Assessing Students' Perceptions of Moodle Usage for Teaching and Learning: A Case of College of Business Education, Dar es Salaam Campus, Tanzania

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ABSTRACT

The advancement of Information Communication Technologies (ICT) has stimulated the development of new learning experiences through using software applications or platforms that deliver, manage and track educational or training programs in the universities. Through the use of blended learning, e-learning platforms like moodle have improved learning experience by integrating virtual classes, video conferencing, presentations, and testing in education delivery. This study aims to show how students perceive the use of moodle for teaching and learning at the College of Business Education (CBE) Dar es Salaam Campus in Tanzania. The study was guided by was guided by the Connectivism Theory (CT). The study adopted a case design because it used a short period of time and constructed at a single case study at College of Business Education (CBE). The target population was 11,924 students from the College of Business Education (CBE) who used moodle as their learning platform. Probability sampling specifically simple random sampling was used to attain the sample size of 374 respondents. Both qualitative and quantitative approaches were employed in the study. The quantitative data was collected through the Likert scale questionnaire was processed through coding, tabulating and analysis using MS excel. Further, the processed and analyzed results for research questions two and three were produced statistically using tables and figures. Apparently, the qualitative data were recorded and immediately transcribed, shared with the respondents for collection in case there were mistakes made, edited, summarized, tabulated and presented in the narrative. Also, the thematic-content analysis was undertaken to analyze the qualitative data obtained through the semi-structured interview and then presented using Tables of summaries and narratives. In addition, the presentation and discussion of the findings were triangulated during the presentation of the responses for each research question. The findings revealed that the integration of moodle into the learning process has enhanced the overall quality of teaching and learning and blended learning through moodle has improved understanding of the course materials. The study recommended that the curriculum designers and policymakers at the college should develop policies that promote the effective use of technology in education including guidelines for implementing moodle in blended learning environments to ensure equitable access to quality education for all students.

Key Words: Blended Learning, Learning Management System, Moodle

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I. INTRODUCTION

The rapid advancement of Information and Communication Technologies (ICT) has transformed the educational landscape, offering new learning experiences for students (Mustafa & Ali, 2023). A critical tool in this transformation is the Learning Management System (LMS), a software platform that facilitates the management, delivery, and tracking of educational content (Al-Sayid & Kirkil, 2023). LMS platforms, including Moodle, provide essential features such as course creation, content distribution, learner enrolment, communication tools, assessments, grading, and analytics (Asyari, 2024). In the context of blended learning, Moodle serves as an integral component that combines face-to-face learning with online elements, creating a more flexible and engaging learning environment (Loglo&Zawacki-Richter, 2023).

Moodle as the blended online platforms serve as the course delivery mechanism (Mwandosya, 2023). Universities and colleges use e-learning platforms like moodle due to built-in collaborative capacitation for serving educational purposes as are powered with different modules including group mail, virtual classes, video conferencing, presentations, and testing (García-Murillo et al, 2023).

Certainly, Moodle serves as a supportive tool to capacitate e-learning processes enables students and academicians to waive the classroom contact time barrier, increase independence, speed, and agility, easily access electronic material, reduce face-to-face contact space barrier, apprehend the individualized timely learning content accessibility at any place and spaces (García-Murillo et al., 2023). Moodle, as an open-source LMS, provides a range of features and tools to support online learning (Mustafa & Ali, (2023), enabled instructors to create and manage course contents, assessments, and communication with learners.

Blended learning with Moodle offered the ability to engage in asynchronous and synchronous student discussions, the opportunity for adaptive quizzes, and individualized feedback for teaching and learning (Masalimova et al., 2022). Based on that stance, Moodle provided the dynamics and interactivity for teaching and learning to the classroom elements (Aagaard, et al., 2023; students are also engaged in the in-person classroom sessions equipped with module contents at the same time academicians managed the learning process. Additionally, Masalimova et al. (2022) mentioned that the learners utilized Moodle to access supplementary materials, complete online assignments, participate in discussions, and interact with colleagues. Subsequently, in Tanzania, the full utilization of Moodle in blended learning continued in inclusivity take-off articulated into sandwiching of traditional pedagogical boundaries and lifelong learning .

