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Views of the University Students towards Implementation of Learning Management System to Enhance Blended Teaching and Learning: Experiences from UDOM e-classroom

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Abstract
This study explored the views of students towards adoption of the Learning Management System in enhancing teaching and learning processes. It used the UTAUT lenses to organize the views of students about eclassroom. The study focused on the experiences of UDOM students who have the experience of using the eclassroom system as the LMS. It was the qualitative study which used an online qualitative survey to collect data from the participants from students in two consecutive years. About 315 participants were able to fill the online questionnaire. The conceptual content analysis technique was used for data analysis basing on the four constructs of the UTAUT as the predetermined themes. The findings show that students view use of LMS positively due to learning opportunities introduced, effectiveness, saving cost as well as saving time achieved during the interaction with the system. However, facilitating conditions are to be improved to remove barriers like poor network and security issues for smooth adoption of LMS by others. The study concludes that, adoption of LMS in universities is the right path to embrace since it is consistently proven by optimistic views of students that the system is more useful in terms of the four constructs of the UTAUT model. Key recommendation is that the institutions should be active enough to create a conducive environment as per the Tanzania Commission for Universities 2022 guidelines on online courses delivery and management.

Keywords: Views, Learning Management System, eclassroom

1. INTRODUCTION

Learning Management Systems [LMSs] are being used in higher education institutions worldwide to improve teaching and learning (Alhassan, Ayanore, Diekuu, & Prempeh, 2021; Okoye et al., 2023; Paetsch & Drechsel, 2021). The term learning management system (LMS) is used to describe a wide variety of software applications whose primary function is to facilitate the delivery of and access to

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various forms of online educational content to learners, educators, and administrators. These services typically include the bare minimum in terms of infrastructure, such as restricted access for authorized users, a variety of educational materials, and methods of contact (Chowdhury & Kootsookos, 2019). This primary function of LMS manifests that LMS is highly needed especially in this era of Information and Communication Technology [ICT] innovations. Another term that can be used interchangeably with LMS is online learning platform. However, using LMS may not necessarily mean that it will be used by 100%; it can be achieved through a blended approach. Blended learning is an instructional strategy that integrates traditional classroom instruction with online and digital resources (Hrastinski, 2019). It considers not just the delivery of education but also the potential interactions and integrations between technology-supported and non-technology-supported components (Passey, 2020). With this regard, the implementation of LMS enhances blended teaching and learning.

The use of ICT in education has been emphasized by various global frameworks. The UNESCO World Education Report from 1998 emphasizes the importance of providing instructors and students with adequate access to cutting-edge digital resources and the Internet. To ensure that all students meet or exceed rigorous academic expectations, teachers must be proficient in the use of modern digital resources. The level of ICT integration in teacher education programs is directly related to the quality of professional growth in teacher education (Bhattacharjee & Deb, 2016; UNESCO, 2002). Similarly, the Sustainable Development Goals [SDGs] number 4 and 8 stress on the use of ICT and related innovations in secondary education and higher learning institutions and other sectors respectively (UN, 2015)

According to African 2063 agenda (AU, 2015), in order to lay the groundwork for competitive economies built on human capital to complement the African continent's rich endowments in natural resources, at least 70% of all high school graduates will pursue post-secondary education in technical and vocational education and training [TVET] institutions and universities, with 70% of them graduating in the sciences, technology, and innovation programs. In Tanzania, the Education and Training Policy (United Republic of Tanzania, 2014) stipulates that the government shall ensure the use of science and technology in all levels of education. In the same vein, the Tanzania Education Sector Development plan of 2016/17 – 2020/21 emphasizes the use of ICT in higher learning institutions (HLIs) as one of its objectives, with the strategy of developing the use and availability of ICT software and hardware for both resident and distance learning such as e-learning and e-libraries.

Within these frameworks, the implementation of LMS to enhance blended teaching and learning in HLIs is inevitable.

There are plenty studies that have investigated the influence of technology on teaching and learning in higher education. Okoye et al. (2023), emphasized the difficulties Latin American universities face in implementing digital technologies and the need for policy reforms to address the obstacles and bottlenecks. Similarly, Saleh, Fakhri, & Alyaseen (2021) highlighted the significance of e-governance systems in enhancing government operational excellence, whereas Paetsch & Drechsel (2021) investigated the factors influencing pre-service teachers' intention to use digital learning materials during the COVID-19 pandemic in Germany.

