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## LEVEL OF ICT AVAILABILITY AND USER COMPETENCY IN POST-COVID ERA IN UGANDAN UNIVERSITIES

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### Abstract

In an effort to solve the problem of a halted educational system, during the covid-19 period and most importantly post-COVID era, Universities have embraced digital learning systems to sustain academic activities and pursuant to achieving educational goals globally. The study was a descriptive survey of purposive and convenient sampling technique of 200 respondents from two universities in Uganda. However, from the findings, universities lack sufficient human and other ICT resources to provide learners with up-to-date ICT knowledge, and learners were found to be relatively low in competency for ICT usage for learning purposes. It was recommended that Universities should make an effort to provide learners with adequate ICT knowledge to improve their digital competencies.

**Keywords:** ICT, post-COVID Era, availability of ICT, and users' competency

### 1. Introduction

COVID-19 is a menace that has bedeviled and ravaged the world in many ways (World Health Organisation. Coronavirus disease 2019; Mbonye & Sekamatte, 2018). It has retarded the economy, ravaged the health system, destroyed the hospitality business, and disrupted socio-political interaction, and now, inducing an unannounced shift away from the traditional classroom settings in the educational sector (The Independent Times, 2020). Sequel to the rising concerns about the spread of COVID-19 and the need to contain the virus, a growing number of tertiary institutions have shut down in regard to conventional classroom delivery (Ali, 2020). According to Byaruhanga (2020), this is courtesy of the fact that a major strategy in the containment of coronavirus was the imposition of lockdowns which automatically retrained people from partaking in social activities. This situation has particularly been a great challenge to the education system across the world. Globally, the educational sector has never witnessed such disruption in a colossal manner before (UNESCO, 2020a).

COVID-19 posed serious consequences for students by depriving them of their fundamental rights to education and exposing them to the risk of child labor, early marriage, exploitation, and poor academic abilities (Baytiyeh, 2018). As attested by UNESCO (2020a): Fakuade and Amoran (2022), more than 1.5 billion students globally which represents 87% of the global student population, were deprived of education. More worrisome is the threat of extended closures which paved the way for the need to rethink traditional teaching (UNESCO, 2020b).

Hence, digital learning is met with increasing attention as educational institutions alternatively resorted to various digital modalities and strategies to provide digital learning. This is connected with the benefits the practice is said to have on educational activities in times when pandemics could strike (Chang-Richards, Vergo & Seville, 2013). Prominent among these benefits is giving students some element of control over time, place, and pace (Florida Virtual School, 2020). This is courtesy of the fact that learning is no longer restricted to the school day or the school year, the walls of the classroom, the pedagogy used by the teacher, and the pace of an entire classroom of students respectively (Fakuade, 2021).

In the post COVID era, the term "technology" is an important issue in many fields including education. This is because technology has become the knowledge transfer highway in most countries (Albinism, 2006). Technology integration now days has gone through innovations and transferred our societies that totally changed the way people think, work and live (Grabe,2007). As part of this, universities and other educational institutions which are supposed to prepare students to like "a knowledge society" need to consider ICT integration in their curriculum (Gravimetric, Anastasia and Alla Seller, 2012).

Use of Information, Communication, and Technology (ICT) in universities refers to the use of computer-based communication that incorporates into daily classroom instructional process. In conjunction with preparing students for the current digital Era, university students are seen as the key playing in using ICT in their daily classrooms (Xoung, 2003). This is due to the capability of ICT in providing a dynamic and proactive teaching-learning environment (Arneth & Hatlevik, 2012; Jamiseon -Procter et al...2013). In addition, ICT provides help and complementary support for university students where it involves effective learning with the help of computers to serve the purpose of learning aids (Jorge et al...2003).

However, the availability of infrastructure and facilities of ICT are major factors that needed to be considered. A key factor in the use of ICT is sufficient computer labs and ICT equipment. This is to ensure that university students easily access ICT tools wherever needed (Hennessy, Ruthven, & Brindley, 2005). Lack of adequate ICT equipment and internet access is one of the key problems that universities specifically in developing countries are facing now. For example, a preliminary study in Uganda on the use of ICT in education indicated that some universities have computers but this could be limited to one computer in the office only. Other problems include; language barrier, users' timing, and lack of supervision as well as attitude. Thus, this study investigates the level of ICT availability and user competency in post covid era. A case study of some selected Uganda Universities.