Moodle's widespread adoption in higher education is driven by its versatility in supporting both asynchronous and synchronous learning, enabling students to access materials, participate in discussions, and complete assignments at their own pace (García-Murillo, , 2023). It enhances learning by breaking down physical classroom barriers, allowing students and instructors to engage with course content anytime and anywhere (García-Murillo et al., 2023). Despite its advantages, including reduced classroom utility costs and enhanced learning flexibility, the adoption of Moodle in Tanzania has faced challenges such as unreliable internet access and power outages (Makruf & Tejaningsih, 2023). The aim of the study is to assess how students perceive the use of moodle for teaching and learning at the College of Business Education.

1.1 Statement of the Problem

Moodle, as a Learning Management System (LMS), has been widely adopted in Higher Education Institutions (HEIs) due to its ability to offer flexible, cost-effective alternatives to traditional face-to-face learning. At the College of Business Education (CBE) Dar es Salaam Campus, Moodle has been integrated into the teaching and learning processes to address challenges such as limited teaching staff (Aleb, 2022), rigid learning schedules and difficulties in accessing teaching materials (Asyari, 2024). Despite its benefits, the full potential of Moodle has not been realized due to persistent obstacles including unreliable internet connectivity and resistance from both students and instructors, often rooted in unfamiliarity with the platform (García-Murillo et al., 2023).

Additionally, the lack of technical skills, inadequate training, and insufficient motivation continue to affect both students and instructors in effectively utilizing Moodle (Mtani & Mbelwa, 2022). Students from disadvantaged backgrounds often face financial limitations that hinder their ability to acquire the necessary digital devices and training required to use Moodle effectively (Mwandosya, 2023). While some students with access to better technological infrastructure are managing to benefit from the platform, many still struggle to overcome the barriers posed by the transition to digital learning (Cohen et al, 2018).At the College of Business Education (CBE) in Dar es Salaam, the use of Moodle is part of the institution's blended learning approach. However, students' perceptions of its effectiveness and challenges remain critical to understanding the overall impact of Moodle on teaching and learning.

1.2 Research Objectives

This paper needs to assess students' perceptions of Moodle usage for teaching and learning at CBE, Dar es Salaam Campus.

II. LITERATURE REVIEW

2.1 Theoretical Review
2.1.1 Connectivism Theory (CT)

Connectivism was developed in 2005 by George Siemens as an emerging contemporary networked learning theory (Blaschke, 2021; Siemens, 2005). Also, Connectivism Theory (CT) hypothesized the current technological development to shift the learning information and networking based on decentralized approaches. Certainly, connectivism refolded Moodle as an artifact to foster the relationship in implementation of pedagogical practices among the academicians and students for the curriculum goals acquisition. Moreover, the revolutionization of teaching and learning components supportive of digital mechanisms such as Moodle is significantly apprehended (Ayanwale, 2023). Certainly, the CT operationalized Moodle as the platform that entailed to catalyze the students and academicians to overcome the shortfalls experienced in traditional face-to-face practices (Blaschke, 2021).

Also, in connectivism, Moodle has been considered essential for enabling the students to develop independence attributes through working with an affordable learning platform that possesses integrative digital learning compositions for acquisition and appropriately transmitting the classroom contexts in building cognitive, psychomotor, and affective domains for building long-term memories (Blaschke, 2021). Consequently, the study deployed the connectivism theory as the lens assisted in examining the status of the institutional contextual

environment that determined the mechanisms to support and foster appropriate utilization of Moodle as an artifact for undertaking effective learning from students' perspectives.

2.2 Empirical Literature
2.2.1 Students' Perceptions of Moodle Usage for Teaching and Learning

Moodle, as a widely adopted Learning Management System (LMS), has garnered varying perceptions from students regarding its effectiveness in teaching and learning. Several studies have explored students' views on Moodle usage, highlighting both the benefits and challenges they experience.