Additionally, Akram, Abdelrady, & Al-adwan (2022), emphasized the need for professional development programs to improve teachers' digital skills by conducting a systematic study of instructors' opinions of technology integration in teaching-learning practices. While Lembani, Mulenga, Mwewa, & Mhango, (2023) looked into self-directed learning in a nation with limited access to technology, Kolil & Achuthan (2022) conducted a longitudinal study on teachers' acceptability of mobile virtual labs. Last but not least, Maheshwari (2021), did an empirical study on the variables influencing Vietnamese students' inclinations to engage in online learning.

In Tanzania, several studies have been conducted on e-learning in HLIs, but in different focus. The acceptance, deployment, and implementation of e-learning systems at Tanzanian universities are widely hailed for their status as cutting-edge tools for improving quality of education (Almas & Machumu, 2021). However, HLIs in Tanzania confront obstacles when adopting e-learning in education. According to Kisanga & Ireson (2015), poor infrastructure, financial limitations, insufficient support, a lack of e-learning competence, and teachers' aversion to change are the five main obstacles to e-learning in Tanzanian HLIs.

While Mwakyusa & Mwalyagile (2016) and Kisanga & Ireson (2015) provided insight into the obstacles, barriers, and strategies for the adoption of e-learning in Tanzanian universities, Almas & Machumu (2021) discussed the viewpoints, motivating factors, and proficiency of the teachers in using an e-learning system. But Ghasia, Machumu, Zhu, & Depryck (2020) relied on the outcomes of the implementation of the e-learning system in HLIs, including its triumphs, difficulties, and way forward. Ndibalema (2022) highlights several limitations towards adoption of ICT in HLIs such as digital inequalities, lack of reliable internet access, low readiness and technological competence among instructors and students, and limited availability of digital solutions and that most students faced social emotional challenges due to rapid and blind transition to online distance learning. According to the author, lack of digital culture even before covid 19 is concluded as a strong factor leading to low pace of transition to online learning.

Following the outbreak of corona virus throughout the world in 2020 the university of Dodoma through the College of Informatics and Virtual Education introduced an online learning management system known as civeclassroom.udom.ac.tz in order to make sure that teaching and learning activities continue even when students are not in campus. Later on, the system was renamed UDOM e-classroom for the purpose of including all other colleges. This learning management system was firstly used by all undergraduate students in the college of informatics and virtual education. Soon later, some lecturers in other colleges used the system depending on the self-drive and passion of an individual instructor.

Despite the growing adoption of LMS in universities, there is a gap in scientific knowledge of students' perspectives on blended learning, as the reviewed studies mostly concentrated on the viewpoints of instructors and the difficulties of e-learning adoption in Tanzanian higher education institutions. Therefore, the main objective of this study was to explore the views of university of Dodoma students based on their experiences of the actual use of e-classroom learning management system.

The unified theory of acceptance and use of technology (UTAUT)

The views of students on the use of LMS were scrutinized using the lenses of UTAUT theoretical framework. UTAUT is composed of four variables that have a direct impact on people's behavioral intentions, which then have an impact on how they use things. Effort Expectancy (EE), Social Influence (SI), Performance Expectancy (PE), and Facilitating Conditions (FC) are the four dimensions of UTAUT. The UTAUT outperformed the earlier theories and empirically demonstrated its efficacy.

Performance expectancy

According to Venkatesh et al. (2003), performance expectancy (PE) is "the extent to which an individual believes that using the system will help him or her to attain more gains in job performance." The benefits that students would receive from adopting social media for education are related to this factor. The research revealed that PE significantly affects a person's intention to use new technology. For instance, a 2009 study by Kijsanayotin, Pannarunothai, and Speedie evaluated PE in the context of Thailand and shown how it influences the user's intention in a favorable way. Similarly, Umrani-Khan and Iyer (2009) used a model they named "ELAN" to investigate how PE affected students' intentions to adopt e-learning. Several studies revealed that there is a significant positive relationship between PE and the

intention to use technology (Wang, Wu &Wang, 2009; Balakrishnan 2017; Gharrah et al., 2019). In the context of this study adoption of ICT for educational purposes, was measured in terms of usefulness in learning, efficiency of task completion, and improvement in quality of learning. Consistent with the literature, this study therefore focused on the usefulness of e-classroom to students in terms of helping them in performing their tasks, reducing costs and serving time when doing their assignments.

