

Perceived Usefulness and Ease of Use of Online Examination System: A Case of Institute of Accountancy Arusha

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Abstract:

Online examination systems have revolutionised the learning process for many learning institutions around the globe, especially in developing countries, and have proven effective during the COVID-19 pandemic to maintain social distance. This study employed the Technological Acceptance Model (TAM) to analyse the perceived usefulness and ease of use of such systems when adopted in developing countries like Tanzania, where such systems are not well known by the learners. Also, the perceptions of such examinations among learners are not well explored. This study employed a descriptive research design while the Institute of Accountancy in Arusha was used as a case study where the population was 125, which is all third-year undergraduate learners of computer-based subjects. A descriptive analysis through SPSS version 26 showed a mixed perception about supporting online examinations in higher learning institutions. Furthermore, the study analysed different factors for perceived usefulness and ease of use of online examinations for learners, such as participant technical consigns, academic contributions, and security consigns. Based on the findings, the study recommended that the institution's management support is needed, and dedicated funds should be set aside to support reliable technologies for online learning and examinations.

Keywords: IT, ease of use, perceived usefulness, online examination systems, online learning.

1. Introduction

In the classroom, information technology (IT) is becoming more common. This has led to an increase in the number of online examination platforms that can be used to supplement or replace traditional paper-based exams (Shraim, 2019). An online examination system is a process of conducting exams through a website or the internet. It was previously known as electronic examinations or computer-based examinations (Meletiou, Voyiatzis, Stavroulaki, & Sgouropoulou, 2012). Practically, they can be delivered through an online system or included in a module within a learning management system such as Moodle or SARIS (Hasan, 2016). The mode of these examinations allows facilitators to set different ranges of examinations, from true and false, multiple-choice questions, short answer questions, and even essay-type questions. These questions can be kept in a question bank and be used in multiple examinations. Thus, an online examination system simplifies traditional paper-based examinations, especially for large classes, from designing, delivering, marking, preparing reports (results), and storing examinations (Uchenna, 2012; Farzin, 2016).

Online examination systems have been proven effective and have been used for a long time in most developed countries around the globe (Shraim, 2019; Yaacob, Baharudin, Ali, & Khan, 2020). Such systems have become essential to developing countries in maintaining social distance and employing the full advantages that Information Technology (IT) offers, especially during pandemics such as COVID 19 (Mailiza, Burg, & Maulina, 2021). However, concerning the various benefits of this technology, rigorous research needs to be conducted to evaluate the perceived usefulness and ease of use of these systems for learners with less experience with such systems. Although the Institute of Accountancy Arusha (IAA) has

started implementing the use of online examinations, learners' perceptions are not fully explored. As a result, this study aims to look into the perceived usefulness and ease of use of online tests from students who have taken online exams at IAA. It will help the institute figure out important and strategic things about designing and administering online exams so that students can learn in the best way possible.

Literature Review

Researchers around the globe have discussed the issues of learners' perceptions concerning online examination systems to evaluate their perceived usefulness and ease of use (Farzin, 2016; James, 2016). The most common advantage of online examinations frequently cited by most researchers is immediate feedback (Kuikka, Kitola, & Laakso, 2014). Furthermore, research shows that immediate feedback on examinations provides learners with the necessary motivation to improve their learning approach in terms of saving time, effort, and costs (Baleni, 2015).

Many researchers have found that students feverishly appreciate the transparency and fairness of online examinations compared to paper-based examinations (Iannone & Simpson, 2016). This gives learners assurance that marking is transparent as the results are generated automatically and immediately after the examination is conducted (Farzin, 2016; Baleni, 2015). However, it must be remembered that such systems are only reliable for particular types of tests, such as multiple-choice, matching, true-false, and short-answer questions. (Farzin, 2016). Another advantage of online examinations is the reduction of cheating chances for learners as questions can be in a different order for each student and can also be completely different as they are taken randomly by the system from the question bank. However, this raises fairness concerns for learners as one might get difficult questions compared to another based on this procedure of randomisation of the system (Sorensen, 2013).

Research shows that the majority of learners are very familiar with the use of technology, but they are inexperienced with regard to online examinations and complain about technical difficulties and internet connection. Similar findings are reported by Shraim (2019), who argued that system failure during online examinations could discourage learners from using such a system. A test is feasible only if learners have enough confidence in it. As a result, management commits to appropriate policies and plans to ensure that such systems run smoothly and that appropriate hardware, software, network, and internet connectivity are compatible (Ali, Fadil, & Qarabash, 2021).

