

University Students' Perception and Satisfaction with Online Formative Assessment: A Case of University of Kabianga, Kenya

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Abstract

Online assessment is an evaluation of a person's abilities, behaviors, and characteristics conducted over the Internet by use of available web technologies such as Learning Management Systems (LMS). Online assessments support a variety of question types and provide tailored feedback useful in improving learning and academic achievement of the learners. Online teaching and assessment had not been popular in some parts of the world, prior the COVID-19 pandemic. However with the pandemic, learning was taken online necessitating the need to make a move towards the computerization of assessment. In Kenya, this was done in a hurry without training learners on how to handle both online learning and assessment. As a result many students were apprehensive of these processes and were resisting the shift. This study provides University of Kabianga second year students' perspective on formative online assessment. Study was based on the Constructivist Theory of learning which holds that, learners construct knowledge and learn best when engaged in learning experiences rather than passively receiving information. Only an experience can facilitate students to construct their own knowledge. Students in this study were exposed to online assessment for the first time and their perception and satisfaction was given in a feedback survey tool emended in the LMS. Analysis of students' feedback indicated that they were satisfied and preferred online assessment to the face-to-face written assessments.

Keywords: Online Assessment, Perception, Formative Assessment

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1. Introduction

Assessment refers to a related series of measures used to determine a complex attribute of an individual or group of individuals (Brown, 1990). This involves gathering and interpreting information about student level of attainment of learning goals.

Assessment is important to the teacher as it reinforce the efficacy of teaching and learning. It further enables the teacher to check for understanding during a lesson. The teacher can determine students' level of achievement and provide them with feedback on their strengths and weaknesses. In addition, for students who didn't master the topic or skill, teachers can use data from the assessment to create a plan for remediation. To the students assessment is equally important as students who are experiencing difficulties in learning may benefit from the administration of a diagnostic test, which will be able to detect learning difficulties.

Well-designed assessment strategies also play a critical role in educational decision-making and are a vital component of ongoing quality improvement processes at the lesson, course and/or curriculum level. In educational assessment, different types of online assessments depending on the assessment's purpose can be used such as, formative, summative, placement, and diagnostic (Rovai et al., 2008)

Electronic assessment, also known as digital assessment, e-assessment, online assessment or computer-based assessment, is the use of information technology in assessment such as educational assessment, health assessment, psychiatric assessment, and psychological assessment. Specific types of e-assessment include multiple choice, online/electronic submission, computerized adaptive testing such as the Frankfurt Adaptive Concentration Test, and computerized classification testing among others ("Electronic Assessment," 2022).

In formative assessment, often defined as 'assessment for learning', digital tools are increasingly being adopted by schools, higher education institutions and professional associations to measure where students are in their skills or knowledge. This provide tailored feedback, interventions or action plans to improve learning and academic achievement of the learners. Barbosa & Garcia (2005) States that online assessment is an important step inside the e-learning process because gives convenient feedback to all participants in the process, helping to improve the learning and teaching experience.

Summative assessment, also called 'assessment of learning', is also becoming popular with exam boards and awarding organizations delivering high-stakes exams. However the journey of summative assessment from paper-based exam assessment to fully digital assessment has been a long one. Practical considerations such as having the necessary IT hardware to enable large numbers of student to sit an electronic examination at the same time, as well as the need to ensure a stringent level of security to eliminate dishonesty. Academic dishonesty or

misconducts are among the concerns that need to be resolved to accomplish this transition. (Rowe, 2004) stated that one of dishonest problem associated with online assessment was illegal help during the exam, such as exchanging emails or hiring someone else to take the exam. Most students know computers better than their teachers do so it is easy for them to use computers for cheating. Therefore, security should be a concern for instructors in e-assessment.

The COVID-19 pandemic has led to the global disruption of education which necessitated online teaching and learning. During the COVID-19 pandemic, academic institutions are promptly shifting all educational activities to the e-learning format. Urgent response to the pandemic situation required an increase in both educators' and students' awareness towards online teaching and assessment. E-learning has several advantages, such as encouraging students for self-directed learning (Huynh, 2017).