According to Zitha et al. (2023), students perceive Moodle positively due to its ability to facilitate online learning through flexible and interactive platforms, especially during blended learning. Moodle's integration with web-based resources like YouTube, Wikipedia, and Facebook, as well as its built-in tools for quizzes, assignments, forums, and video lectures, enhances student engagement and promotes collaborative learning (García-Murillo et al, 2023). Aviran & Blonder, (2023) emphasized that students appreciate Moodle's capacity to deliver assessments, conduct quizzes, and provide immediate feedback, which supports continuous learning and reduces reliance on traditional in-person methods.

Additionally, Al- Ahmad et al. (2023) and Glazunova et al. (2022) pointed out that students view Moodle as a valuable platform for engaging with course content asynchronously, allowing them to revisit materials at their own pace. This feature is especially useful in fostering self-directed learning and meeting diverse cognitive needs. Furthermore, Granic (2023) argued that Moodle's customization capabilities help in personalizing learning experiences, making it easier for students to achieve specific educational goals.

However, challenges also shape students' perceptions of Moodle. Kaynak et al. (2022) revealed that digital inequality and socioeconomic factors significantly influence students' ability to engage with Moodle. Students from disadvantaged backgrounds face difficulties accessing devices and stable internet connections, limiting their participation in online learning activities. Lassoued et al. (2020) and Masalimova et al. (2022) noted that some students struggle with digital literacy, leading to resistance toward using Moodle and other e-learning platforms. This technophobia, combined with the lack of technical skills, contributes to a negative attitude toward online education.

Moreover, Adeshola and Agoyi (2022) reported that some students feel disconnected due to the lack of face-to-face interaction, which they find essential for effective learning. The remote nature of Moodle-based learning often results in reduced engagement and interaction with peers and instructors, leading to feelings of isolation. Mustapha (2023) and Mwandosya (2023) also highlighted that poor internet connectivity and technical infrastructure, particularly in remote areas, hamper students' ability to fully utilize Moodle, affecting their overall learning experience.

On the other hand, Toh et al (2023) found that students who have access to the necessary infrastructure and technical support view Moodle as a highly effective tool for blended learning. They appreciate its flexibility in providing both synchronous and asynchronous learning options, as well as its ability to offer varied assessment methods, including peer and self-assessments. This flexibility allows students to tailor their learning experience according to their personal schedules and preferences, making Moodle a valuable resource in achieving academic success.

Despite the challenges, students generally recognize the potential of Moodle to enhance teaching and learning when the necessary support and infrastructure are in place. Ahmad et al. (2023) noted that proper training, technical assistance, and reliable internet access are essential to improving students' perceptions of Moodle. As LMS platforms continue to evolve, addressing these challenges will be key to optimizing student engagement and satisfaction with online learning tools like Moodle.

III. METHODOLOGY

3.1 Research Design

The case study research design was implemented through the mixed research approaches was adopted to assess students' perceptions of Moodle usage for teaching and learning at CBE, Dar es Salaam Campus, Tanzania where quantitative and qualitative techniques and methods were deployed. The qualitative approach deployed through semi-structured interview while quantitative approach deployed through questionnaire. The mixed findings were triangulated during the presentation and discussion. Moreover, the mixed approach was apprehended to bring the strength inculcated into reliability and validity (Saunders et al., 2023).

3.2 Population of the study

The population of this study was 11,924 students streamlined to utilize the Moodle platform for learning processes. Certainly, the population was distributed into strata of heterogeneity program levels of basic Certificate

(2530), Diploma (2505), Bachelor (6732), Postgraduate Diploma (32) and Master's degree (125). Likewise, the homogeneity strata of 6 academic departments were distributed into the programs of Business Administration (4212), marketing (1618), procurement (1887), metrology and industrial metrology (575), accountancy (2342) and ICT and Mathematics (1290).

