

Challenges Facing Students in Using Learning Management System (LMS) in the Face of COVID-19 in the Faculty of Business Studies at Takoradi Technical University

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Abstract

Learning Management System (LMS) has been an effective medium for most schools, colleges and universities to engage students and disseminate instructional materials during the coronavirus pandemic. Notwithstanding, students who have experienced the LMS platform in their learning express concerns which appear to outweigh the positives of the system. Hence, this study was conducted to explore the challenges students face in the use of the LMS in the faculty of Business Studies at the Takoradi Technical University. Cross-sectional survey design was employed with a sample size of 200 business students and data were collected via questionnaire. The study found that students were not trained and equipped with requisite knowledge and skills to use the LMS before its introduction. In addition, there were no technical and students support system to guide the students to learn through the LMS. Also, high cost of internet data, slow internet and Wi-Fi connectivity in the University were some of internet challenges which have resulted in students demotivated and see the LMS as not effective system for learning in the university. It is recommended that the university management is to organize training to equip students with the needed knowledge, skills and understanding to effectively use the LMS. Also, the university management should partner with the telecommunication networks such as MTN, Vodaphone etc. to provide affordable data for students to access the LMS.

Keywords: Learning Management System, LMS challenges, Competency challenge, Institutional-internet challenge

1. Introduction

The emergence of the COVID-19 pandemic has affected all sectors of the global economy and Ghana is not an exception. It has severely affected every sector of the Ghanaian economy especially education in 2020. This resulted in closure of pre-tertiary schools for eleven good months while colleges and universities closed for six months. This development significantly impeded the instructional activities between teachers and their students as well as interactions among students. The quest to navigate through the pandemic in order to reach out to students so that academic activities can continue led to the introduction of modern learning techniques such as virtual learning, learning management systems among others to ensure teaching and learning go on even in the COVID-19 era. Majority of schools, colleges and universities created Learning Management System (LMS) platforms to engage their students and distribute instructional or lecture materials to their students. LMS has gained popularity in Ghanaian pre-tertiary and tertiary institutions as a tool for delivering and managing teaching or lecturing learners. This claim is supported by (Sharma & Vatta, 2013) who indicate the utilisation of learning management systems applications in higher education has increased suddenly. Modern e-learning uses LMSs, which are web-based systems (Radwan, Senousy, & Riad, 2014). Thus, it is a platform that colleges and universities use to engage and share instructional materials without face-to-face interactions.

"LMS is an e-learning online system in the form of a portal wherein students and lecturers can perform or share many of the classroom activities using the internet; lecturers and students are able to interact outside the classroom through online forums and discussions more easily, as opposed to learning in a real classroom (Alshahrani & Ally, 2016, p. 2) explained. The goal of building this learning management application, according to (Bhuiyan & Kundu, 2014) was to give users a user-friendly, safe, appealing, and comprehensive interactive interface. Leveraging software and programmes specifically built for student learning, LMS connect students with learning materials in a standardized way for a student's learning. In addition, they manage learning events, contents, and learners learning processes (Kats, 2010). Additionally, the management of student performance makes use of computerized activity logging, statistics, and planning. Additionally, it incorporates elements that aid in the creation, distribution, management, and assessment of learning resources for all students (Asiri, Mahmud, Bakar, & Ayub, 2012).

Besides, LMSs provide prosperous learning environment for higher education institutions, and its investments continue to increase (Dias & Diniz, 2013). The LMS gives the university a collection of tools to manage course catalogues, collect data from students, and send reports to management. Most LMSs include features such as discussion forums, chats, automated testing, assessing tools and students tracking (Fariha & Zuriyati, 2014). According to Srivi, Pipan, Srevi, and Arh (2012), LMS systems include a variety of elements that may be analyzed from a variety of perspectives, including pedagogical aspect, learner environment, instructor tools, course and curriculum design, administrator tools, and technical specification. The prior submissions suggest that LMS has been an essential medium to ensure continuous teaching and learning without face-to-face in the classroom. This reduces the rate at which students congregate at a lecture hall which can lead to potential spread of the virus.