The benefits of online assessment are welcomed by both the exam candidates themselves, and for the organization providing the assessment. Online assessment allows the learners to demonstrate their capabilities in critical thinking and solving problems, which are the key benefits of shifting from traditional teaching to e-learning where the teacher is mainly a facilitator (Alsadoon, 2017). The types of benefits gained will depend on the assessment software used, but one overriding positive outcome is that organizations greatly reduce the administrative burden of organizing and running exams. Other benefits of e-assessment are;

- Quicker to Mark and Issue Results. It is much quicker to mark online and candidates welcome receiving results quickly. With objective questions, results are available immediately if wished.
- Collaborative Question Authoring. Working online makes it easier for the examining body to manage all the tasks involved in creating exams. For example, authoring questions can be done collaboratively, with clear workflows for review and approval of questions before they are added to the question bank.
- Automated Test Assembly Tools. Once there is an approved bank of questions, exam papers can be created easily by selecting questions or by using automated tools e.g. LOFT, or linear-on-the-fly testing, to create automatic and randomized papers.
- On-Screen Marking Tools. Marking and moderating exam results is streamlined, secure and standardized when it is managed online.
- It's More Environmentally Friendly. It's more environmentally friendly – with less paper, printing and transport used overall.
- Another benefit of online assessment is greater security, as all exam papers, candidate details, marks and results are digitally stored. In addition, only the people who should be able access exam information can be granted the appropriate system access. It is much harder to control access, storage and results management with paper-based exams.
- Flexibility to take exams anywhere.
- Remote invigilation, or online proctoring, gives candidates the ability to sit a secure and invigilated exam from the comfort of their home, which is less stressful, and saves time and money going to a test centre.
- Assessment reporting can be immediate if needed. Online assessment facilitates quick and clear reports on candidate results and progress. This makes it easier to give useful feedback to candidates on how they are doing, areas where they are strong and what areas of learning require attention

One of the major bottle necks in online assessment is academic dishonesty which is any type of cheating that occurs in relation to a formal academic exercise. Academic dishonesty refers to committing or contributing to dishonest acts by those engaged in teaching, learning, research, and related academic activities, and it applies not just to students, but to everyone in the academic environment (Cizek, 1999; Cizek, 2003; Whitley & Keith-Spiegel, 2002)

Academic dishonesty can take many forms, which can be broadly classified as follows (Whitley & Keith-Spiegel, 2002; Pavela, 1978; Stern & Havelick, 1986)

- Plagiarism: The adoption or reproduction of ideas or words or statements of another person without due acknowledgment. It is copying and pasting material from a web site into your own document without proper citation is considered plagiarism.
- Fabrication: The falsification of data, information, or citations in any formal academic exercise.
- Deception: Providing false information to an instructor concerning a formal academic exercise such as giving a false excuse for missing a deadline or falsely claiming to have submitted work.
- Cheating: unauthorized use of information, materials, devices, sources or practices in completing academic activities. For example, copying during an exam. Any attempt to give or obtain assistance in a formal academic exercise (like an examination) without due acknowledgment.
- Sabotage: Acting to prevent others from completing their work. Disrupting or destroying another person's work so that the other person cannot complete an academic activity successfully. For example, destroying another person's artwork, experiment, or design is considered sabotage. This includes cutting

pages out of library books or willfully disrupting the experiments of others. Failure to contribute as required to a team project can also be considered academic sabotage.

Individuals can be dishonest due to lack of time management skills, pursuit for better grades, cultural behavior or a misunderstanding of plagiarism (Rovai et al., 2008). Online classroom environments are no exception to the possibility of academic dishonesty. It can easily be seen from a student's perspective as an easy passing grade. Online assessment may provide additional possibilities for cheating, such as hacking (Dawson, 2016).

Proper assignments types, meetings and projects can prevent academic dishonesty in the online classroom (Rovai et al., 2008). Remote invigilation, or online proctoring is also being used to secure online assessment to reduce dishonesty. Restrictions on assessment, such as blocking students from viewing the questions after submitting the answers or limiting the time to ensure that all students are taking the test at the same time is the other way of reducing dishonesty. However this restrictions restricts the effectiveness of the test as an assessment tool (Robles & Braathen, 2002) Another suggestion for overcoming the problem of dishonesty in e-assessment is use of a pool of questions where each student gets different, randomly selected questions. However with very large classes it is impossible to ensure that each student gets different questions because there will always be overlapping. Generating a huge pool of questions requires time and energy which may interfere with the other important duties of the educator.

On students' perception of e-assessment (Sorensen, 2013) conducted a study to investigate the students' perception of e-assessment and found that students engaged in the e-assessment process believed that it added value to their learning. (Jawaid et al., 2014) investigated students' perceptions of computer-based assessment and found that students had a good attitude toward computer-based assessment and valued features such as the use of multimedia, the automatic grading, and the personalized feedback. (Petrisor et al., 2016) examined the students' acceptance of online evaluation system. They found that students preferred the online evaluation system over the paper and pencil examination. Participants in Petrisor et al. study believed that online assessment can assess the knowledge level of learning and their objectives in term of grading. Online learning and assessment is a new phenomenon in Kenya especially in public universities UoK being one of them. Learners in this study had just been introduced to online learning and formative assessment hence it was important to determine their perception and satisfaction with online assessment.