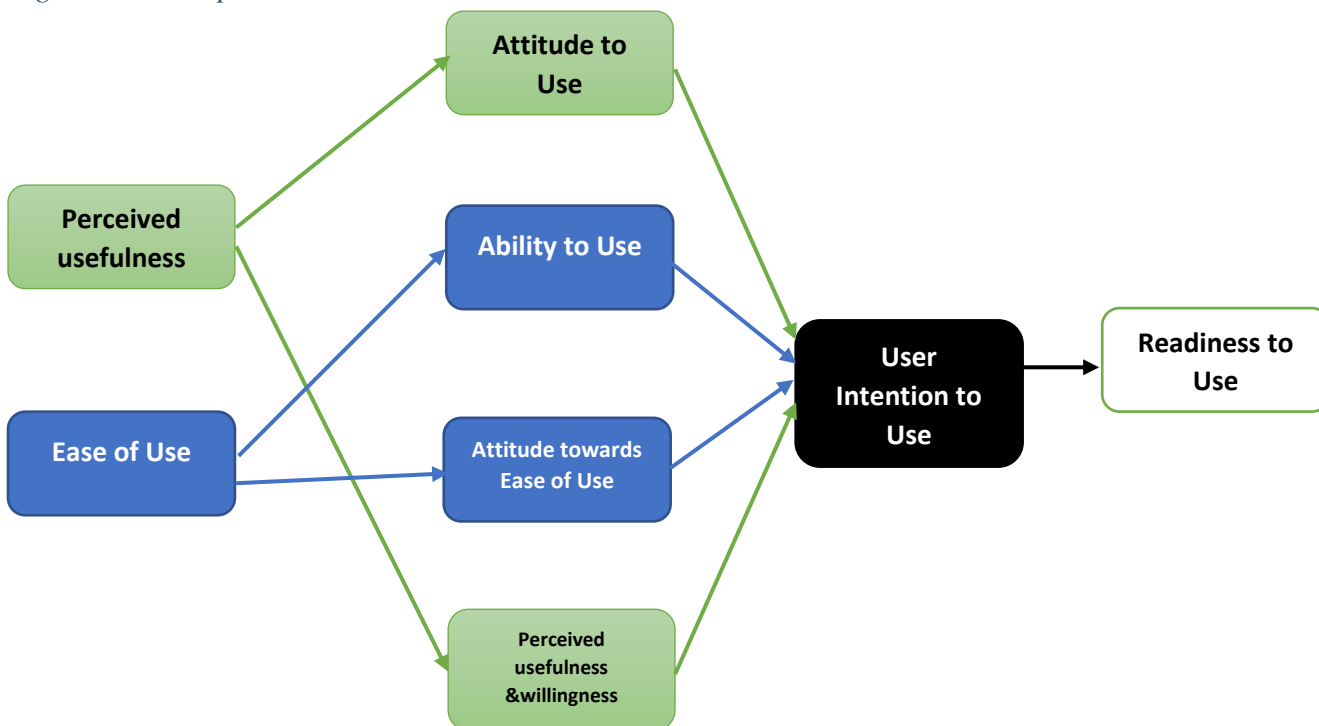
The issue of security is a major concern in online examinations, as elaborated by Al-Saleem and Ullah (2014), who proposed various security techniques for online examinations. For example, Anusha, Soujanya, and Vasavi (2012) discussed the issue of candidates cheating by communicating with other learners outside the examination venues or by browsing the internet. Authors proposed the use of webcams to monitor examinations and the use of web block software such as Secureexam Browser and Responders Lock Down Browser. This software ensures that only the exam is displayed during the exam while other applications are locked through disabling features such as screen capture, copy and paste, right-click menu options, browser options, toolbar options, and function keys. Another security feature is the authentication of learners. This can be accomplished with the help of software and hardware such as webcams, fingerprint scanners, and biometric face recognition (Sarrayih & Ilyas, 2013).