Since its introduction in the colleges and universities, there have been mixed feelings regarding its usage by both students and lecturers. For instance, both instructors and students believe that LMS help them to sit at the comfort of their homes, offices and hostels to undertake the same instructional activities which would have taken place in the classroom setting. In addition, it has reduced the overcrowding of students in lecture halls which can lead to the spread of the virus especially when the COVID-19 protocols were not strictly adhered to. Notwithstanding, students often raised critical issues or complaints relating to the internet accessibility, cost of data, financial issues, and the knowledge and skills needed to effectively use the LMS to reap the full benefit it offers. Though, these issues or complaints are heard from students, from multimedia platforms, it appears no scientific studies has been conducted to verify and resolve the challenges these students and instructors are facing in the utilisation of the LMS tool in teaching and learning, especially in the Ghanaian context. The available studies or literature conducted on the challenges of LMS seems to be focused on countries outside Ghana (Derakhshan, 2009; Radwan et al., 2014; Davidovitch & Belichenko, 2016; Alenezi, 2018). For instance, (Alenezi, 2018) did a study on the barriers to participation of LMS in Saudi Arabia Universities. Also, (Radwan et al., 2014) was done in Egypt while (Derakhshan & Belichenko, 2016) was conducted in Malaysia. This is a gap in knowledge in terms of location and literature since it appears no study have been conducted in the Ghanaian context. Hence, to bridge the gap, this study sought to investigate the challenges students face in using the LMS during this pandemic.

The contextual of Ghanaian school climate or environment and its related conditions vis-à-vis the studies conducted outside do not permit applying the challenges faced by developed countries or economics to Ghana. This is because the challenges these developed countries face in the use of the LMS may not be the same challenges colleges and universities in Ghana may face. Therefore, there is the need to conduct this study to unearth the challenges students face in the use of the LMS in this COVID-19 era which reflect the reality within Ghanaian context. This study is essential at this time of the pandemic to unravel the challenges as well as make recommendations to address these challenges. Also, heads, administrators, lecturers and students will know some of the measures and strategies to adopt to make the use of the LMS platform effective and efficient. Furthermore, it will add to knowledge to literature so far as LMS is concerned.

2. Research Questions

- 1) What competency-related challenges students face in using the LMS in Takoradi Technical University?
- 2) What institutional-internet related challenges students face in using the LMS in Takoradi Technical University?

2.1 Hypothesis

H₀: There is no statistically significant difference in the competency-related challenges students facing in using the LMS with regards to their programmes pursued.

H₁: There is statistically significant difference in the competency, institutional and

internet-related challenges students facing in using the LMS with regards to their programmes pursued.

3. Literature Review: Challenges Students face in Using the Learning Management System

Learning Management System is found to be intuitive, simplified, and user-friendly (Dahlstrom, Brooks, & Bichsel, 2014). In spite of these merits and the essential role LMS tools play in ensuring that teaching and learning materials and information get to students at the comfort of their homes or hostels, there are some complaints or challenges that impede its effective and efficient use. This section of the paper dwells on empirical studies or evidence from another context. The essence of this review is to compare and contrast the findings from previous studies with the findings that will emerge from the current study. Smith and Abouammoh (2013) investigated into higher education in Saudi Arabian universities; and discovered a lack of training and assistance, incompatibility of IT systems, software problems that interfere with classroom instructions, banned websites, and inadequate IT systems, lack of high-quality technical support staff and poor management and implementation of technology were some of the critical challenges Saudi Arabian universities face in using LMSs. Furthermore, (Kats, 2010; Asiri, Bakadam, Abu Bakar, Mahmud, & Ayub, 2015) noted that the main challenge for students in Saudi Arabian universities is lack of internet connectivity. According to Alenezi (2018), poor connectivity slows down learning processes and tampers with features such as online conferencing, which only works with strong networks. This challenge is very crucial and must be addressed since LMSs work only online and can be accessed through internet connection. Hence, the internet is an essential factor to the effective and efficient use of the LMS tool.