Effort expectancy

Venkatesh et al. (2003) insist that this aspect relates to "the degree of ease associated with using the system." It is worried about how easy it is to use Social Networking sites (SNs), or how much work the student has to put into complete their duties utilizing SNs. The study conducted by (Alalwan, Dwivedi & Rana, 2017) found that effort expectancy significantly affected the individuals' feeling to use the banking services via mobile phones in Jordan. Several studies were focused with assessing the expected effort in utilizing SNs. According to the findings of a study looking at Moroccan students' attitudes on adopting electronic business leadership, effort expectations had an effect on their willingness to embrace it (Abelmonaim, 2013). In this study, effort expectancy is defined as learners' opinions of how simple it is to use ICT in higher learning institutions. Many researches have revealed a strong correlation between learners' intentions to use new technologies and expected effort. When examining learners' ongoing desire to participate in e-learning activities, the user friendliness aspect of the system to learners on their daily learning activities was focused.

Social influence

According to Venkatesh et al. (2003), social influence is "the extent to which an individual perceives that the significant others believe he/she should use the new system." The acceptance and support of utilizing SNs for educational purposes by society, family, and friends is addressed by this element. Social influence had a significant impact on the intention to use that service, according to the findings of a study conducted to determine the elements influencing the acceptability of e-commerce in the Kingdom of Saudi Arabia (Alkhunaizan & Love, 2012). Furthermore, a study by Abelmonaim (2013) found that social influence has a significant influence on Moroccan students' intentions to adopt the fundamentals of technological initiative. In this study SI focused on the testimonies and appreciations on how much learners were interested with the introduction of e-learning classroom by instructors. This was done in line with the findings by Al-Zedjali et al., (2014), who found a correlation between social influence and the intention to use social networks in education.

Facilitating conditions

Facilitating conditions refer to “the degree to which an individual believes that the organizational and technical infrastructure exist to support the use of the system” (Venkatesh et al., 2003). Facilitating conditions have a direct impact on the actual usage in UTAUT2 theory. This dimension addresses the students’ ability to use SNs for educational purposes at university. It includes the facilitating conditions relating to infrastructure, such as electricity, internet, personal computer, tablet computer, etc. (Alalwan et al. ,2017) revealed that the facilitating conditions are considered as important factors related to using the banking services via the mobile phone. Furthermore, other studies revealed that there is a significant positive relationship between facilitating conditions and the actual usage (Venkatesh et al., 2003; Nawi, Nasir & Al Mamun, 2016; Gharrah et al., 2019). In this study, it has been demonstrated that users will have a high tendency to use a particular technology if there is a support system in place to guide their use. In this study, Facilitating Conditions related to network, notification, lack of skills of using the system are the key areas that were focused as the FC in accessing materials and uploading or submitting assignments on time.

2. METHODS

Qualitative research approach was used to explore the views of university students towards the implementation of Learning Management System (LMS) to enhance blended teaching and learning. Longitudinal survey design was employed to collect data from the same group of participants over a period of two years. This design enabled the researcher to observe consistency or changes in the views of the participants over time (Ary, Jacobs, Sorensen, & Walker, 2010). The study populationn comprised of bachelor degree 2nd Year students, 3rd Year students, and Master degree students from UDOM who have experience in using the UDOM eclassroom system. The researcher administered the online qualitative survey (Neville, Adams & Cook 2016) to the participants at the end of each academic year to gather their views on the use of the LMS in two consecutive years. An online qualitative survey was used to collect data from the participants. The survey was designed to gather information on the participants' views towards the implementation of the LMS, including their perceptions of the benefits and challenges associated with its use. Since the study was about the views of the students, the target population included the university students from the university of Dodoma. The University of Dodoma was used due to the fact that, there is an eclassroom LMS which is used to facilitate blended teaching and learning. About 315 students were able to fill the survey questions online. According to Medlin & Ham (1999) rrecruited online sampling technique was used to collect data from students who were registered to eclassroom system. This means that screened and unrestricted survey online techniques were not applicable since the survey was specific to those students who have experience of using the LMS. Content analysis approach was employed to analyze the data collected from the online survey. Conceptual content analysis which is the type of content analysis that focuses on the number of times a concept occurs in a set of data and is generally focused on explicit data was used basing on the UTAUT model. It was necessary to use the conceptual content analysis technique because it enabled the researcher to derive themes as well as perform a frequency analysis of the texts about the views of students related to performance expectancy, effort expectancy, social influence and facilitating conditions as the pre-determined themes of the study. All ethical issues have been observed as per the university of Dodoma research guidelines.