## 2. Review of Literature

Competence is defined as the ability to combine and apply relevant attributes to particular tasks in particular contexts (Kadel, 2005). These attributes include high levels of knowledge, values, skills, personal dispositions, sensitivities, and capabilities, and the ability to put those combinations into practice in an appropriate way (Common Wealth Department of Educational Science and Training 2002). An ICT competency describes what students should know to be able to use technology or learn. Kirchner and Woperies (2003) highlighted some major ICT competencies learners require. These include competencies in; (i) making personal use of ICT; (ii) Mastery of a range of educational paradigms that make use of ICT; (iii) Making use of ICT as minds tools; (iv) Using ICT as a tool for learning.

Similarly, Marija and Palming (2007) classified ICT competencies into two: basic and educational ICT competence. In Uganda, higher educational institutions still have a long way to make optimal use of ICT in the learning process as these competencies of the majority of learners at this level is at the basic level (UNESCO, 2021). Lee (1997) found that a great number of students in teacher preparation programs were not equipped with basic computer operational skills. Ozoemele's (2010) study revealed that there is a low level of skillfulness in the use of ICT among students in Uganda Universities. Hence, two research question guiding the study are as follow:

- a) What is the level of ICT availability for students usage in Uganda Universities in the post-COVID era?
- b) What is the level of ICT user competency among Ugandan Universities students in the post-COVID era?

## 3. Materials and Methods

### Design

The research design used for the study was a descriptive survey. This is because it focuses on the large population and it gives an explanation of the state of affairs as they exist at present. According to Kothan, (2004) and Muganda (2009), the descriptive method was adopted since it helped to collect data from the population to get the description of perception, attitude, behavior, or values. The design also allowed the researcher to generate both numerical and descriptive data that were used in measuring the correlation coefficient between the variables.

### 3.1 Participants

The target population of this study was made up of university students at Kampala International University's main campus and Makerere University Kampala. A random sample of 200 students comprising 100 students from Kampala International University's main campus and 100 students from Makerere University Kampala was considered for this study. The data collection method which was used to collect the relevant data is questionnaires. Questionnaires are designed in a sample from which are easily understood. The study used a Likert scale questionnaire which was administered to some of the university students. The study also has one set of questionnaires that were constructed strategically to capture all the necessary information from all categories of respondents with respect to the theme of the study. In all, a total of 200 University students completed the questionnaires. The data from the questionnaires were analyzed using IBM SPSS descriptive statistics were elicited for each question.

#### 4. Results and Discussion

##### 4.1 Descriptive statistics of the respondents

This section presents the gender percentage of all the respondents.

DEMOGRAPHIC FACTORS	FREQUENCY	PERCENT (%)
<b>GENDER</b>		
<b>MALE</b>	92	46
<b>FEMALE</b>	108	54
<b>TOTAL</b>	200	100

The table indicated that 46% of respondents were male while 54% were female across sample schools. Research question one.

##### 4.2 What is the level of ICT availability for student usage in Uganda Universities in the post-COVID era?

**Table 2: level of ICT availability for students usage in Uganda Universities in the post-COVID ERA**

-	Strongly agree	Agree	Not Sure	Disagree	Strongly disagree	Mean	S.D	Decision
Have a sizable ICT lab and use ICT services	33 (33.0%)	32 (32.0%)	3 (3.0%)	18 (18.0%)	14 (14.0%)	3.52	1.46	Rejected
University provides a conducive environment for ICT use	14 (14.0%)	57 (57.0%)	9 (9.0%)	15 (15.0%)	5 (5.0%)	3.60	1.06	Rejected
University provides WIFI for students learning	30 (30.0%)	53 (53.0%)	9 (9.0%)	3 (3.0%)	5 (5.0%)	4.00	0.98	Accepted
University practices online studying and assessment	14 (14.0%)	64 (64.0%)	9 (9.0%)	7 (7.0%)	6 (6.0%)	3.73	0.99	Accepted
Something has been done to ensure smooth ICT use	20 (20.0%)	57 (57.0%)	7 (7.0%)	12 (12.0%)	4 (4.0%)	3.77	1.03	Accepted
<b>Grand mean</b>	<b>3.72</b>							<b>Accepted</b>