3.3 Sample Size

The population sample was 373, however the actual data was collected from 329 through questionnaire method and only 5 individuals responded thorough on interview questions. The sample size was calculated using Yamane's formula, with a 95% confidence level and 5% margin of an error from a population of 11,924 students from the College of Business Education (CBE) Dar es Salaam Campus.

3.4 Sampling Technique

Simple random probability procedures were deployed across students' heterogeneity and homogeneity strata to select the sample size of 373 from a population of 11,924 students from CBE Dar es Salaam campus. Yamane formula $\frac{N}{1+Ne^2}$, was used to guide the sampling selection procedures across the strata to get a representative sample size where:

n was the calculated sample size,
N was the total population of 11,924 students,
e was a margin error of 0.05 at a 95% confidence level.

$$n = \frac{11,924}{1+11,924(0.05^2)}, n = 373$$

3.5 Data and Data Collection Methods

The primary qualitative data were collected through semi-structured interviews composed of 5 items administered to 10 respondents. The semi-structured interview sessions lasted 10 minutes. Also, five ranked Likert scale questionnaires comprised of 16 items were designed, tested and administered for engaging the sample of 363 students. The Researcher formulated the respondents' WhatsApp group community whereas the web-based Google form Likert scale questionnaires were shared and collected to reduce costs and inconveniences of not reaching the respondents.

3.6 Validity and Reliability of Data

Validity and reliability are crucial factors in ensuring the accuracy of the investigation processes, data collection tools, findings, and presentations (Mcleod, 2023). Based on that stance, the researcher engaged 2 academic staff using Moodle for teaching and learning as experts to assess the items of data collection tools. The researcher received the suggestion and incorporated changes accordingly. The piloting of the data collection tools was made to the small portion of the population who were not involved in the sample. Furthermore, the identified discrepancies were amended accordingly to sharpen the items from redundant and errors. Additionally, the deployment of homogeneity and heterogeneity strata was of importance in business minimization, increased realism, and at the same time increased the accuracy of data capturing chances. Moreover, the usage of qualitative and quantitative data collection tools and triangulation of the findings added validity as the weaknesses of one approach were filled with the strengths of the other.

Furthermore, the reliability of the Likert scale questionnaire was determined by running a test-retest method to confirm the consistency of the instruments. The scores of the responses from the set of questions that were administered on the two occasions helped to determine the consistency or deviations of the responses, henceforth parameters leading to deviations were adjusted to ensure the reliability acquisition. Moreover, a naturalistic and conducive environment was set for qualitative data collection, respondents were asked to consent to voice recording made accordingly to avoid the distortion of information provided by respondents. The collected data were immediately transcribed and shared with the respondents for approval of the accuracy. The researcher located enough time for administering the data collection tools.

3.7 Data Analysis

The quantitative data collected through the Likert Scale questionnaire were processed through coding, tabulating and analysis using MS Excel. Further, the processed and analyzed results were produced statistically using Tables and Figures. Apparently, the qualitative data were recorded and immediately transcribed, shared with the respondents for collection in case there were mistakes made, edited, summarized, tabulated and presented in the narrative. Also, the thematic-content analysis was undertaken to analyze the qualitative data obtained through the semi-structured interview and then presented using Tables of summaries and narratives.

IV. FINDINGS & DISCUSSIONS

4.1 Study Area Demographic Information

This study involved 373 respondents of whom 363 were exposed to the Likert scale questionnaire and 10 respondents in semi-structured interview. The section presents the responses rates and general respondents information.

4.1.1 Response Rate

The researcher distributed the five ranked Likert Scale questionnaires of which 91% were distributed filled and returned while 9% were not filled and returned.

4.1.3 General Respondents Information

The general respondents' information comprised distribution based on gender and level of education based on the number of returned questionnaires shown in Table 4.1. The findings on gender showed that males were 61.7% compared to 38.3% of females of 329 respondents. Seemingly, the findings implied that male were highly enrolled at CBE compared to females. Encouragement and motivation as well as scholarship strategies had to be deployed to increase the number of females enrolled at the CBE College for gender balance and excellence.