3. RESULTS AND DISCUSSION

Survey Participants

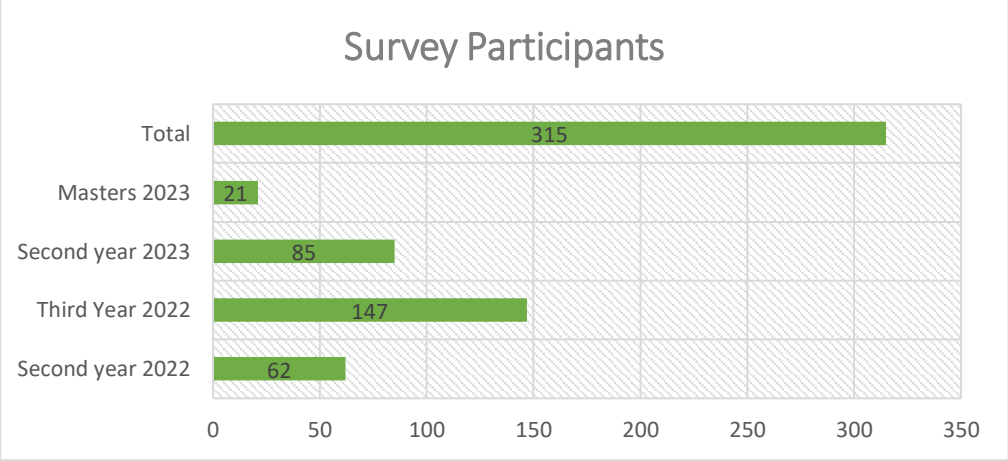

Figure 1: Survey participants

Figure 1 presents the number of participants who participated in the survey conducted online. Both undergraduate and postgraduate students participated in the survey. The number of participants indicate that the sample size is representative enough to reflect on the views of the student population in the University.

Based on UTAUT model, the results and discussion of this study focused on performance expectancy, facilitating condition, effort expectancy, and social influence.

Performance expectancy

Many authors define "performance expectation" (PE) as an employee's conviction in their ability to succeed after being exposed to a new concept or idea. According to a number of studies Nikolopoulou, Gialamas, & Lavidas (2021), performance expectations appear to play a substantial role in predicting user intent in ICT environments. In this study, performance expectations of learners rely on learning opportunities, efficiency, usefulness and accountability as shown in Figure1 below.