1.2 The Purpose of the Study

This study aimed at investigating students' perception of online formative assessment and whether students' perception of e-assessment was gender dependent. In addition it will determine whether students are satisfied with online assessment.

1.3 Objectives of the Study

The following were the specific objectives of this study;

- a) To determine students perception of online formative assessment.
- b) To find out whether there is a gender difference in students' perception of online formative assessment.
- c) To determine students satisfaction with online assessment.

1.4 Research Questions

This study sought to answer the following research questions;

- a) What is the students' perception of online formative assessment at University of Kabianga?
- b) Is there a difference in students' perception of online formative assessment between male and female students at the University of Kabianga?
- c) Are students satisfied with online assessment?

1.5 Research Hypothesis

Ho1: There is no statistically significant difference in students' perception of online learning between the male and the female students.

2. Research Methodology

Exploratory research design was used in this study. Primary survey research method was used as data was collected directly from the subjects via online survey tool.

2.1 Sample and Sampling Procedure

Study population was 312 second year student at UoK. The sample size was a total of 187 students who voluntarily participated in the study. Purposive sampling was used to select participating class which had online teaching and learning for a whole semester. This class had undertaken two online quizzes during the semester.

All the students were informed of the online survey feedback tool on e- assessment posted on the LMS. The online survey was open to all 312 students and only 187 responded. This 187 students made a randomly selected sample of this study.

2.2 Instrumentation and Data Collection

Instrument of data collection data was a self-designed online survey questionnaire (Google form). The instrument used was an online feedback questionnaire given at the end of semester after they had taken two online quizzes on the Moodle LMS. The instrument had 20 questions in total. 19 were objective questions and one open ended question. Five- point Likert- type scale items designed to measure learners' perception on online assessment. Students were asked to indicate whether they strongly agree (SA), agree (A), undecided (U), disagree (D), strongly disagree (SD) with each item in the questionnaire. The items in the questionnaire were closed-ended questions and were measured on a 5-pointer Likert scale. The highest score in the scale is (5) while the lowest is (1) per item. For questions with a positive stem strongly agree (SA) scored highest (5) while strongly disagree (SD) scored lowest (1). For questions with a negative stem strongly agree scored lowest (1) while strongly disagree scored highest (5). The maximum score was 96 while the minimum score was 19. The last question was open ended where learners were asked to give any comment in relation to the online assessment.

2.3 Data Analysis and Interpretation

Students voluntarily responded to the online survey based on notices posted on the LMS login page and to class specific student social media groups. The survey was open for the last two weeks of the semester after the learners had experienced online learning and 2 online quizzes. Collected data were analyzed using means, standard deviation and independent t-test. t-test was used to test on gender differences in online assessment perception. To make reliable inferences from the data, all statistical tests were tested for significance at alpha level at 0.05.

3. Results

3.1 Learner description of online assessment experience in one word

Table 1. Students' description of online assessment

Responses	Number (N)	Percentage %
Very Bad	4	2.13
Bad	5	2.66
Not Sure	4	2.13
Good	124	65.96
Very Good	51	27.13
Total	188	100

27.13% of all the students described their first time online assessment as very good, 65.96% as good while only a low percentage of 2.66% said it was bad and 2.13% said it was very bad. Only 2.13% of the students who were actually males were not sure of their experience. In total 93.09% of the students found the online assessment good.

This results are in agreement with the findings of a similar study in Saudi where majority of the students describe the experience favorable and very favorable (Alsadoon, 2017). Similar finding were reported by (Jamil et al., 2012) who stated that students found computer based testing as time saving, interesting and unbiased.

Table 2: Students description of online assessment by gender

Gender	No sure	Good	Very Good	Bad	Very Bad	Grand Total
Female	0.00%	27.66%	9.04%	1.60%	0.53%	38.83%
Male	2.13%	38.30%	18.09%	1.06%	1.60%	61.17%
Grand Total	2.13%	65.96%	27.13%	2.66%	2.13%	100.00%

65% of all the students described their online assessment experience as good of which 27% were female and 38.30% were male. 27.13% of the students described online assessment as very good of which 9.04 were female and 18.09% were male. For those that described the experience as bad were 2.66% of which 1.60% were female and 1.06 were male. 2.13% described the experience as very bad of which 0.53% were female and 1.60% were male. Only 2.13% were undecided about the experience of which all were male.

3.2 Learners Perception of online assessment

Table 3 exhibits the descriptive statistics of overall perception of learner's towards online assessment. For positive statements a mean value of the statements should be equal or greater than 3.0 for the positive perception, while for negative statements a mean value of the statements should be less than 3.0 for the positive perception.