Table 1

General Respondents Information (n=329)

Category	Description	Frequency	Percent
Gender	Male	203	61.7
	Female	126	38.3
	Total	**329**	**100.0**
Education Level	Certificate	61	18.5
	Diploma	107	32.5
	Bachelor	136	41.3
	Postgraduate Diploma	4	1.2
	Masters	21	6.4
	Total	**329**	**100.0**

The demographic findings on respondents' education level found in Table 4.1 showed that were distributed as Masters (6.4%), bachelor degrees (41.3%), Postgraduate (1.2%), diplomas (32.5%) and Certificate (18.5%). In that regard, bachelor's degree and diploma holders were in large proportional compared to other levels.

4.2 Moodle Usage from Students' Perspective

The eight statements were interrogated using Five Likert scale measurement to assess the students' perceptions of Moodle usage for teaching and learning at CBE, Dar es Salaam Campus. The findings were highly attributed on indicators of user friendly, integration, improvement of understanding, availability, learning materials and assignment accessibility, interaction, supports to the teaching and learning process, and satisfaction in the learning environment as presented in Figure 4.1.
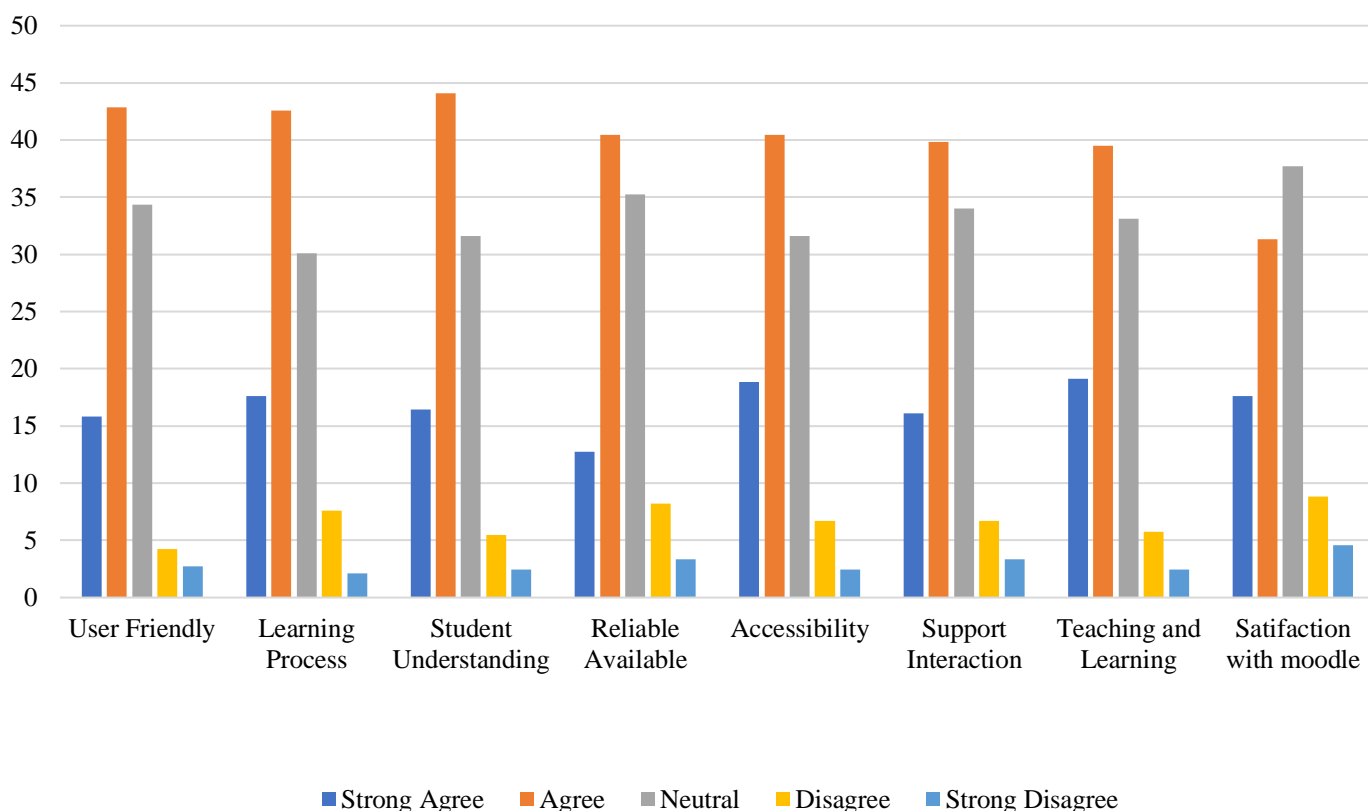
Figure 1
Moodle Usage from Students' Perspective

