What critical factors forecast student-teachers utilization of online learning system in the University of Education, Ghana during the Covid19 pandemic?

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Abstract
The shutdown of schools due to the Covid19 epidemic has generated a move towards online education. The operation of an electronic instructional system in many higher learning institutions was a major challenge. Online instructional system namely Moodle possesses some characteristics that are important for its operation in the era of the covid19 epidemic. Nevertheless, the effective implementation of the electronic instructional system depends on grasping the determinants that confront the modern electronic instructional system. Therefore, this inquiry aims to examine the determinants that influence learners’ operation of the instructional learning system in the period of covid19. This inquiry adopted a quantitative research design. A convenient sampling approach was employed to choose a sample size of 276 students. The result of the inquiry found that all the nine determinants elucidated 53.8% of the change in utilization of the online learning system. Of the nine determinants, social influence and system quality contributed substantially to learners’ utilization of online learning system. Implications for the study were also discussed.

Keywords Covid19 pandemic · Student-teachers · Online learning system · Social influence · System quality

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1 Introduction

As is evident in the globe today, the COVID-19 epidemic is compelling higher learning institutions to swiftly transition to remote and electronic education. Coronavirus has compelled colleges worldwide to implement online education. We are currently in a crisis and must respond with alternative and readily available modes of instruction, such as digital and mobile gadget education systems. Electronic education is neither novel to students, nor is distant education. COVID-19, on the other hand, has reignited interest in online education prospects. UNESCO (2020) stated that the shutdown of educational institutions has some negative implications for students, including disrupted learning, depriving students and adolescence of possibilities for progress and growth. Online learning systems, on the other hand, can alleviate this issue by providing easy access to these systems and swift network links. Indeed, e-learning technologies are critical in combating this pandemic. E-learning systems can support instructors in handling, preparing, conveying, and monitoring the pedagogical procedure. Additionally, it intends to support educators, and schools in facilitating learner instruction throughout schools’ shutdown periods. Additionally, most of these systems are at no cost, which can support in maintaining continual education during this Coronavirus epidemic. However, many universities are finding that providing and utilizing digital instructional materials in a digital pedagogical system is their primary task during the COVID-19 epidemic. Due to its universality, inexpensive, user-friendly, and collaborating nature, internet instructional systems are critical sources of information. Moodle, for example, is an internet instructional system with some amazing attributes that would be quite useful throughout this Covid-19 epidemic. Utilizing this system at this point may be more realistic. For instance, learners could be messaging or participating in a classroom task with instructors via a networked instructional system from the comfort of their residences, using a notebook or portable gadget. Additionally, students can quickly download educational content to their portable gadget, which can be linked to either mobile or wireless local area networks. According to Ülker and Ylmaz (2016), one strategy for online instruction is through the usage of an online learning management system (OLMS). Therefore, electronic learning is used to describe the process of providing, organizing, and managing digital learning tasks in a system, such as a learner registration, examinations, homework, content outlines, teaching plans, messages, curriculum, and rudimentary lesson resources (Du et al., 2013; Wang, Vogel & Ran, 2011). By transitioning from conventional instruction to online learning, learners will interact with networked instructional systems such as Moodle every day. This has some benefits, including increased efficiency and efficacy of instructional provisions through the enhanced networked system with instructors and improved gateway to instructional resources (Alrawashdeh, Muhairat & Alqatawnah, 2012).