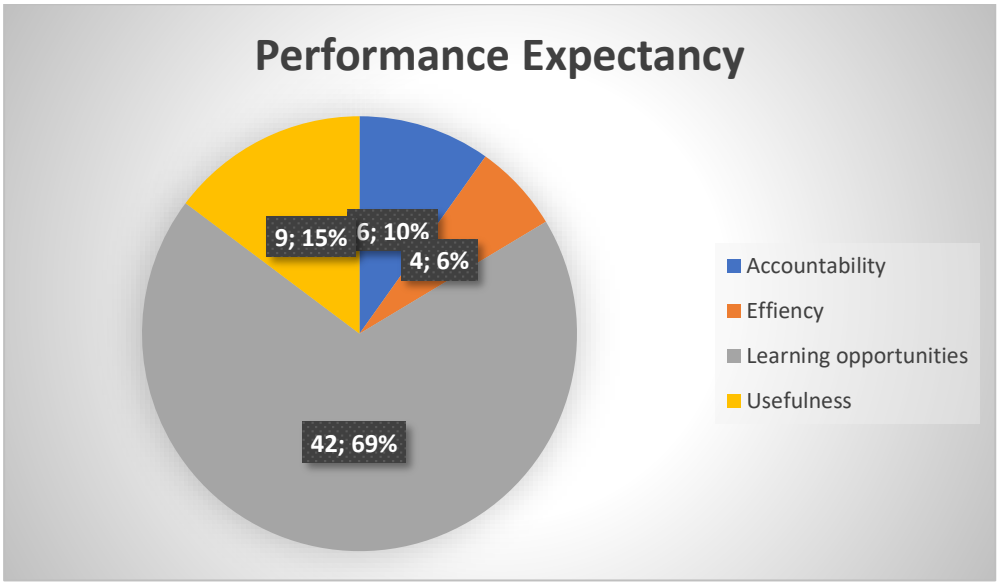

Figure 2. Performance Expectancy

The study findings in figure 1 indicate that learning opportunities is mentioned as one of the most advantages brought by eclassroom. This means that students were introduced to new learning environment different from what they are used to. The eclassroom system contains different modules which enabled students to interact with at their own convenience. Through the system, students were able to access materials (materials module), formulate their groups online (my groups), submit assignments (assignment module) and engage in discussion with colleagues through the class forum module. All these are opportunities created by eclassroom to students. Usefulness is rated the second aspect in relation to performance expectancy whereby students view the system as useful to them following the opportunities they obtained. For accountability, students are of the view that the system has automatically enforced accountability among themselves since excuses of doing and submitting assignments on time are no longer entertained. Lastly, efficiency is another aspect of performance expectancy identified by the students. This implies that using online system for learning is viewed to be more efficient as compared to the manual system.

The presented findings imply that students at the University of Dodoma have higher expectations that the use of e-Classroom will have positive impact in learning process. These findings and implications concur with various studies with mixed findings. While Testa & Tawfik (2017) found that performance expectation is not significantly related to students' intention to use e-learning technology,

Tuan, Thao, Anh, & Dien (2020) found that performance expectation is integral to learners' intention to use e-learning as a learning tool. For example, Saleh et al. (2021) discovered that the people of Syria feel that by utilizing the E-governance system, they will be able to learn more and become more efficient government workers. Similarly, Mahenge (2016) discovered that the development of ICTs offers universities in third world countries a wonderful opportunity to improve the delivery and accessibility of learning materials, given that 85 percent of students own laptops, 65 percent own smartphones, and 78 percent own mobile phones. Meanwhile, the majority of universities in Tanzania possess the fundamental ICT infrastructure required for the establishment of e-learning, including Local Area Network (LAN), Internet, computers, and mobile technology. Also, Ghasia et al. (2020) found that Mzumbe University has firstly implemented e-learning systems as one of the teaching and learning methodologies. Secondly, the plan includes creating a number of online, e-learning, and blended-learning courses. For instance, the institution has successfully offered one postgraduate degree in part online since the e-learning system's establishment. These studies suggest that e-learning technology is particularly beneficial to students since it helps them to streamline their learning processes and improves student performance.

Facilitating conditions

Vankatesh, Morris, Davis, & Davis (2003) defined facilitating conditions as the criteria that convince consumers that a technological and organizational infrastructure can support an e-government application system. In this study, the respondents' views focused on training, network and the general capability of e-Classroom system as shown in Figure 2