       This study ascertained the agreement on whether Moodle is user friendly to students in teaching and learning at CBE Dar es Salaam Campus. The findings clearly demonstrate that a significant 59% of CBE Dar es Salaam Campus students find Moodle to be user-friendly, markedly enhancing their teaching and learning experience. This suggests that a robust majority of students genuinely enjoy leveraging Moodle as their digital learning system. Supporting this observation, a recent study by Chand et al (2023) highlighted that 62% of students from other institutions also appreciated the ease of navigation within Moodle. This alignment with our findings underscores a broader trend: students thrive in environments where e-learning platforms like Moodle are intuitive and accessible. Embracing such technologies not only benefits students at CBE but also positions the institution at the forefront of modern educational practices.

Moreover one of the interviewee said,

       "Generally moodle has helped students gain familiarity in using e- learning platforms by accessing digital tools which help improve their learning and performance in class. This *has made even the institution become highly recommended to other interesting stakeholders"* (Student, Interview Session, 2024).

       The level of agreement regarding whether integrating Moodle into the learning process has improved the overall quality of teaching and learning at CBE Dar es Salaam Campus was determined. The findings showed that 61% of the respondent agree and strongly agree that integrating Moodle into the learning process has improved the overall quality of teaching and learning at CBE Dar es Salaam Campus. Also, Al-Hamad et al. (2023) found that the majority of student reported Moodle significantly enhanced learning experience. In that regard the Moodle's integration usage was highly perceived as beneficial and positively contributing to the educational prosperous.

       The study determined whether blended learning through Moodle has enhanced students' understanding of course material in the teaching and learning process at CBE Dar es Salaam Campus whereas the findings indicated that 60% of the respondent agreed and strongly agreed that blended learning through Moodle has improved students understanding the course material. The suggestion made that the blended learning approach is effective and efficient. The findings concurred with that by Leoncio,et al. (2022), where 68% of students being satisfied with Moodle as a

learning platform. The study implied that Moodle effectively supports students' learning process by providing them with the digital tools to attain good performance. Furthermore, efforts should be put to emphasize the use of Moodle so as to capture the pace of growing education in the digital wings.

Moodle was always available when needed at CBE Dar es Salaam Campus as found that 53% of the respondents agreed and strong agreed that Moodle being reliable available in teaching and learning. Subsequently, Mohamed and Kim (2022) emphasized the importance of reliable access in enhancing the learning experience. Seemingly, the researcher emphasized on the maintaining robust IT infrastructure, proactive monitoring, responsive technical support, and institutions had to ensure Moodle remained as dependable platform for teaching and learning.

Besides, the status for Moodle to facilitate accessibilities to the learning materials and assignments during teaching and learning process at CBE Dar es Salaam Campus indicated that 59% of the respondents agreed and strongly agreed. Findings reveal a crucial shift in education towards e-learning platforms like Moodle, which indeed enhances accessibility and flexibility for students. For example, with Moodle, students can access a variety of resources from video lectures to interactive quizzes anytime and anywhere, which is especially beneficial for working adults or those with family commitments (Gamage et al, 2022). Moreover, the e-learning infrastructures allow for personalized learning paths, where students can revisit materials and assessments at their own pace. This flexibility is a stark contrast to traditional classroom settings, which often require students to adhere to a fixed schedule and curriculum pace.