Again, a study by Kyei-Blankson, Ntuli, and Donnelly (2016) revealed that instructors' attitudes toward students who are not acquainted with LMS usage are a barrier to LMS adoption. For instance, when an instructor discourages students from using ICT to enhance their knowledge, the students feel devalued (Kyei-Blankson et al., 2016). Additionally, some teachers do not have the technological expertise necessary to use LMS tools, and as a result, they do not view them as useful teaching tools. Instead, they employ traditional methods, which have been found to be less effective than innovative systems. Alshahrani and Ally (2015) indicated that students who have been using the traditional method of instruction in schools have a challenge in adjusting to online learning. Therefore, many students believe that learning in a typical classroom setting is of higher quality in terms of interactions than learning from studying the content in a learning management system (LMS). In addition, the students believe that an online facility cannot provide adequate data about the course; and this has resulted in students not appreciating the LMS mode of learning. Besides, Ioannou and Hannafin (as cited in Kats, 2010) reported that students complained that the LMS was confusing and slow, and it focused more on administration than on the students. Also, students expressed dissatisfaction with the rigid and boring nature of LMS UI in contrast to more engaging and enjoyable social media platforms like Facebook, YouTube, and Myspace. Again, to make the system into a rich, multimedia-based guide, there was also inadequate instructional design tools and direction (Pine, Green, & Eggers, 2008). These findings are

relevant to this investigation since this study seeks to examine the challenges tertiary students face in the use of LMS in this COVID-19 period. The findings will help validate or collaborate with the findings that will emerge from this study.

Also, Radwan, Senousy, and Riad (2014) did an analysis of the current trend, challenges of developing and evaluating LMS. This was a position paper by these authors and their objectives sought to explore the challenges and work directions of the LMS success are essential to this study. This is because the investigation seeks to assess the challenges students face in using the LMS in their business courses. Hence, the findings of Radwan et al. (2014) will enable a collaboration to take place. From the analysis, it revealed that system quality, information quality, and service quality are factors that affect the effective use of the LMS in teaching and learning. The major challenge that impacts the system's quality is the usability aspect. Their findings also indicated that selecting and evaluating LMSs was difficult, particularly given the proliferation of LMSs. Therefore, they recommended that an evaluation model for LMS selection is needed for multi criteria decision making process that considers quality standards from software engineering perspectives and the quality aspects of the e-learning system.

Moreover, Anderson (2007) conducted a study on some of the major challenges of E-learning for developing countries with Sri Lanka in focus. The research identified seven key challenges, including attitudes, access, academic confidence, localization, flexibility in teaching and learning activities, and student assistance. According to Anderson, students support refers to the support systems needed for students to easily make it through the course. For instance, students will be very confused and in need of direction and support in a situation where e-learning is new and ICT literacy is poor. Bhalalusesa (2001) and (Simpson, 2004) indicate that contact or intervention from the institution and support from the tutor and other staff (including IT help desk) are critical to improving learning and pass rates. Furthermore, the flexibility was concerned with issues such as whether students should be allowed to learn at self-pace and take the examinations when they want and if they should be allowed to choose the medium of content delivery (Anderson, 2007). The different teaching and learning activities that might be done throughout a course was another problem with teaching and learning activities. These include the level of interactivity, collaboration and interaction with peers as well as the possibility for hands on practice for students (Bruckman, 2002; Mason & Weller, 2000).

Additionally, as majority of students lacked the necessary knowledge and abilities, their prior academic training and qualifications posed difficulties in the application of e-learning technologies. Also, localization of content involved adjusting the course content to the regional culture, language, and religious beliefs (for instance, the images and symbols should be appropriate for the local culture in order to not be offensive or simply confusing). Attitudes of students towards E-Learning was another challenge (Gammill & Newman, 2005; Usun, 2004). For instance, in the eBIT case, certain teachers and students questioned the validity of the E-Learning courses. Also, in the Sri Lankan case, it was found that even though information technology is considered to be “cool” it is still not regarded as a proper tool for delivering education; it is still second best and not perceived to be ‘as good as’

traditional face-to-face teaching. This could become a major obstacle if E-Learning is not promoted or introduced in a proper way (Anderson, 2007).