1.1. Technology Acceptance Model (TAM)

This study used the Technological Acceptance Model (TAM) to evaluate the ease of use and perceived usefulness of online examinations for higher learning institutions' learners, which was incorporated from Loc, Vu, and Linh's (2021) Technology Acceptance Model (TAM). This concept explains the factors influencing students' willingness to take online exams and their perceived usefulness. As a result, learners' ease of use and perceived usefulness of online examinations will be revealed after a vigorous examination of their actions and attitudes. According to Farahat (2012), TAM is a necessary form of analysis for assessing information technology acceptability among users. Other researchers identified TAM as the most widely

used model among researchers in the field of information technology (Tsai, 2017; Jimenez, García, Violante, Marcolin, & Vezzetti, 2021).

Figure 1; Conceptual Framework



Source; Researchers 2022

In this study, TAM was clarified as follows: the degree to which learners perceived utilising online examinations as easy, and low effort is defined as perceived ease of use. Perceived usefulness represents learners' perceptions of how easy it is to do online examinations. Learners' views on the ease of how they can use technology for online examinations represent the behaviour and tendency of using ICT facilities in conducting their examinations and aiding their learning process. The survey data was also used to answer the research question, "what is the learner's attitude toward the ease of using ICT facilities in conducting online examinations at IAA?" which was the study's main goal.

1.2. Online Examinations at IAA

Regardless of the government of Tanzania's initiation in adopting ICT infrastructures for all its public sectors, very few public higher learning institutions have adopted online examinations. However, most public higher learning institutions, including IAA, have already adopted ICT infrastructure for their day-to-day operations. As a trial period, all third-year progress test examinations were conducted online to replace paper-based examinations and provide an automatic grading and result system. These examinations were conducted in fixed computer labs at the IAA main campus in Arusha. These labs are large, with a capacity of more than 50 students. Such an environment is not suitable for high-stakes exams. Furthermore, all examinations are scheduled within two weeks, making it unlikely to be available for other courses to use these labs.

Online examinations are included as a modular part of the Moodle platform. Unlike other institutions around the globe, these examinations are prepared by the facilitators and sent to the special committee for designing, planning, and administering online examinations (Shraim, 2019). However, during this trial period at IAA, there was no committee to regulate the exercise or measure the quality of online examinations. Security measures for online examinations include showing the institute ID to invigilators and logging in to the Moodle platform with provided credentials. Internet access was running through these

online examinations without any regulations. Students received the overall results immediately after submitting their online examinations for some of the exams, while others were marked through Moodle, and the results were sent directly to students without any regulations from any committee.

2. Methodology

The study used a descriptive research design in conducting this study. Furthermore, the study used a mixed methodology to analyse students' perceptions of the ease of use and perceived usefulness of online examinations at the Institute of Accountancy Arusha (IAA). The study used both quantitative and qualitative approaches. To obtain learners' perceptions of the convenience of taking online exams, quantitative data were collected through questionnaire with a 5 – point Likert scale. The study also employed qualitative data collection approach to obtain learners' concern toward online examinations through unstructured interviews. Content analysis was used to analyse qualitative data by applying the description technique while descriptive analysis was used to analyse quantitative data. Validity and liability tests were performed by obtaining participant consent before questionnaires were distributed and interviews were conducted. A total population of 127 third-year information technology (BIT) and computer science (BCs) learners were involved in the study. Through the Kothari formula that states $n = N/1+N(e)^2$ (Kothar, 2004), a sample size of 98 participants was obtained. The poll was done at the Institute of Accountancy Arusha (IAA) main campus in Arusha in the first semester of the 2021–2022 academic year.

In sampling, both probability and non-probability were used. Purposively, four class representatives (CR) were selected for interview through saturation, as they are more involved with all class decisions and meetings and have more information on their class module details. Simple random sampling was used to select 98 participants out of 127, resulting in a total 102 participant. The study utilised questionnaires and unstructured interview to assess learners' attitudes toward the ease with which they can conduct online examinations and their behaviour while doing so. Questionnaires consisted of statements arranged in the logical order of a 5-point Likert scale, directing participants to choose their ideas by ticking only one cell in the concept column. (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) agree strongly. The data collection process included the following steps;

Step 1: Building a research framework

Step 2: Designing questionnaires

Step 3: Delivering and guiding the participant to fill out questionnaires after obtaining their consent to participate in the study.

Step 4: Collecting questionnaires after filling.

Step 5: Collecting information from the in-depth interview.

Step 6: Analysing data.