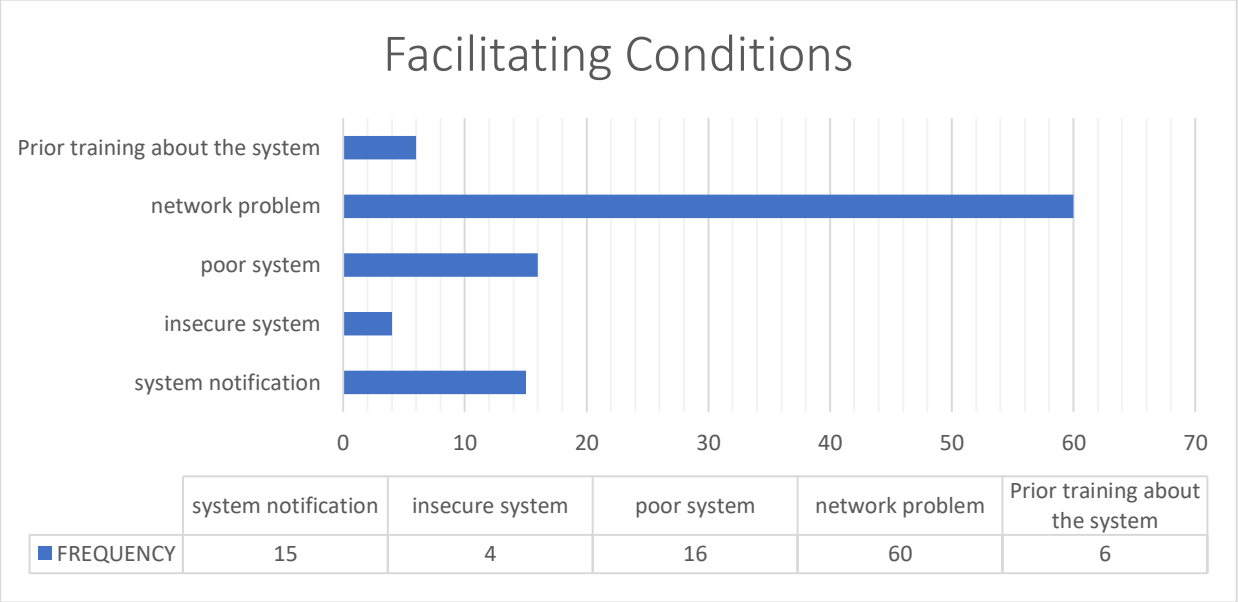

Figure 3. Facilitating conditions

The findings in figure 2 show that facilitating conditions is the main determinant of the technology adoption in teaching and learning. As shown in figure 2, prior training about the system, network problem, poor system, uncured system and system notification are the main conditions that facilitate adoption of the technology. From the above findings it evidently proven that internet connection is the major obstacle in facilitating e-Classroom system. Moreover, the system needs to be improved in terms of security, notification and the general system capability. These findings are supported by Mwakyusa and Mwalyagile (2016) who found that impediments to e-Learning applicability and usability include insufficient ICT infrastructure, insufficient technical and management assistance, and limited internet

connection. Similarly, Mahenge, (2016) pointed out that the majority of issues are brought on by a strong reliance on the Internet connection, an increase in users that results in decreased system performance for automated/semi-automated learning systems, a lack of resources and network bandwidth, and high costs because of a strong reliance on the Internet. However, Yang, Guo, & Cui (2023) Revealed that teachers' internalized beliefs and the availability of external resources have a direct impact on whether or not Chinese educators at higher vocational colleges employ information and communication technologies in the classroom. Despite the challenges caused by the facilitating conditions, it is clear that the students are eagerly determined to use LMS in the teaching and learning process.

Effort expectancy

Student Effort Expectancy (EE) is defined as the degree to which students anticipate that using the system will be straightforward and free of problems (Vankatesh et al., 2003). In this study, effort expectancy is defined as learners' opinions of how simple it is to use ICT in higher learning institutions which base on conveniency, saving time and money as well as simplifying work as shown in figure 3.