4. Research Methods

The cross-sectional survey design under the quantitative approach to research was employed in the study. The design was used because data was gathered from varied respondents with varied characteristics at a specific point in time. This is supported by Thomas (2020) who states that cross-sectional design enables the collection of data from different individuals at a single point in time. In addition, Creswell (2012) indicates that cross-sectional design has the advantage of measuring current attitudes or practices and capturing multiples variable at the time of data gathering. Level 300 students from the Faculty of Business Studies reading Marketing & Strategy, Accounting & Finance, Secretaryship & Management, and Procurement & Supply formed the population. Two hundred (200) students were sample through stratified sampling technique. A questionnaire containing 23 items was used to collect data from the respondents. The questionnaire was adopted because it guarantees the confidentiality and anonymity of respondents since it is generally self-reporting as indicated by (Leedy & Ormrod, 2005). The questionnaire was grouped into four sections where section A covered demographic data of the respondents while sections B, C and D dealt with questions that sought to answer the research questions/hypothesis. The items of the questionnaire were designed on the four-point Likert scale with responses in a descending order from strongly agree, agree, disagree and strongly disagree. The Likert scale was judged ideal since it is highly versatile and the replies are easily quantifiable, subject to computation of mathematical analysis, and supplied in person or over mail (LaMarca, 2011). The questionnaire was subject to face and content validity, and reliability co-efficient alpha value of 0.83 was obtained. This value according to Cohen, Manion, and Morrison (2007), are high and adequate. The questionnaire was administered to sample level 300 students in the Faculty of Business Studies with the help of two teaching assistants in the same faculty. This was after we had fulfilled ethical issues and sought permission from the various Heads of Departments in the faculty. One hundred and sixty questionnaires were retrieved given a return rate of 80%. Dillman (2000) classified a return rate of 70% or above as good and satisfactory. The data acquired was cleaned and entered into IBM SPSS (version 22). Descriptive and inferential statistical tools were employed in analysing the data into frequencies and percentages, mean and standard deviation as well as independent sample t-test. The descriptive statistics were deployed to analyse the demographic data and the research questions one to three while the inferential statistic specifically analysis of variance (ANOVA) was used to analyse the hypotheses.

5. Results and Discussion

5.1 Demographic Data of Respondents

The section was devoted for analysis of background data of respondents involved in the study. It highlighted gender, age and programme of study of participants. Table 1 presents the results.

Table 1. Demographic data of respondents

Variable	Sub-scale	Freq. (n)	Percent (%)
Gender	Male	84	42.0
	Female	116	58.0
Age	Below 21 years	66	33.0
	21-25 years	125	62.5
	26-30 years	9	4.5
Programme	Marketing & Strategy	54	27.0
	Secretaryship & Management	49	24.5
	Accounting & Finance	45	22.5
	Procurement & Supply	52	26.0

Source: Field Data (2021).

From Table 1, the male participants were 84 representing 42.0% while the female participants were 116 representing 58.0%. This indicates that the study was dominated by female respondents. This could be attributed to the fact that female students appear to dominate in the Secretaryship and Management, Marketing and Strategy, Accounting and Finance programmes in the University. Also, the age group of these respondents were dominated by ages 21-25 years which constituted 62.5 % of the age groups involved in the study. This depicts that the participants involved in the study were youth and fall within the university going age. Concerning the programme of study, Marketing and Strategy students were 54(27.0%), Secretaryship and Management students were 49(24.5%), Accounting and Finance students were 45(22.5%) and lastly, Procurement and Supply students were 52(26.0%). This shows that the study was dominated by Marketing and Strategy, Procurement and Supply students followed by Secretaryship and Management, and then Accounting and Finance.