3. Findings and Discussion

Respondents reported mixed feelings about the ease of use and perceived usefulness of the online examination system at IAA. Of the 15 questionnaire items, two received positive mean responses, eight had neutral responses, and five had negative responses overall (Table 1). These ratings are based on the adoptive five-point Likert scale, where the midpoint mean value of 3 represents a neutral position, while a mean value above this can be considered positive and a mean value below this can be considered negative.

The majority of respondents preferred online examinations as they seem to be aware of the technology involved in preparing them, and it is easier to attempt online examinations than paper-based exams (mean of 3.70). Furthermore, question randomisation was found to be beneficial in reducing cheating habits among students (mean of 3.72). On the other hand, the strongest concern for learners who offered negative responses was the institutions' reliable electricity and electrical systems during online examination sessions

(mean 2.35). Also, the online examinations were not time-based and secure enough that learners could log in to the system and attempt the exams even before the time (2.45).

Table 1; Participants' Responses to the Usefulness and Ease of Use of the Online Examination system

SN	Proposition	SDA %	DA %	NS %	A %	SA %	Mean
Learners' Attitude towards the Ease of Using Online Examinations							
1. Participants Technical Concern							
1.1	It is easy to attempt online examinations, and I am aware of the interface (website/application) used to attempt the online examination.	9.2	8.2	9.2	50.0	23.5	3.70
1.2	I could easily access all the hardware required to assist in attempting an online examination as it was reliable, up-to-date, and could function smoothly.	21.4	29.6	13.3	29.6	6.1	2.69
1.3	The institution's electrical infrastructure is reliable to support the online examination system.	28.6	32.7	16.3	20.4	2.0	2.35
1.4	I could access examination questions immediately after the online examination sessions commenced	9.2	17.3	12.2	18.0	13.3	3.39
1.5	Online examinations reduce stress and exam anxiety	26.5	24.4	24.5	14.3	10.3	3.18
Perceived Usefulness of Online Examinations							
2. Academic Contribution Concern							
SN	Proposition	SDA	DA	NS	A	SA	Mean
2.1	Immediate feedback on online examinations helped me to get a deeper understanding of the subject	19.3	31.6	19.4	32.7	3.1	2.81
2.2	I prefer online examination than paper-based examinations	15.3	17.3	19.4	29.6	18.4	3.18
2.3	Online examinations facilitate a more adoptive learning approach than paper-based examinations.	13.3	21.4	19.4	42.9	3.1	3.01
2.4	Online exams are appropriate for any subject area	22.4	39.8	6.1	23.5	8.2	2.55
2.5	Online exams are appropriate to test learners' levels of knowledge	13.3	16.3	21.4	36.7	12.2	3.18
2.6	Online exams are fairer than paper-based exams.	12.2	25.5	20.4	27.6	14.3	3.06

SN	Proposition	SDA %	DA %	NS %	A %	SA %	Mean
2.7	Randomisation of questions reduces cheating habits among students.	9.2	9.2	16.3	30.6	34.7	3.72
3. Participants' Security Concern							
SN	Proposition	SDA	DA	NS	A	SA	Mean
3.1	I could log in to online examination sessions and access examinations before the time to commence the examinations	28.6	29.6	13.3	25.5	3.1	2.45
3.2	I could access examination sessions outside of the examination room	13.3	16.3	21.4	36.7	12.2	3.18
3.3	I could use the internet, screen capture, copy and paste, right-click menu options, browser options, toolbar options and function keys options during online examination sessions	20.4	25.5	19.4	20.4	14.3	2.83

Note: SA: Strongly agree, A: Agree, NS: Neither agree Nor disagree, DA: Disagree, SDA: Strongly disagree

Source (Researchers 2022)

3.1. Quantitative Analysis

3.1.1. Participants Technical Concern

Reliable IT infrastructures are necessary for the successful adoption of online tests. Table 1 shows that 77.6% of participants were concerned about the reliability of the technology utilised in online tests. The IAA's current IT infrastructure may not be able to handle the growing number of students taking online tests. Exams can be disrupted by slow computers, slow loading, poor network connectivity, regular power outages, and unstable power generators. 61% of participants have consigned to the institution's electrical infrastructure for supporting online examinations. Exams must be rescheduled when one of these technical issues arises, which is inconvenient and stressful for students (50.8%) (Topal, 2016; Ahmed, et al., 2021). Other researchers, including Alsadoon (2017), Dreher, Reiners, and Dreher (2011), and Farahat (2012), back up these claims.

