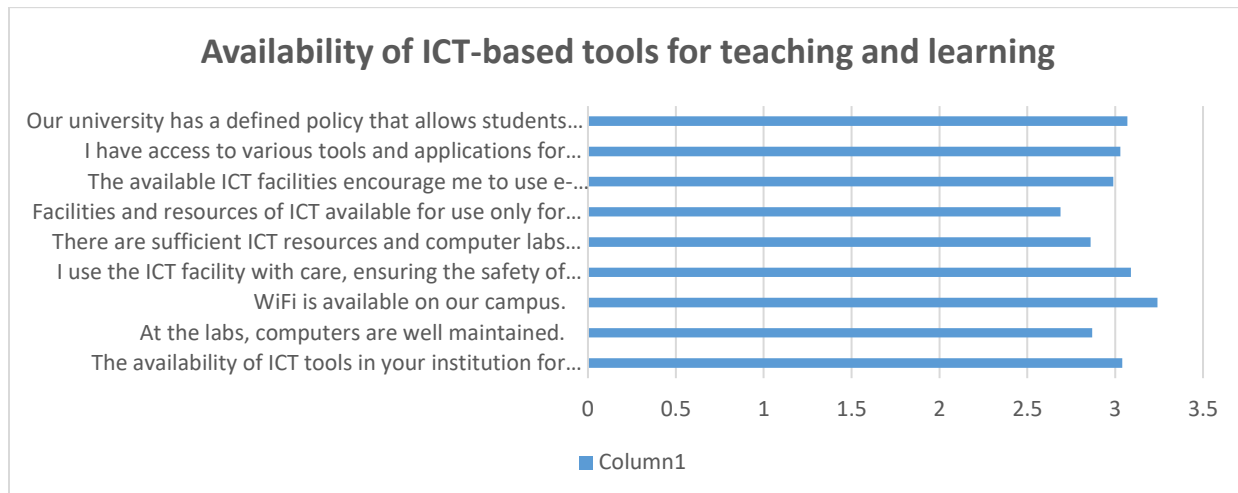


Figure 7. Availability and access to ICT-based tools and resources – part II

## Concluding Remarks and Recommendation

In general, the survey on the available facilities and resources at EC departments identified a range of issues as common barriers in using effective ICT in teaching and learning. As such, the lack of modern computers, lack of specialized educational software, technical problem-solving skills, teachers' attitudes towards computers use in teaching and learning, poor infrastructure, and the lack of teacher confidence toward using comprehensive ICT technologies in teaching and learning.

Based on the conducted survey, the implementation for ICT4EDU project should support the implementation of the following in order to improve the availability of ICT resources at EC and relevant education departments.

- 1- To establish specialized, well maintained multipurpose computer laboratories equipped with modern computer devices and educational software.

- 2- Increase the efficiency and speed of the internet in ECE and education departments.
- 3- Continuously develop and update the ICT infrastructures.
- 4- Maintain healthy and modern classrooms environments such that classrooms should be furnished with ICT tools and digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, smartboards, educational software, ebooks, video conference systems, and interactive teaching tools.

## References

Nannally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd ed.)*. New York: McGraw-Hill.