Descriptive statistics was used on statements, out of which all positive statements has mean value equal or greater 3.0 for positive perception while all the negative statements had mean of less than 3 for positive perception. Therefore, the overall learner's perception on online assessment was found positive.

Table 3: Perception of learners' on online assessment without gender variable

	SA	A	UD	D	SA	Mean	Std Dev	
I enjoyed the online assessment experience	47	118	7	11	5	4.02	0.87	Very positive
	25.0%	62.8%	3.72%	5.85%	2.66%			
I was afraid of online assessment	23	75	15	55	20	3.14	1.26	Positive
	12.2%	39.9%	7.98%	29.3%	10.6%			
A hate the multiple questions used in the CAT	9	25	10	109	35	2.28	1.06	Positive
	4.8%	13.3%	5.32%	58.0%	18.6%			
I liked the matching questions in the assessment	45	117	10	9	7	3.98	0.90	Very Positive
	23.9%	62.2%	5.32%	4.79%	3.72%			
I liked the short answer questions used in the CAT	58	113	3	11	3	4.13	0.83	Very Positive
	30.9%	60.1%	1.60%	5.85%	1.60%			
I liked the true or False questions used in the CAT	61	95	5	23	4	3.99	1.02	Very Positive
	32.5%	50.5%	2.66%	12.2%	2.13%			
The timing of the CAT was sufficient	62	96	2	19	9	3.97	1.08	Very Positive
	33.0%	51.1%	1.06%	10.1%	4.79%			
I would prefer an online CAT 2 instead of a written CAT	88	68	11	12	9	4.14	1.09	Very Positive
	46.8%	36.2%	5.85%	6.38%	4.79%			
Online assessment is better than sit in assessment	66	73	19	19	11	3.87	1.17	Very Positive
	35.1%	38.8%	10.1%	10.1%	5.85%			
I am still uncomfortable with online assessment	11	27	14	89	47	2.29	1.16	Positive
	5.85%	14.4%	7.45%	47.3%	25.0%			
The quiz was too easy	5	14	25	93	51	2.09	0.97	Positive
	2.66%	7.45%	13.3%	49.5%	27.1%			
I had thoroughly revised for the CAT	54	102	12	16	4	3.99	0.94	Very Positive
	28.7%	54.3%	6.38%	8.51%	2.13%			
I would request for training on answering online assessment	35	77	8	55	13	3.35	1.26	Positive
	18.6%	41.0%	4.3%	29.3%	6.91%			
I needed training on how to handle online assessment before the CAT	40	75	9	53	11	3.43	1.26	Positive
	21.3%	39.9%	4.79%	28.2%	5.85%			
This was my first online assessment	46	63	1	54	24	3.28	1.43	Positive
	24.5%	33.5%	0.53%	28.7%	12.8%			
I am happy with the immediate feedback given after the CAT	90	85	2	8	3	4.34	0.83	Very Positive
	47.9%	45.2%	1.06%	4.26%	1.60%			
I am satisfied with my CAT 1 scores	53	88	4	29	14	3.73	1.23	Very Positive
	28.2%	46.8%	2.13%	15.4%	7.45%			
Given an option I would choose a written CAT	13	33	33	70	39	2.53	1.20	Positive
	6.91%	17.6%	17.6%	37.2%	20.7%			

Table 3 shows that student a very positive and positive perception towards online assessment. This results are in agreement with the findings of a similar study in Saudi where majority of the students describe the experience favorable and very favorable (Alsadoon, 2017). Similarly, Liu et al (2001) found that students who were taking an online course had more positive attitudes towards the online exam.

Table 3 further shows that 87% of the students enjoyed the online assessment while only 8.55 didn't enjoy it. The remaining 3.74% were undecided about their online assessment experience. This results do not agree with those of students in Turkey and Kyrgyzstan who reported online exams to be more stressful than paper-based exams (Afacan Adanır et al., 2020).

Concerning fear of online assessment 12.30% of the student strongly agreed that they were afraid and 40% stated that they were afraid. This 52% of the students could have been the students who were handling online assessment for the first time. 28.88% disagreed while 10.70 strongly disagreed that they feared online

assessment. This 39.58% would most probably those that had been assessed online before. 8.02% were undecided about the fear of online assessment. 41% of the students were not experiencing online assessment for the first time while 57.95% of them were experiencing it for the first time. (Liu et al., 2001) found that students who were taking an online course had lower anxiety about a multimedia exam than those taking the same course delivered in the classroom. Studies have shown that while students may have some reservations about the use of online assessment practices, these reservations can be somewhat alleviated by actually taking an assessment online (Sheader et al., 2006)

3.3 Learners Perception of online assessment

Further analyses in consideration of gender results are shown in Table 4.