More than half of all participants (61.3%) disagree (some strongly disagree) that the institution's IT infrastructure is reliable for online exams. In addition, 51% of respondents disagree and strongly disagree that the institution's IT infrastructure is trustworthy, up-to-date, and capable of running smoothly. As a result of the aforementioned issues, 31.3% of participants are consigned to not being able to access and attempt online examinations as scheduled. Higher learning infrastructure should be improved, and labs should be fully equipped with appropriate resources to support online exams (Uchenna, 2012). The success of online exams depends on institutional support, which includes establishing proper exam circumstances, the ease of administrative procedures, and the provision of the financial resources required for infrastructure enhancement.

3.1.2. Academic Contribution Concern

As revealed by various research, the immediate response has been thought to be a basic pedagogical advantage of online assessments from a theoretical standpoint (Hodgson & Pang, 2012; Kuikka, Kitola, & Laakso, 2014). However, as seen in Table 1, only 35.8% of respondents agreed or strongly agreed that immediate feedback in online exams helps learners obtain a deeper knowledge of the subject. The failure to recognise the value of feedback may be due to the fact that some of the online exams used at IAA are solely

summative and do not provide formative feedback, so students do not receive it. Immediate feedback can aid in the correction of misconceptions and the improvement of students' learning (Dreher, Reiners, & Dreher, 2011). On both summative and formative, it is critical to provide learners with fast and meaningful feedback (Hodgson & Pang, 2012; Kuikka, Kitola, & Laakso, 2014). The study also found that online examinations are considered a summative assessment for learning rather than a tool for promoting learning by providing constrained and real-time feedback. An online examination is not just an automated grading tool; it is also integrated into the learning process itself.

In addition, only 36.4% of respondents agreed or strongly agreed that using multimedia and simulations in online tests allows for a more authentic evaluation than traditional methods. Unlike other researchers such as Chua (2012) and Kuikka, Kitola and Laakso (2014), who concluded that modern technologies allow examinees to be exposed to video, audio, or simulations before completing various types of questions connected to the multimedia, making online exams more interesting than older approaches. Only 48% of all participants seem motivated to continue using online examinations to replace paper-based examinations. This can be viewed as another result of not using the online examination to its full potential in contributing to the learner's knowledge rather than as a tool for automated marking exercises. The difficulty in giving students relevant, timely, and in-depth feedback stems from the significant effort required to teach academic staff and help them create quality feedback, which may include employing a more innovative and efficient method such as audio, video and written feedback (Cavanaugh & Song, 2014).

Only 46% of all participants agreed or strongly agreed that using cutting-edge technology in online assessments allows students to adopt a new learning strategy called e-learning. This is in line with the results of other studies (Küppers & Schroeder, 2019). Digital learning that fits the needs of tech-savvy learners is likely to be preferred. Academic staff must move away from traditional classroom methods and embrace new methods of integrating emerging technologies into the teaching and learning environment, as e-exams are part of an online learning approach that has become mainstream for higher learning institutions. However, most higher learning institutions in Tanzania, including IAA, have been slow to embrace online learning fully. It takes time, money, and effort to build the infrastructure, skills, attitudes, and policies that make this strategy possible. Institutional support is essential to advance the online learning approach's long-term development. Reliable knowledge of the benefits of online learning and examination systems to learners can aid in their adoption, as this study found that only 31.7% of all participants found online examinations relevant to their modules.

Table 1 shows that 48.9% of all the respondents agree or strongly agree that online examinations can be used to test learners' level of understanding. Multiple choice questions in online exams are frequently criticised for testing factual knowledge but not understanding. As one participant remarked, a student who is unsure about the correct answer can simply guess. This finding is consistent with other researchers (Hodgson & Pang, 2012; Cook & Jenkins, 2010); therefore, multiple-choice items should be combined with other questions on an online exam. Short essays and writing projects that reflect learners' comprehension of the topic and critical thinking should also be considered question types. Creating non-objective questions to assess students' in-depth understanding is a big challenge when preparing for online tests (Cook & Jenkins, 2010). Considerable work is needed to equip personnel technically and pedagogically to develop better multiple-choice questions and other sorts of questions that will assess the course's intended learning outcomes (ILOs) (Kuikka, Kitola, & Laakso, 2014). As a result, 41.9% of all respondents believe that online tests are less effective than paper-based tests (Table 1). Hence, it affects the intention of students to use an online examination system.