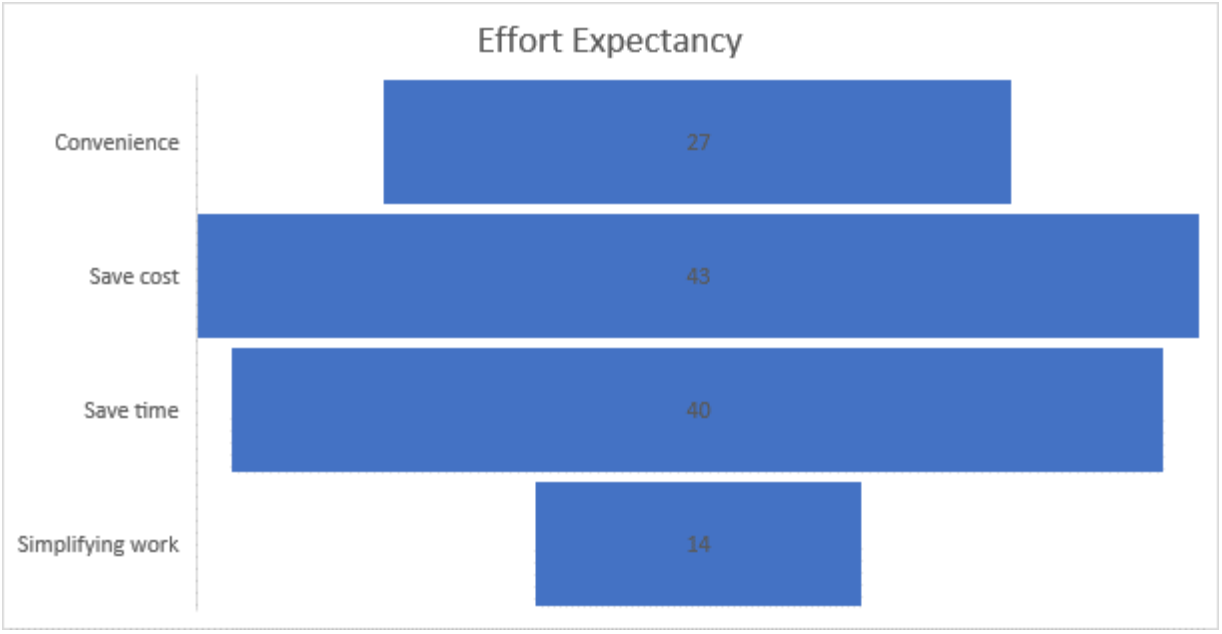

Figure 4. Effort Expectancy

The findings presented in figure 3. show that students are impressed by the system due to its ability to save time, save cost, simplifying work and being convenient. Conveniency is mentioned because students were free to do and submit assignments anywhere, they may be at their own pleasure without being required to be at campus or going to offices. Even if they might be at campus, they can submit their assignments while in their rooms and good enough even during weekends something which was not applicable in the traditional system (paperwork). The aspect of saving cost means students were no longer required to print and photocopying the work (assignments) as well as spending money for transport to collect the assignment for those who live off campus. All individual and group written assignments are now submitted online. Before the system, students were spending a lot of time moving around to print works and submitting them to lecturers. Unlike before, submission of assignments online has greatly reduced time to be spent for movements. Simplification of the work entails that it is easier to accomplish tasks given online as compared to the paper work system. These findings concur with Kolil & Achuthan (2022) who revealed that the effort expectance influences teachers' intent to use

mobile Visual Lab as a teaching instrument. In addition to that, (Saleh et al., 2021) contended that there is a strong relationship between effort expectance and government operation excellence.

Social influence

Social influence is the degree to which an individual values the opinions of others about his or her adoption of a new technology (Kolil & Achuthan, 2022). Students are more likely to adopt the usage of internet for educational purposes if they perceive that influential people (such as stakeholders, school officials, and colleagues) influence their use of e-learning technologies.

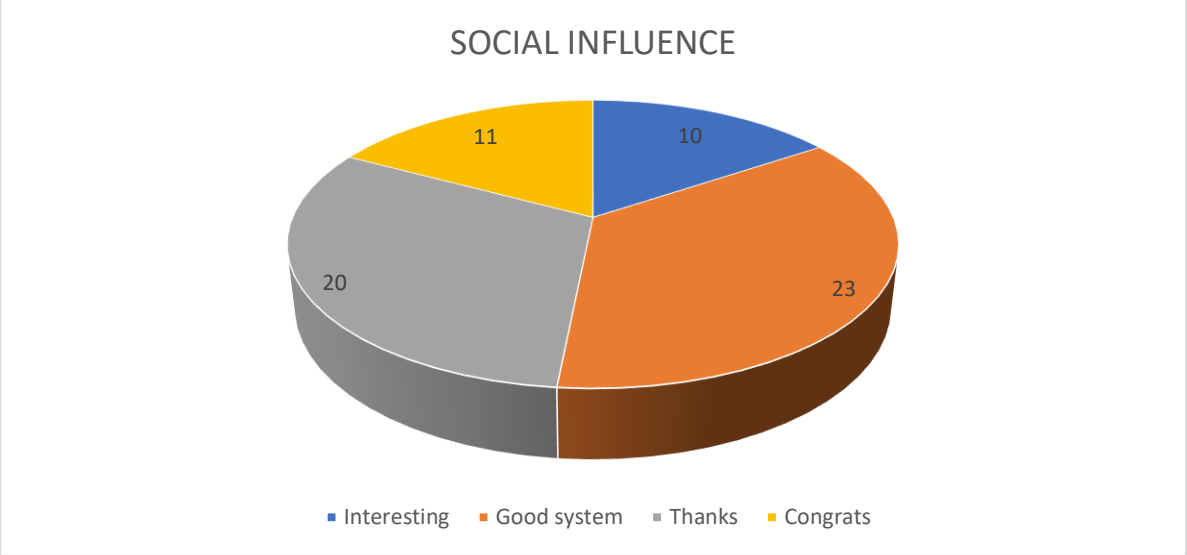

Figure 5. Social Influence

The findings shown in figure 4. present the words of gratitude expressed towards the department and more particularly instructors who decided to use the eclassroom system to enhance teaching and learning activities. These words of appreciations for the system indicate that they find the system to be intriguing. Based on these findings, it appears that students have been influenced by the instructors to use eclassroom for teaching and learning activities. All these words of appreciations bring to attention one important message that the system is positively and optimistically spoken by students among themselves hence easily accepted and massively supported. In other words, if other instructors would wish to use eclassroom system, they will no longer encounter resistance from students since those who have already used will be ambassadors to their peers. In addition to that, the institutions will have a strong base of adopting eclassroom without fear of any resistance from students. These findings are the same as that of Yang et al. (2023) which indicated that Chinese higher vocational college instructors' psychological perspectives and social influence factors directly impact their ICT use in teaching.