Table 4: Perception of learners' on online assessment by gender variable

	SA	A	UD	D	SD	Mean	SD	Mean analysis
I enjoyed the online assessment experience								
% Male	68.09%	61.86%	42.9%	36.4%	60.0%	4.1	0.82	Very Positive
% Female	31.91%	38.14%	57.1%	63.6%	40.0%	3.9	0.94	
I was afraid of online assessment								
% Male	65.22%	58.67%	60.0%	58.2%	75.0%	3.1	1.30	Positive
% Female	34.78%	41.33%	40.0%	41.8%	25.0%	3.2	1.28	
A hate the multiple questions in the CAT								
% Male	66.67%	52.00%	70.0%	62.4%	60.0%	2.3	1.05	Positive
% Female	33.33%	48.00%	30.0%	37.6%	40.0%	2.3	1.09	
I liked the matching questions								
% Male	66.67%	56.41%	70.0%	88.9%	57.1%	4.0	.959	Very Positive
% Female	33.33%	43.59%	30.0%	11.1%	42.9%	4.0	.825	
I liked the short answer questions								
% Male	70.69%	55.75%	66.7%	63.6%	66.7%	4.2	.868	Very Positive
% Female	29.31%	44.25%	33.3%	36.4%	33.3%	4.1	.770	
liked the true or False questions	61	95	5	23	4	4.0	1.02	
% Male	65.57%	56.84%	80.0%	60.9%	75.0%	4.0	1.06	Very Positive
% Female	34.43%	43.16%	20.0%	39.1%	25.0%	4.0	.965	
The timing of the CAT was sufficient								
% Male	69.35%	52.08%	50.0%	68.4%	88.9%	3.9	1.21	Very Positive
% Female	30.65%	47.92%	50.0%	31.6%	11.11%	4.0	.857	
I would prefer an online CAT 2 instead of a written CAT								
% Male	70.45%	48.53%	63.6%	66.7%	55.6%	4.2	1.11	Very Positive
% Female	29.55%	51.47%	36.4%	33.3%	44.4%	4.0	1.07	
Online assessment is better option								
% Male	72.73%	53.42%	47.4%	68.4%	54.6%	4.0	1.2	Very Positive
% Female	27.27%	46.58%	52.6%	31.6%	45.5%	3.7	1.13	
I am still uncomfortable with online assessment								
% Male	81.82%	48.15%	78.6%	58.4%	63.8%	2.3	1.2	Positive

	SA	A	UD	D	SD	Mean	SD	Mean analysis
<i>%Female</i>	18.18%	51.85%	21.4%	41.6%	36.2%	2.3	1.1	
The quiz was too easy								
<i>%Male</i>	80.00%	57.14%	60.0%	58.1%	66.7%	2.1	1.01	Positive
<i>%Female</i>	20.00%	42.86%	40.0%	41.9%	33.3%	2.1	.906	
I had thoroughly revised for the CAT								
<i>%Male</i>	68.52%	59.80%	33.3%	62.5%	75.0%	4.0	.973	Very Positive
<i>%Female</i>	31.48%	40.20%	66.6%	37.5%	25.0%	3.9	.894	
I would request for training on answering online assessment								
<i>%Male</i>	74.29%	58.44%	0.00%	10.9%	69.2%	3.3	1.33	Positive
<i>%Female</i>	25.71%	38.96%	12.5%	3.64%	38.5%	3.3	1.16	
I needed training on how to handle online assessment before next CAT								
<i>%Male</i>	70.00%	60.00%	55.6%	56.6%	63.6%	3.5	1.28	Positive
<i>%Female</i>	30.00%	40.00%	44.4%	43.4%	36.4%	3.3	1.23	
This was my first online assessment								
<i>%Male</i>	69.57%	55.56%	0.00%	61.1%	62.5%	3.3	1.46	Positive
<i>%Female</i>	30.43%	44.44%	10.0%	38.9%	37.5%	3.2	1.38	
I am happy with the immediate feedback given after the CAT								
<i>%Male</i>	61.11%	60.00%	50.0%	75.0%	66.7%	4.3	.872	Very Positive
<i>%Female</i>	38.89%	40.00%	50.0%	25.0%	33.3%	4.4	.773	
I am satisfied with my CAT 1 scores								
<i>%Male</i>	67.92%	59.09%	75.0%	51.7%	64.3%	3.8	1.24	Very Positive
<i>%Female</i>	32.08%	40.91%	25.0%	48.3%	35.7%	3.6	1.23	
Given an option I would choose a written CAT								
<i>%Male</i>	76.92%	66.67%	57.6%	58.7%	59.0%	2.6	1.25	Positive
<i>%Female</i>	23.08%	33.33%	42.4%	41.4%	41.0%	2.4	1.11	

Table 4 shows that both the female and male students have a positive perception towards formative online assessment. Further analysis of t-test was done to determine whether there was statistically significant difference in perception of female and male students towards online formative assessment. Results are shown in table 5.