Since the triumph of a networked instructional system is contingent upon learners’ preparedness and approval to accept it (Teo et al., 2017), a dearth of networked instructional system has been thoroughly explored (Bervell & Umar, 2017), and even the small works have concentrated on technical problems omitting to survey the elements that impact the use of networked instructional system by individuals (Teo et al., 2014). This ends in a failed system and a spendthrift of institution funds (Naveed
et al. 2017). The study in this area is yet in its premature stage, and the viewpoints of learners have not been thoroughly examined (Tarhini et al., 2017). By examining digital learning usage, schools can gain a comprehensive knowledge of their learners’ desires and, ultimately, create a productive online pedagogical structure (Alksasbeh et al. 2019). To the knowledge of the researcher, no comprehensive investigation of the elements impacting the operation of online pedagogical systems throughout the COVID19 epidemic has been conducted; notwithstanding this, online pedagogical systems were adopted in some higher education institutions about five years ago. As such, this research aims to uncover the primary determinants affecting the use of electronic learning system in the era of the COVID-19 epidemic. As a result, we pose the following questions in this regard:

(1) What are the views of students on factors affecting their use of online learning system?

(2) Are there substantial relationships between the elements (i.e., performance expectancy, effort expectancy, attitude, social influence, perceived enjoyment, and system quality) and students’ utilization of online learning system?

(3) To what degree do the factors forecast the perception of learners on utilization of digital learning system in university of education?

2 Reviewed works

Any technology system’s success is contingent upon its users’ utilization of the system (Al Mulhem, 2020). So, in the setting of an online learning system, learner acceptance of digital learning is viewed as a critical factor in determining the system’s effectiveness. Preceding works (Abbad 2021; Nguyen et al. 2020; Ain et al. 2015; Salloum and Shaalan 2019; Tseng et al. 2019; Moorthy et al. 2019, Sangeeta and Tandon 2020 ) have adopted the Unified Technology Acceptance and Use Theory (UTAUT) as a reference model in a range of works to explore the adoption and use of technology. These works analyzed factors such as performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FI) and behavioural intention (BI). Though, UTAUT framework has been broadly applied in several studies, there are concerns about its ability to explicate a person’s acceptance of technology. As a result, the UTAUT model has been expanded. Several investigators have shown that adding more exogenous constructs to this model can improve its capability to forecast technology acceptance (Maillet et al. 2015; Kabra et al. 2017; Khalilzadeh et al. 2017. For example Chao (2019) modified UTAUT model by introducing perceived enjoyment to study to explore the determinants that determine users’ behavioural intention to use mobile technology. Also, Baabdullah et al. (2019) included system quality to investigate the elements that contribute to the acceptance of mobile banking. In this study, UTAUT was modified to include system quality (SQ) and perceived enjoyment (PENJ) in addition to the variables performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FI) and behavioural intention (BI. Venkatesh et al. (2003) explained PE as the level at which an entity assumes that the use of technology can bring benefits to the success of the job, EE as the level of convenience linked to the use of technology, SI, as a
perception of human impact on the decision of the consumer’, and FC as the level to which the user feels that institutional and high-tech supports are put in place to implement the system. In addition, PENJ is the degree to which technology is satisfying in addition to the predicted performance consequences (Davis et al. 1992). SQ refers to the required attributes of the information system (DeLone and McLean 2016). BI describes the readiness of users to use a particular technology to execute a specific behaviour (Ain et al. 2015).

Numerous academic works published in scholarly journals have examined challenges surrounding the acceptance of digital learning in various nations worldwide. For instance, Abbad (2021) examined learners’ use of electronic learning in a Jordanian university. The inquiry discovered that performance expectancy (PE), effort expectancy (EE), behavioural intention (BI), and facilitating condition (FC) determined students’ acceptance of online learning while social influence (SI) did not. Al-Gahtani (2016) employed the technology acceptance 3 model (TAM3) to explore the determinants that impact learners’ acceptance of online instructional system. The inquiry showed that fun, self-confidence, and fear were the most prevalent elements of learners’ reception of online instructional system while demonstrability, perceived enjoyment and social influence were not determinants of students’ approval of online instructional system.

Buabeng-Andoh and Baah (2020) examined the elements of learners’ real application of OLMS in a private university in Ghana. They found that PE, EE, and institutional support positively added to learners’ acceptance of online learning systems whereas SI and infrastructure support did not prevalently support learners’ approval.