5.2 Key to Interpreting Results

Students graded the challenges they faced in the use of LMS amid the COVID-19 pandemic using Strongly Disagree, Disagree, Agree and Strongly Agree. The mean ranges for the statements were scored as (Strongly Disagree = 1, Disagree = 2, Agree = 3, Strongly Agree = 4). The scale criterion value of 2.5 was established. To obtain the criterion value (CV=2.5), the scores were added together and divided by the number in the scale ($1+2+3+4= 10/4=2.5$). To interpret the mean scores, items on the challenges that scored means of less than 2.5 were measured disagreed while the mean score of 3.00 and above were measured agreed. The dispersion of responses gathered from the respondents was evaluated using standard deviations. A standard deviation of 1.00 and below denoted homogeneity in responses, whereas a standard deviation of more than 1.00 denoted diversity in responses of respondents.

Research Question 1: What competency-related challenges do students face in using the LMS?

This research question sought to explore the students' perspectives of the competence

challenges they face in using the LMS in midst of COVID-19. Table 2 represents the results on the competency-related challenges.

Table 2. Competency-related challenges students face in using the LMS

Competency-related challenge	N	Mean	SD
I do not have formal training from the university on how to use the LMS Platform.	200	2.98	.97
I do not have enough knowledge in computer proficiency to use the LMS platform.	200	2.80	1.00
I have inadequate skills in computer proficiency to use the LMS platform.	200	2.81	1.05
I do not have a personal computer to access the LMS platform.	200	3.06	1.06
My negative attitude toward new technology affects the use of the LMS.	200	2.45	1.14
My inability to have a smartphone hinders my ability to access the LMS platform	200	2.64	1.15
I don't see LMS as an effective system for learning at the University	200	2.85	1.15
I find it difficult to download lecture materials from the LMS platform.	200	3.02	1.02

Source: Field data (2021).

From the results in table 2, the respondents indicated that they do not have formal training from their university on how to use the LMS platform and their responses were homogeneous. This is reflected in the computed mean value of 2.98 and standard deviation of .97. Again, the respondents agreed that they did not have adequate knowledge and skills in computers to use the LMS platform. This is seen in the mean value of 2.80 and 2.81 respectively. Meanwhile, their responses were heterogeneous. This could be attributed to the fact that some of the students pursuing Secretaryship and Management read office management while other students pursuing Marketing and Strategy, Accounting and Finance, Procurement and Supply, may not read that course. Therefore, the Secretaryship and Management students may be generally more proficient in computer knowledge and skills than their Marketing and Strategy, Accounting and Finance, Procurement and Supply colleagues. These are critical challenges that affect the effective and efficient use of the LMS. This is because, if students do not have formal training to equip them with the requisite knowledge and skills to use the LMS platform, it will not be an effective and efficient system. That is why the respondents also agreed that they do not see LMS as an effective system for learning in the University. This is evident in the mean value of 2.85 and standard deviation of 1.15. This could also explain why the students indicated that they find it difficult to download lecture materials from the LMS platform. Besides, the respondents disagreed that their negative attitude towards new technology affects the use of the LMS. This is shown in the computed mean value of 2.45 and standard deviation of 1.14. This finding implies that respondents embrace new technology innovation when appropriate training on the new technology for students to use it effectively is given.

These findings above corroborate with the findings of Smith and Abouammoh (2013) who

found that inadequate training and support for students is one of the critical challenges Saudi Arabian Universities' students face in the use of LMSs. Also, the findings are in line with Pine, Green, and Eggers (2008) indicated that there was insufficient instructional design guidance and tools to develop the system into a rich, multimedia-based guide. Also, the students' responded that they do not see the LMS as an effective system for learning in the university is in agreement with (Kyei-Blankson et al., 2016) who indicated that some teachers lack the technological skills needed for the usage of LMS tools and as a result, they do not consider LMS effective tools in teaching. Additionally, it supports the findings of Alshahrani and Ally (2015), who said that students do not value the LMS way of learning since they think online facility cannot provide sufficient information about the course. However, the findings showed that the respondents did not have negative attitudes towards new technology especially LMS contradicts the findings of (Gammill et al., 2005) and (Usun, 2004) who indicated that students and teachers' attitudes manifested in a way that questioned the credibility of E-Learning courses.