Table 5: t-test results on perception towards online formative assessment by gender

Gender	N	Mean	Std. Deviation	Std. Error Mean	df	t
Male	115	3.5514	.34978	.03262	186	1.095
Female	73	3.4948	.33931	.03971		

Table 5 results indicate that there is no statistically significant difference in perception towards online formative assessment between the male and female students since $t(186) = 1.095$, $p > 0.05$. The null hypothesis that there is no statistically significant difference in perception towards online formative assessment between the male and female students is accepted.

This findings are consistent with those of research conducted in the United Arab Emirate (UAE) by (Elmehdi & Ibrahim, 2019) who found no difference in online exam perception in terms of gender. However, this findings are not consistent with those of Afacan Adanır et al. (2020) who reported that, online exam perceptions differed in terms of gender: Turkish female learners felt more stressed and Kyrgyz female learners thought they were disadvantaged as compared to males. Similar results were observed in the work of Hillier (2014) in which female learners reported more stress and more concerns about technical problems during online exams.

3.4 Learners Contributions on other Aspects of Online Assessment

3.4.1 Question Type and Online Examination

On test question type, 77.47% of the students liked multiple choice questions and only 18.15% hated them. On matching test questions, 86.63% liked them while only 8.65% hated this type of questions. On true and false test questions, 82.86% of the students like them while 14.44% hated them. On short answer questions, this were the most favourite test questions because 90.91% liked them while only 7.48% hated them. From these high percentages on the various types of questions I would recommend that online exam should use these varieties and not just one type. This would bring in the element of stimulus variation during exam which would most probably reduce exam anxiety, increase exam enjoyment and improve performance.

To enhance the effectiveness of online exams and make the evaluations more useful to students, it is recommended that various types of questions, such as drag and drop, matching, and essay type questions, be considered for inclusion in online exams together with learners' participation work in other online activities, such as assignment uploads, and forum postings. (Afacan Adanir et al., 2020). According to Afacan Adanir et al., learners from Kyrgyzstan expressed concern on online evaluation, due to the fact that their online exams had only multiple-choice questions. One Kyrgyz participant stated that, "The technique of online exams is not appropriate since there are only multiple-choice questions, it is like a practice test."

When asked their preference in the next formative assessment whether offline or online assessment, 82.88% of the students preferred online assessment to offline assessment. Only 11.22% preferred offline assessment. Majority of the students 73.78% of the students described online assessment as better compared to offline. 16.04 % described offline assessment as better compared to online assessment. This means majority have positive attitude towards online assessment. This results are in agreement with findings of a study done by (Hussain & Mumtaz, 2017) which reported that students preferred the e-assessment than offline assessment. (Marriott, 2009, Sheader et al, 2006) reported that majority of the students preferred online assessment method. Cabi, (2016) investigated master's students' perceptions of various e-assessment methods. The results showed that students preferred e-exams because they offered immediate feedback, motivation for study, and self-assessment.

3.4.2 Digital Skills for Online Assessment

Concerning training on how to handle online assessment majority of the students 60.87% of the student stated that they required to be trained on how to handle online assessment before this test was given. This would have been mainly the 57.95% who were handling online assessment for the first time. 34.22% didn't need any training. 59.36% stated that they would still require training on how to handle online assessment while 36.36 felt they don't need any training.

72.19% of the students felt that they were comfortable to handle an online assessment after this assessment. However 20.31% still felt uncomfortable with online assessment.

3.4.3 Preparation for the online Assessment

On preparation for the formative online assessment majority 82.89% of the students stated they had thoroughly prepared. This high percentage could have been caused by the fact that this was their first online assessment therefore they needed to prepare well. Only 10.66 stated they had not prepared for the assessment.

3.4.4 Assessment Feedback from the System

93.10% of the students were happy with immediate feedback given by the system. Only 5.87 were unhappy with the immediate feedback. This findings are in agreement with those of Cabi, (2016) who investigated master's students' perceptions of various e-assessment methods. The results showed that students preferred e-exams because they offered immediate feedback, motivation for study, and self-assessment.

3.4.5 Learner satisfaction with the online formative assessment scores

Seven statements were used to assess learner's satisfaction with online assessment. Results are shown in table 4.

Table 6: Learner Satisfaction with Online Assessment

Response	N=188	No.	%
I would prefer an online quiz instead of a written one		156	83
I am satisfied with my online quiz score		121	74
Online assessment is better than sit in assessment		139	72
I am still comfortable with online assessment		136	72
Given an option I would choose online quiz		109	57
I am happy with immediate feedback from online quiz		175	93
Online assessment is better than sit in assessment		149	74

Table 4 shows that learners were very satisfied with various aspects of online assessment. The highest satisfaction came from the immediate feedback given by the system with 93% of the students expressing satisfaction.