According to the survey, 65.3% of all respondents believe that randomising questions in online exams reduce cheating. Randomising questions from a question bank, on the other hand, would mean that some students would be given relatively easy questions while others would be given more difficult ones. This finding is consistent with the findings of other researchers (Farzin, 2016; Alsadoon, 2017). As a result, adaptive testing, in which different question types are selected from a question bank and algorithmic tools

are used to assign them to levels of difficulty, is necessary to ensure that online exam questions appropriately assess the same intended learning outcomes for all students and are of equal difficulty (Jordan, 2016). As a result, only 44.9% of all participants (Table 1) agree or strongly agree that these types of evaluations alleviate anxiety and tension.

3.1.3. Participants' Security Concern.

Any exam requires a high level of security. Table 1 reveals that participants were almost evenly split on whether test materials and results are more secure when exams are conducted online rather than via traditional means. Rasouli, Rahbania and Attaran (2016) and Kuikka, Kitola and Laakso (2014) have drawn similar conclusions. Exam management systems, such as Moodle, include monitoring tools that track and record events such as login, logout, exam access, question navigation, and responses to secure data from unauthorised access. Each exam's material is securely stored in a database on a server that is only accessible to authorised personnel. Participants said it was critical to maintain the confidentiality and network security of online exams to avoid the exploitation of question banks and other data, which should be stored in a highly secure encrypted format (table 1, item 3.2). During online examinations, it is important to secure the internet, screen capture, copy and paste, right-click menu options, browser options, toolbar options, and function key options to avoid cheating habits (Table 1, item 3.3).

3.2. Qualitative Analysis.

According to Topal (2016), learners feel more comfortable taking an online exam than a paper-based exam. The idea that the online format permits learners to focus better on the questions, on the other hand, received mostly indifferent responses. One participant during the interview disagreed with this, claiming that "it is difficult to concentrate on the screen because specific issues required the use of paper, particularly those requiring calculation or algebraic manipulation". He further pointed out that "because marks are only awarded for selecting the correct option, a student who selects the incorrect option will not be recognised for using the proper approach".

When participants were asked during focused group discussions whether they thought that the use of online examinations enhanced the accuracy of results, more than three-quarters agreed that automatic marking was more accurate than paper-based marking. One participant commented that "e-exams are fair and have no bias in grading." This is consistent with Baleni's (2015) findings, which found that transparent marking and immediate delivery of grades give learners more confidence in the results than in traditional tests. Nevertheless, many participants were concerned with the accuracy of the results due to errors in questions and responses. One commented that "errors are found in questions and responses... Incorrect questions cannot be changed during the exam, and we are forced into wrong answers. " Any ambiguity in questions will invalidate the test. Therefore, subject-matter experts should review each question, and academic staff should take full responsibility for the assessment process. Four-fifths of respondents considered that successfully implementing online exams required the maintenance of banks of validated questions. During interviews, one respondent argued that "we should learn from other higher learning institutions around the globe where they emphasise the use of an online examination committee to oversee the entire online examination process."

Furthermore, the assertion that the technology of online exams is sufficiently effective in dealing with cheating and plagiarism drew the most vehement criticism. Preventing cheating during online tests can be difficult, considering the availability of technologies such as Bluetooth, wireless networking, mobile phones, and wearable technology. These allow students to search the Internet and communicate with others during exams in ways that are not easily blocked. Furthermore, when large groups of students take exams at different times, one group may gain an advantage over another by passing on test information. As a result, cheating may be difficult to prevent, especially because tech-savvy students will always find new ways to cheat. Despite the fact that the IAA has policies prohibiting students from using their phones during tests

and ordering them to switch them off, numerous participants cited unethical activity in their comments. One person wrote, "It is easier to cheat on an online exam I frequently share a screen photo with the entire group using my smartwatch." "I use my cell phone to text and speak with pals," said another. As a result, finding strategies to reduce cheating is difficult. More than half of the participants mentioned the importance of combining various techniques and staying current with innovative security software solutions. During an online exam, the Secureexam browser, for example, restricts students from opening any other windows and disables right-click functions such as copying, pasting, and screen capturing (Anusha., Soujanya.T, & S.Vasavi, 2012; Sarayrih & Ilyas, 2013).