Suggestions for improvements

Students presented their views on how to improve eclassroom system as shown in figure 5;

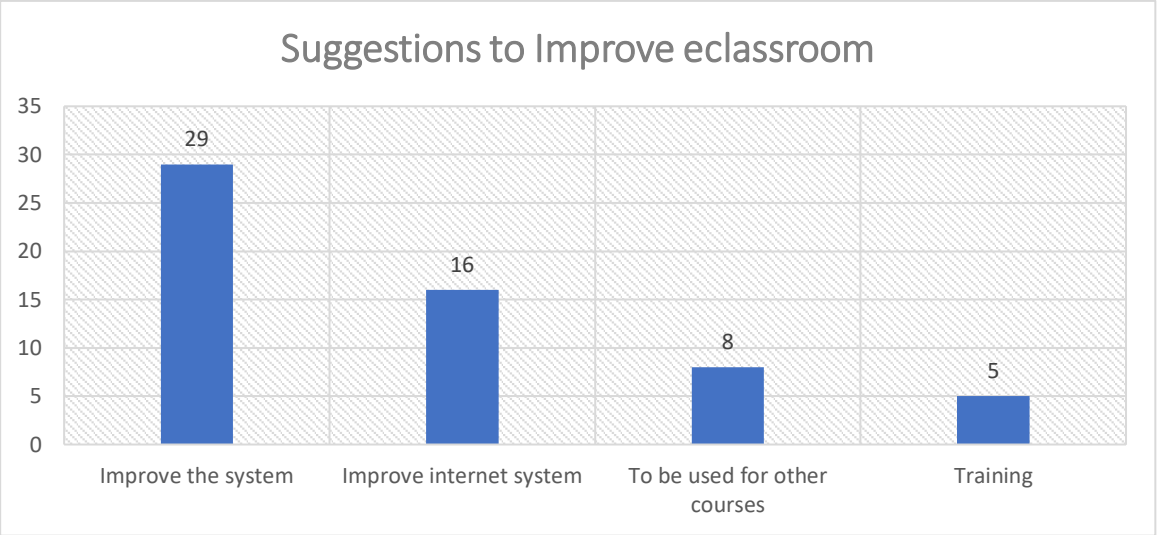

Figure 6. Suggestions to improve eclassroom

The suggestions presented in figure 5. indicate that there are few things to be done to make the LMS function smoothly. Fortunately, all these things are within the respective institution's capacity upon the management will and proper attitudinal disposition by the faculty members. Improving the system means working on the features of the technology itself to make them more user friendly to users (students and instructors). The improvement will be done from time to time basing on the feedback from those users. Improving internet system implies boosting the network connections and related infrastructure to become fast and reliable so that interaction with the system becomes easier. Eclassroom to be used for other courses show that the system is widely used in the University, probably few passionate instructors were able to use it. Training is an important component that needs to be conducted to enable users work with the technology smoothly. This view of training indicate that the students used the system without any kind of training but successfully interacted with it. Therefore, just a little training session will make them comfortable using the system.

4. CONCLUSION

This study aimed to access Views of the University Students towards Implementation of Learning Management System to Enhance Blended Teaching and Learning using experiences from UDOM e-Classroom. The findings showed that all views of the University students towards e-learning system considered as having positive impact on teaching and learning processes. In addition to that, facilitating conditions are reported to be the major problem when accessing materials and uploading assignments through the eclassroom system. This implies that network problem is a major factor that hinder the application of e-learning technology that makes harder for students to access material and uploading assignments. Basing on this, it is fair to conclude that, adoption of LMS to enhance blended teaching and learning is the right path to be embraced by individual instructors and the institutions at large. It is proven beyond doubt by the optimistic views of students that the system (eclassroom) works properly contrary to the long-time deep-rooted fears among instructors and institutions to change from traditional system of paperwork to online system (paperless). If the students were able to interact with the system despite the internet challenges they experienced, it means if the system is improved more meaningful interaction will be ensured.

It is recommended that the institutions should take bold decisions and deliberate efforts to create a conducive environment to facilitate smooth adoption of eclassroom by instructors and students who are standby to use the technology. Lucky enough, the regulatory body for universities (Tanzania Commission for Universities) has issued Guidelines for Online and Blended Delivery Modes of Courses for University Institutions in Tanzania (TCU, 2022) which are meant to guide these institutions about e-learning.

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