3.4.6 Choice of online vs. face-to face Examination

Given an option to choose between online and face to face formative assessment in their 2nd continuous

assessment majority of the students (83%) choose online. This findings are in agreement with those of Turkey and Kyrgyzstan by Afacan Adanır et al. (2020) the majority of Turkish participants indicated that online exams were effective and practical, and hence, they supported their continuation and even expansion. In Turkey, legal restrictions prevent the implementation of final exams in an online format since the presence of proctors is required but allows midterm exams to be held online. This is similar to UoK which allows online exam for formative assessment but summative assessment must be face to face due to lack of proctoring capabilities.

3.4.7 Open Comments from Students on Online Assessment

When asked to give general comments concerning the online assessment in their own words learners gave the following responses; wow, enjoyable, interesting, engaging, and convenient.

3.4.8 Future Assessments

Many 70 of 187 suggested that subsequent formative assessment to be online. This means they were in favour of the online assessment though this was their first online assessment. Only 5 stated that they should be assessed face to face for good reasons. One student wrote, *'next assessment to be face to face because my phone failed me'*. Another student stated that, *'some students didn't have mobile phones hence had to borrow smart phone to do the quiz while others had difficulty in buying mobile data since institution internet is unstable and unrealizable for an exam'*.

3.4.9 Training for Technical Digital Skills for Online Assessment

15 students indicated that they needed training on how to handle online assessment. Students wrote, *'Online assessment should be done after a short training so as to avoid some mistakes which arise from the previous one'*, *Sufficient training on how to answer the questions, Training on how to answer the question is needed, We should be trained on how to answer the questions, Let us be trained on how to answer the online cat first Training on how to deal with online assessment and CATS and Train us well before the assessment to avoid confusion'*.

This group of learners were not trained prior to the online assessment. However despite of lack of training the learners were able to manoeuvre through the online assessment. They demonstrate that despite lack of training students were able to navigate the whole process of online assessment because of the fact that they had basic digital skills because they have been using mobile phone for other purposes other than education. It should be noted that this students are digital natives; are the new generation of young people born into the digital age and therefore are assumed to be inherently technology-savvy (Wang et al., 2013) (Prensky, 2001). However they requested for training to sharpen their digital skills so that they are not disadvantaged in an exam for lack of certain skill. In addition digital knowledge increasing at a high speed it would be prudent to train the learners in the new upcoming digital tools. Digital adoption and the respective digital skills needed to embrace the digital transformation are critical to landing more secure, in-demand tech careers, are essential to the survival of businesses digital adoption and the respective digital skills needed to embrace the transformation are critical to landing more secure, in-demand tech careers. In fact, those skills are essential to the survival of businesses (*Why Digital Skills Are the Foundation of Our Future Workforce*, 2021). Educational institutions like UoK should keep in mind that there are always new digital skills to learn and new technologies to master and therefore support continuous learner training on digital skills. However learners are encouraged to adopt self-learning of this digital skills by connecting with professionals and colleagues in their field as another great way to supplement their self-learning and understanding which skills need more refining (*What Are Digital Skills & Why Are They Important?*, 2021).

3.4.10 Time for Online Exam

Learners suggested that in online exams more time to be given to cater for network fluctuations. This is because at UoK and in many parts of Africa and third world countries internet is normally unstable which would affect an exam. One student wrote, *'in the next online assessment, time should be adjusted so that you recover time lost when the network was disturbing. The network disturbed me that made me just to rush over the question'*. Others stated; *A little more time to do the cat, Time to be extended, A little more time to do the quiz'*.

Therefore time allocated for an online exam should have an allowance of more time just in case there is fluctuation of connectivity. Similar remarks were given by Turkish learners who concerned about little time provided for some questions, especially those requiring paper-based calculations (Afacan Adanır et al., 2020). They suggested time shortage issue could be eliminated with the allocation of more time for answering such questions. Concerning time lost due to technical problems which is inevitable during an online exam, in Turkey, learners have access to an online chat tool that is integrated into the online exam system. When learners report technical failure, the support team from examines log records and, where there has been such a failure, provides students with the opportunity to re-take the exam if necessary. This would ensure that the learner is not disadvantaged in any way.

3.4.11 Type of Questions in Online Exam

Some of the learners advocated for all questions be multiple choice, they wrote, *'All questions have multiple choices'*. Other students were in against multiple question, they wrote *'Avoid multiple choices questions'*, I

would recommend addition of more matching and short answer questions than multiple choice questions’.