Authentication of examinees is another crucial feature of security, as most participants agreed. For this purpose, simply requiring a user name and password is insufficient. To enable invigilation and authentication, detection technologies such as webcams, biometric keystroke analysis, and other sophisticated software are available, allowing the system to verify students' identities and certify their achievements. However, in the case of the blended method used at IAA for distance students' exams, identity authentication and monitoring are more difficult because, unlike in the traditional setting of a classroom with a human invigilator, remote students typically take exams in uncontrolled environments such as their homes or public places. Universities, as a result, require real-time invigilation to demonstrate and sustain integrity. Students can take examinations in any location by using remote proctoring software that tracks their mouse movements and their head and eye movements to detect cheating attempts. One participant claimed that "Online examinations are better only if the institute improves the quality of lab facilities, such as reliable and well-connected computers and software that can well manage online examinations in real-time. Reliable electricity backup in case of power loss during exam sessions and good internet speed to avoid loading time and screen freeze problems. "

"The institute should research more user-friendly and appropriate software for online examinations rather than just depending on Moodle" another participant claimed. Although Moodle does not have fully functional anti-cheating and anti-plagiarism features, it offers various options for randomising the order of multiple-choice questions and shuffled answers, reducing unethical behaviour. The vast majority of participants thought that using random questions from a bank made cheating less likely during online tests than on paper, which is consistent with Topal (2016)

4. Conclusion and Recommendations.

Although IAA's sole online exams are summative tests administered in computer labs, participants perceived online exams were more accessible than paper-based exams (Table 1, items 1.1 and 2.2). Nevertheless, formative testing should be done frequently. Online exams can be administered at any time and location, including during lectures, and can be integrated with bite-sized portions of relevant learning by utilising students' mobile devices and eliminating the difficulties of stopping other module classes from accommodating normal class sessions (Shraim, 2019). The recent major development and spread of online and distance education are important. Tanzania's educational landscape is changing, with most higher learning institutions in various phases of adopting online learning and online assessments (Mathew, Alkawaz, & Johar, 2018). If other colleges embrace this strategy, flexibility in providing online tests considering the academic contribution, technical issues, and security aspects of related infrastructure improvements must be carefully considered.

This study investigated the learner's attitude toward the ease of use and usefulness of such exams. The study identified several categories, such as participant technical concern, where things like familiarity and easiness of using software, hardware, and other technologies associated with online examinations were evaluated, like a stable and reliable power supply. Such subcategories can irritate learners from using and accepting online examinations. However, the category also sheds light on the anxiety and stress caused by online examinations. Another category was an academic contribution. The study found that learners prefer online exams due to factors such as immediate feedback, support for a more adaptive learning approach, and fairness compared to paper-based exams. Thus, online examinations are acceptable and useful to provide a

more reliable and effective learning approach. The last category is security concerns, where the study's compelling facts show that security in online examinations needs to be a top priority as there are several ways in which learners can cheat using the internet and other online resources. Thus, TAM can provide reliable knowledge and training to both facilitators and learners in using online learning and online exams positively.

Furthermore, the effectiveness of online tests can be increased by developing them to be authentic, dependable, secure, and flexible to facilitate learning and guarantee compliance with learning outcomes. Institutional support is required for successful implementation, which includes creating suitable conditions for conducting online examinations through the use of software such as Secureexam and Respondent Lock Down, facilitating administrative procedures, providing necessary financial support, improving infrastructure, building academic staff capacity, and providing guidance as well as technical and pedagogical support. Moreover, the study proposes the creation of a special committee to regulate online examinations at the institute. According to this study, the online exam strategy should be part of the institution's long-term planning. This is in the best interest of long-term growth. Finally, it is the recommendation of the study that the government of Tanzania, through the ministry of education, should emphasise moving from paper-based examinations to online examinations. This will reduce higher learning institutions' examination costs in invigilation and marking and also provide more time for research and consultancy to facilitators. It is this study's recommendation that more research should be conducted to find facilitators' perceptions on online examinations and online learning in Tanzania's higher learning institutions' collaboration with different technologies that can be used to enhance this process.

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