The impact of Moodle on fostering interaction among students and teachers at CBE Dar es Salaam Campus has sparked quite a conversation. The findings reveal that Moodle has woven a vibrant tapestry of interaction at CBE Dar es Salaam Campus, boosting engagement among students and teachers by an impressive 56% of the respondents agreed and strongly agreed. This surge in connectivity is echoed by Al Freih and Robinson, (2024), who shine a light on Moodle's transformative role in fostering communication and collaboration within the classroom. By harnessing Moodle's rich array of communication tools and promoting collaborative activities, the campus is crafting an engaging and effective learning environment. Continuous training and support further ensure that this dynamic interaction flourishes, making education not just a process, but a thriving community experience.

Moodle supports the teaching and learning process was indicated that 59% of the respondents agreed and strongly agreed. The study findings resonate harmoniously with the insights of Al-Salman et al. (2022), showcasing how Moodle's open-source platform empowers students and instructors to embrace a flipped classroom model. This approach allows for a personalized teaching and learning experience tailored to individual cognitive needs, beautifully aligned with socio-constructivist pedagogies. Echoing this sentiment, Tanzania Commission for Universities (TCU, 2022) advocate for blended instructional strategies that seamlessly combine online module content with traditional classroom interactions. This synergy imply how effectively Moodle is harnessed by educators and learners at CBE, illustrating that its features truly enhance the teaching and learning process, transforming education into a more engaging and interactive journey.

Moreover, the study determined whether users were satisfied with Moodle usage in the teaching and learning process whereas the findings on the satisfaction with Moodle usage in the learning environment at CBE Dar es Salaam Campus, nearly half of the participants 49% to be precise expressed satisfaction with their experience on Moodle. This echoes the findings of Al-Freih and Bali (2023)), who highlighted essential features that enhance user satisfaction with Learning Management Systems (LMS). These include intuitive interfaces, effortless access to resources, and enriched learning experiences. Moodle stands out as a powerful LMS, creating integrative and collaborative spaces that nurture interaction between students and instructors, whether in remote settings or traditional classrooms (Asyari, 2024). However, the data also signals underlying challenges within e-learning systems, suggesting a pressing need for political will and commitment to address these hurdles. It's a call to action, urging stakeholders to come together and strengthen the digital learning landscape.

Based on Connectivism Theory, Siemens (2005) technological deployment helped shift the learning process and networking toward student-centres and decentralized approaches. Moreover, the revolutionization of teaching and learning components supportive of digital mechanisms such as Moodle became significant .In that regard, the connectivism theory worked as the lens to assist in examining the CBE contextual environment status on the moodle infrastructure, connectivity and capacity accommodating many learners at a time. The suggestions are made to CBE to enhance the Moodle LMS to possess the overall quality for the educational experience; blended learning through Moodle improved understanding of the course material; Moodle was found to be user-friendly; making it easier to access learning materials and assignments. Moreover, the researcher recommended on the deployment of mechanisms to support and foster appropriate utilization of Moodle as an artifact for undertaking effective learning.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Students' feedback experience on moodle offered valuable insights on usability, engagement, and overall impact on the learning process. The effectiveness of Moodle usage for teaching and learning at CBE was positively agreed due to the strengths it holds. In conclusion, the majority of students had a good perception on Moodle's usability, learning design, material content, and interactions. Furthermore, blended learning with Moodle was important and frequently used with system auditing, monitoring, and evaluation.

5.2 Recommendations

Based on the study findings, it was that recommended the College of Business Education was required to shape the teaching methods in alignment with students' preferences and optimize learning outcomes. Moreover, the curriculum designers and policymakers at the college had to develop policies that promote the effective use of technology in education, including guidelines for implementing Moodle in blended learning environments to ensure equitable access to quality education for all students.

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