Research Question 2: What institutional-internet related challenges do students face in using the LMS in TTU?

Research question two sought to examine students standpoint about the institutional and internet-related challenges they encounter in the use of the learning management system put in by the Takoradi Technical University of Ghana. The results of the challenges are presented in Table 3.

Table 3. Institutional-internet related challenges students face in the use of the LMS

Institutional-Internet related challenges	N	Mean	SD
Inadequate technical support services from the University in the use of the LMS	200	3.30	.86
The LMS platform interface looks complex and I am unfamiliar with the features.	200	3.10	.97
Inadequate software and hardware Infrastructure for learning on the LMS platform.	200	3.24	.90
Sometimes I experience system errors and I am unable to access the LMS platform.	200	3.30	.85
Power outages sometimes deny me of accessing the LMS platform	200	3.17	.98
Sometimes I do not get informed when there is an announcement on the LMS platform.	200	3.24	.89
Inadequate time by lecturers to guide the students on how to use LMSs	200	3.21	.97
Poor internet access and networking in the University.	200	3.61	1.66
Difficult to get access to the internet at my hostel or home.	200	3.45	.83
There is slow internet or Wi-Fi connectivity in the University.	200	3.78	1.06
The high cost of internet data hinders my interest in accessing the LMS platform	200	3.55	.73
Irregular internet connectivity demotivated me to use the LMS Platform.	200	3.49	.77

Source: Field Data (2021).

The respondents indicated that there are critical institutional-internet challenges that affect the effective use of LMS platform in the university as shown in Table 3. For instance, the respondents indicated that they lack technical support services from the university in the use of the LMS and their responses did not differ. This is evident in the mean value of 3.30 and a standard deviation of .86. In addition, the respondents agreed that there is inadequate software and hardware infrastructure for learning on the LMS platform, and their responses were homogeneous ($M=3.24$, $SD=.90$). Furthermore, system error resulting in an inability of the respondents to access the LMS platform was a challenge indicated by the respondents. This is seen in the mean and a standard deviation value of 3.30 and .85 respectively. Moreover, the respondents indicated that their lecturers or instructors are unable to guide the students on how to use LMS due to inadequate time, and this is shown in the mean and standard deviation of 3.21 and .97. these issues are critical that need urgent remedies in order not to demotivate the students in the use of the online lesson system.

In support of the above findings, Smith and Abouammoh (2013) opined that software issues that interrupt classroom teaching, blocked websites, lack of high-quality technical support staff and poor management including implementation of technology were some of the critical challenges Saudi Arabian Universities face. The findings agree with those of Bhalalusea (2001) and Simpson (2004) who stated that improving learning and pass rates required contact or intervention from the institution, support from the tutors and other staff members (including the IT help desk). Likewise, Anderson (2007), indicated students support systems which is the support needed for students to easily make it through LMS are essential for a setting where e-learning is new and ICT literacy is low. Furthermore, the findings on the inability of lecturers or instructors to guide students on how to use the LMS confirms the findings of (Kyei-Blankson et al., 2016) which shown that instructors or lecturers humiliate their students instead of encouraging them to use ICT to improve their knowledge and skills in the area.

Regarding the internet challenges, the respondents strongly indicated that slow internet and Wi-Fi connectivity in the university affect the smooth use of the LMS. This is seen in the computed mean and standard deviation of 3.78 and 1.06 respectively. Furthermore, the respondents strongly agreed that the high cost of internet data hinders their interest in accessing the LMS platform and their responses were homogeneous. This is evident in the mean and a standard value of 3.55 and .75 respectively. Owing to the challenge of poor internet access and networking system in the university as well as irregular internet connectivity demotivating students to use the LMS platform, the respondents strongly agreed that there are challenges they encounter. These are depicted in the computed ($M=3.61$, $SD=1.66$) and ($M=3.45$, $SD=.77$) respectively. These findings represent a really disturbing situation university students are facing during the COVID-19 pandemic. This has led to the demotivating and ineffective way the respondents believe the LMS for universities are in this era of a pandemic. Besides, online learning or LMS learning requires proper and regular network connectivity or internet access to ensure its effectiveness. According to Alshahrani and Ally (2016), a learning management system (LMS) is an online platform for e-learning that allows instructors and students to perform and share numerous common classroom