The presence of ICT labs and its services in the investigated Universities showed a low level of availability of ICT use amongst university students in the post-COVID era. The sampled Universities had small ICT labs compared to the users however respondents agreed that “University practices online studying and assessment 'M=3.73, which is above or equal to the ground mean. This indicates that the statement is accepted. WI-FI was evidenced in the sampled Universities revealing that something has been done to ensure smooth ICT use amongst university students. The respondents do use LMS for online learning. In

Makerere University Kampala an app in the name of MUELE is used for online assessments which were clear proof that the sampled Universities practiced online studying and assessment hence acceptance of the statements. The report showed that respondents disagreed with the following statements “Have an ICT lab and use ICT services”  $M=3.52$ , “University provides a conducive environment for ICT use”  $M=3.60$  are less than the grand mean. There was no conducive environment evidenced because the ICT labs in the sampled Universities were small for ICT usage due to the population. Given the interpretation above the availability of ICT use amongst university students in the post-COVID era was relatively not at a higher level and commensurate with the level of competence in ICT use amongst university students in the post-COVID era. This indirectly tells us that university management should be carefully focusing on the availability of ICT gadgets if at all success is to be achieved in the competence of ICT usage in the post-COVID era.

### Research question two

What is the level of ICT user competency among Ugandan University students in the post-COVID era?

**Table 3: The level of ICT user competency among Ugandan University students in the post-COVID era**

Items	Strongly agree	Agree	Not Sure	Disagree	Strongly disagree	Mean	S.D	Decision
Have an ICT gadget used for virtual learning	34 (34.0%)	47 (47.0%)	1 (1.0%)	14 (14.0%)	4 (4.0%)	3.93	1.13	Accepted
Use ICT in learning at the university	31 (31.0%)	44 (44.0%)	8 (8.0%)	6 (6.0%)	11 (11.0%)	2.98	1.48	Rejected
Use ICT in doing an examination	36 (36.0%)	35 (35.0%)		3 (3.0%)	26 (26.0%)	3.52	1.61	Accepted
Use other resources rather than ICT for learning	11 (11.0%)	67 (67.0%)		13 (13.0%)	9 (9.0%)	3.58	1.13	Accepted
Have the knowledge to use ICT in learning	13 (13.0%)	55 (55.0%)		16 (16.0%)	16 (16.0%)	3.33	1.33	Rejected
<b>Grand mean</b>	<b>3.47</b>							<b>Accepted</b>

The respondents agreed on the following statements, “Have an ICT gadget used for virtual learning”  $M=3.98$ , “Use of ICT in doing examinations”  $M=3.52$ , “Use of other resources rather than ICT for learning”  $M=3.58$ , however the report, on the other hand, showed that the respondents did not agree with the statements, “use of ICT in learning at the university”  $M=2.98$ , “have the knowledge to use ICT”  $M=1.33$ . The respondents agreed that all university students have an ICT gadget  $M=3.47$ . The respondents were seen with smartphones and laptops which are used mostly for social engagement, connectivity, and mostly for information. In the sampled Universities specifically Kampala International University, students were used to mobile phones both for social engagement and for other purposes. However, the report also indicated that respondents are much more preferred to use other resources, such as print text or library than ICT gadgets for learning purposes. This clearly shows that participants have a relatively low level of users competency in ICT for learning purposes during post covid- 19 era.

## 5. Conclusion and Recommendations

After carrying out the study, it can be seen that despite the fact that university students have access to ICT gadgets yet the level of their ICT competency is still very low. The participant's ICT competence is still insufficient to meet the current educational demand of the post-covid period. The student's competence level is more on using ICT gadgets such as smartphones for social engagement and connectivity rather than learning purposes. Furthermore, the study also revealed that universities are limited in terms of ICT infrastructure, this could also influence users' competency level in ICT for learning in Uganda universities. To improve this, the study recommends that Universities should find ways of providing an adequate ICT-based learning environment so that students or users become familiar with and excellent at using ICT hence improving learners' learning outcomes. More so, deliberate efforts should be made to improve the conducive environment for ICT use such as the provision of suitably spaced ICT labs to accommodate at least a bigger number of users and stable networks, etc. to promote smooth ICT services uptake.

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