Some of the students preferred open questions, they wrote ‘Set questions with open answers’. From this responses it is important to include a variety of question types such as; drag and drop, filling in the blanks, matching, short answer and even easy.

In Kyrgyzstan learners raised concern, due to the fact that online exams had only multiple-choice questions. A concerned Kyrgyzstan student stated that, “The technique of online exams is not appropriate since there are only multiple-choice questions, it is like a practice test” (Afacan Adanır et al., 2020). (Benli & İSmaılLova, 2018) proposed a method for the evaluation of exams with open-ended questions in distance education. However, when the types of questions used in Distance Education and Assessment are examined, the use of Open-Ended Questions is less than that of other methods.

UoK students raised concern concerning the drag and drop questions. Some student reported, ‘It was very difficult to drag and drop responses when using mobile phones’. 95% of the students in this study used mobile phones to do the assessment. They talked of having wasted a lot of precious time struggling to drag and drop responses. This meant they had to rush through the remaining questions to avoid incomplete submission. As such it is important to consider the devices learners will be using in online assessment to ensure no one is disadvantaged on account of the device they are using.

3.4.12 Number of Questions in an Online Exam

Learners were of the opinion that the number of questions to be increased from the twenty that was in that exam. They felt that increasing the number of test items would improve their performance in the online exam. Students wrote, ‘Add number of questions’, ‘Increase the number of questions’. Use of more test items gives scope for wider sampling of the content which is a merit of objective testing (Disha, 2016).

3.4.13 Scoring of Online Test

Scoring of short answer questions raised concern with the students because the system appeared to be too strict in marking. Example; just putting a full stop the correct answer was marked wrong, extending the answer with a word that does not spoil the answer made the answer wrong to the system such as open and open system, order of responses also mattered to the system. In addition, some students suggested that the single word answer questions should not be used, while other suggested that the lecturer should moderate the scoring of short answer questions to ensure no one was disadvantaged.

Students gave feedback such as, ‘at least the teacher should oversee the marking to avoid being marked wrong when I have full stop and other small errors in my work. The system should not have complete authority where written answers are used’. In his study Jamil et al., (2012) reported that students indicated that online scoring was unbiased.

3.4.14 Time for Online Exam

Students suggested that date of the quiz to be given early enough to allow them prepare for the test. Significance of Revision and Method of Revision, (2022) states, revision is a crucial part of your learning process. You cannot and should not undermine its importance. Timely and effective revision can boost your academic performance to the next level.

3.4.15 Integrity of Online Assessment

Students expressed concern on integrity on the online assessment. They expressed that some of the students could have cheated in the exam and to avoid this they suggested that, ‘Making/feedback should be done after everyone has completed the quiz’, ‘I would recommend that the corrections/feedback to be given after time of the assessment lapses’. This was to ensure that cheating didn’t occur and exam integrity was upheld.

3.4.16 Impact of Online Assessment of Learners Digital Skills

Students indicated that online exam advanced their understanding on handling online tasks. One student stated; ‘It has enabled me to be more advanced on handling online tasks’. They acquired and sharpened digital skills that will be beneficial in their future learning and even career. Online learning equates to strong technical skills, a definite plus for any job seeker. Some of this skills are; remote collaboration through virtual platforms, sharing, uploading and downloading files, instant message in real-time or break off into smaller groups to work on a specific part of the class (11 Advantages of Online Learning, n.d.).

3.4.17 Impact of Online Exam on Learners Attitude towards Online Assessment

Students stated that online assessment is not only convenient but also interesting and enjoyable. One student wrote, ‘It (online quiz) was much interesting and I enjoyed it fully’. This suggest positive attitude towards online assessment. The convenience here is from the flexibility in terms of time and place of taking the assessment. Students did the quiz anywhere without having to travel to campus or to a lecture hall. The use of different types of question; multiple, matching, short answer, drag and drop and true or false is what made the assessment enjoyable and interesting. Therefore it would be advisable to use a variety of question types in online assessment rather than just one type. Jamil et al., (2012) reported that student indicated that online assessment is interesting.

4. Conclusion

On the basis of the findings of this study, the researcher made a number of conclusions in relation to the two hypotheses of the study. These conclusions include:

Students should be assessed online since they have a positive perception towards it. Therefore, teachers should not hesitate to assess learners online since have positive perception towards it. Being digital natives they possess some basic digital skills in handling online assessment and learning. However, before learners can take online assessment for the first time they need to be trained on how to handle it to enhance their digital skills and boost their confidence and motivation. Since digital skills are very dynamic students should be continuously trained on how to handle online assessment to ensure they acquire the relevant and any new skills.

Learners were happy with the immediate feedback on online assessment and therefore feedback should not be delayed.

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