activities using the internet. These findings are consistent with Kats (2010) and (Asiri, Bakadam, Abu Bakar, Mahmud & Ayub, 2015) who reported that inadequate internet connectivity was the main challenge to students in Saudi Arabian universities. Also, it is in harmony with Alenezi (2018), who indicated that poor connectivity slows down learning processes and tampers with features such as online conferencing, which only works with strong networks.

5.3 Testing for Hypothesis

H₀: There is no statistically significant difference in the competency-related challenges students face in using the LMS with regards to their programmes of studies.

H₁: There is a statistically significant difference in the competency-related challenges students face in using the LMS with regards to their programmes of studies.

A one-way analysis of variance (ANOVA) was conducted to determine whether significant differences exist in the competency challenges students face in using LMS in relation to their programmes of studies. Four levels (Marketing and Strategy, Secretaryship and Management, Accounting and Finance and Procurement and Supply). The dependent variable was the competency challenges students face in using the LMS. As a rule of thumb, for a one-way ANOVA test to be conducted, the data needs to meet the normality assumption. Therefore, the Shapiro-Wilk test was done to determine the normality of the data. The test depicted that the distribution was normal, hence, test for homogeneity of variance to determine the level of homoscedasticity of the data. Table 4 represents the test result.

Table 4. Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.461	3	196	.710

*Significant at .05 level.

The results in Table 4 showed a homogeneity of variance test ($p=.710$) which is greater than the significance level ($P>.05$). This implies that equal variance is assumed. Now that the assumptions underlying the use of one-way ANOVA were satisfied, the actual test was conducted to determine whether differences exist in the competency challenges students face in using LMS with regards to the programmes of studies. Table 5 shows the ANOVA test.

Table 5. ANOVA Test

	Sum of Squares	df	Mean Squares	F	Sig.
Between Groups	287.098	3	95.699	3.890	.010
Within Groups	4821.622	196	24.600		
Total	5108.720	199			

* Significance at 0.5 level.

The ANOVA test results in Table 5 revealed that statistically significant differences exist in the mean score of the four programmes of studies [$F(3, 196) = 3.890, p = .010 < .05$] in relation to competency-related challenges students face in the use of LMS. Since there are statistically significant differences in the competency-related challenges with regard to the programmes of studies, we reject the null hypothesis. In addition, since there is a significant difference between the means, a Post Hoc test was conducted to find which pairs of means were statistically different. Table 6 represent the result of the Post Hoc test.

Table 6. POST Hoc test: Tukey HSD

Multiple Comparisons						
Dependent Variable: Competency						
(I)	(J) Programme	Mean	Std.	Sig.	95% Confidence Interval	
Programme		Difference (I-J)	Error		Lower Bound	Upper Bound
Marketing and Strategy	Secretaryship & Management	-2.65646*	.97857	.036	-5.1921	-.1208
	Accounting & Finance	.56667	1.00111	.942	-2.0274	3.1608
	Procurement & Supply	-.85897	.96366	.809	-3.3560	1.6381
Secretaryship and Management	Marketing & Strategy	2.65646*	.97857	.036	.1208	5.1921
	Accounting & Finance	3.22313*	1.02407	.010	.5696	5.8767
	Procurement & Supply	1.79749	.98748	.267	-.7613	4.3563
Accounting and Finance	Marketing & Strategy	-.56667	1.00111	.942	-3.1608	2.0274
	Secretaryship & Management	-3.22313*	1.02407	.010	-5.8767	-.5696
	Procurement & Supply	-1.42564	1.00983	.494	-4.0423	1.1910
Procurement and Supply	Marketing & Strategy	.85897	.96366	.809	-1.6381	3.3560
	Secretaryship & Management	-1.79749	.98748	.267	-4.3563	.7613
	Accounting & Finance	1.42564	1.00983	.494	-1.1910	4.0423

*. The mean difference is significant at the 0.05 level.

Since equal variance was assumed, the Tukey HSD was used in reading the mean difference from the multiple comparisons table. The result in Table 6 revealed significant differences between the Marketing & Strategy and Secretaryship & Management programme (sig. = .036), and between Secretaryship & Management and Accounting & Finance a (sig. = .010) as all the sig. values are less than .05. These findings affirm the heterogenous responses of the respondents which was due to the fact that Secretaryship & Management and Marketing & Strategy programmes offer courses such as office management and data process which are done through the LMS Platform.

6. Conclusion

Learning Management System which is widely used in Ghanaian universities including Takoradi Technical Universities is bedeviled with several challenges which are affecting its effectiveness and benefits students are to enjoy in its usage. Owing to the competency

challenges, it can be concluded that students were not trained and equipped with the requisite knowledge and skills to use the LMS before its introduction. Since no training or orientation was done for the students before the use of the LMS, they find it difficult to access and download lectures materials from the LMS platform. Based on these issues, it can be inferred that the students do not possess the competencies needed to use the LMS platform for learning. This is a serious challenge students faced because if a student does not have the competence, how can he know how to access or connect to the platform and download the necessary materials on the LMS.

Owing to the institutional-internet related challenges, it can be concluded that universities do not provide technical support services for students to aid the use of the LMS platform effectively. Additionally, poor system management or errors and inadequate hardware infrastructure are critical challenges confronting students in the utilization of the LMS in the study area. Based on these challenges, it can be inferred that the inability of the management Takoradi Technical University to provide students support services to guide them in the use of the LMS vis-à-vis the inability to train or orient the students on the use of the LMS contributed significantly to the challenges students face in the use of the LMS. Furthermore, slow internet and Wi-Fi connectivity in the university and the high cost of internet data reduce their interest to access the LMS platform. From these challenges, it can be inferred that the students in the business faculty who have their instructional activities through LMS are not getting the optimal benefits of the LMS resulting in the loss of interest in the LMS as an effective medium of instruction in this COVID-19 era.

Concerning the hypothesis, it can be concluded that statistically significant differences exist in the competency challenges students face in the use of the LMS with regards to the programme of studies. In addition, differences in the means exist between Marketing & Strategy and Secretaryship & Management programmes, and between Secretaryship & Management and Accounting & Finance. Though students do not have a negative attitude towards new technology use, these crucial challenges are causing the students to lose interest in the LMS which is an effective medium to use to reach out to several students in this pandemic era. These are critical issues the management of TTU need to address urgently for students to enjoy the benefits of LMS.

7. Recommendations for Policy and Practice

- The university management as a matter of urgency should organize training or orientation to equip the students with the needed knowledge, skills and understanding to effectively use the LMS. This will motivate and increase the interest of the students to develop a positive attitude towards the use of LMS. Besides, workshops should be organized by the university management to equip the lecturers or instructors with the needed knowledge and skills to assist students when they have challenges accessing and downloading materials from the LMS.
- Also, students support services should be provided by the university management to aid or guide the students when using the LMS. Additionally, software and hardware infrastructures should be provided to help the students learn on the LMS. This will

ensure that students who see the LMS platform as complex or who are new to the online system are guided to easily access and use the LMS.

- University management should partner with the telecommunication networks such as MTN, Vodaphone etc. to provide affordable data for students to access the LMS. This is because it is only through the internet that the LMS platform can be accessed. The cost of data can be embedded in the students' academic fees so that they will not complaint of money to buy data and connect to the LMS.
- The university management should ensure stable and regular internet or wi-fi connectivity in and around the university campus. This will enable the students to easily get access to the internet and make use of the LMS. This is because the internet is the most critical medium that contributes to the effective and efficient use of LMS by students in the university.

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