Nguyen et al. (2020) researched the elements that affected learners’ use of networked pedagogical system. A total of 246 students from twenty universities in Vietnam were involved in the study. The outcome of the inquiry revealed that computer self-efficacy, computer experience, perceived ease of use, perceived usefulness, enjoyment, and subjective norm positively determined learners’ approval of networked pedagogical system while system characteristics did not contribute positively to learners’ approval of the electronic learning system.

Tarhini and colleagues (2017) conveniently sampled 366 students from two universities in the United Kingdom to investigate the elements stimulating learners’ adoption of electronic learning system. The research work discovered that PE, SI, habit, hedonic motivation, self-efficacy, EE and trust impacted students’ adoption of electronic learning system. However, facilitating conditions and price value did not contribute positively to learners’ approval of digital learning. In the United Arab Emirates, Salloum and Shaalan (2019) studied determinants stimulating learners’ approval of digital instructional system in advanced institution. Two hundred and eighty (280) learners agreed to take part in the study. Partial least square method was used to perform the data analysis. The results of the research work showed that SI, PE and FC of learning considerably impacted learners’ acceptance of online learning system. But learners’ approval of online instructional system was not affected by effort expectancy. Though the population for the study was sufficient, the sampling strategy applied to sample the participants was not stated.

Chao (2019) studied the determinants that encourage learners’ approval of mobile learning. A cross-sectional research design was employed to survey 1562 partici-
pants. The outcome of the inquiry found that perceived expectancy, effort expectancy, perceived enjoyment, satisfaction, and trust substantially contributed to learners’ acceptance of mobile learning. However, investigators (Tseng et al. 2019; Moorthy et al. 2019) argued that effort expectancy and performance expectancy had no major impact on behavioural intention of technology use. Mixed findings from studies have necessitated further analysis of the relationship between effort expectancy, performance expectancy and behavioural intention of technology use.

Mtebe et al. (2016) examined the determinants that influence the use of multimedia-enhanced content by educators and found that, apart from the performance expectancy, all the determinants related to the acceptance and use of prepared content by educators. El-Masri and Tarhini (2017) studied the predictors that contributed to the acceptance of the e-learning system at the university. The outcome of the study was that performance expectancy significantly linked to behavioural intent. However, the rise in EE, SI and FC in e-learning adoption differs between developed and developing nations. In addition, several academicians published on the impact of FC on intention and use of OLMS. For example, scholars (Khan 2018; El-Masri and Tarhini 2017) have found that FC is significantly linked to OLMS acceptance. Similarly, other studies (Sangeeta and Tandon 2020; Tseng et al. 2019) have confirmed a major association between the use of FC, BI and OLMS. But, in their research, Moorty et al. (2019) observed the opposite findings. They believed that FC had no major connection with BI in the use of technology.

Social influence, which is similar to the subjective norm, is explained as ‘a perception of human impact on the decision of the consumer.’ In educational institutions, users may consider innovation to be more important to the achievement of learning-related objectives if other relevant personalities, including friends, teachers and administrators in the institution, approve the application of such technology. Tarhini, et al.(2013) argued that the use of technology should not only concentrate on technical problems, but should also focus on social environments where technology is being applied. Prior works have shown the influence of social factors on BI (Tseng et al., 2019; Buabeng-Andoh and Baah 2019; Moorthy et al. 2019). However, research in showed mixed results in relation to SI and BI (Mehta et al. 2019; Kolog et al. 2015, Tandon and Kiran 2018). The inconsistency outcomes in investigation have called for further inquiries.

Perceived enjoyment precursors include playfulness, enjoyment, fun, enthusiasm and hedonic motivation (Venkatesh et al. 2003). One of the things widely considered in educational settings is to make the teaching process fun and convenient for learners (Huang 2014). Perceived enjoyment is the degree to which technology is satisfying in addition to the predicted performance consequences (Davis et al. 1992). New technology acceptance has been shown to be affected by perceived enjoyment in the past research (Masrek 2015). Similarly, studies have shown that perceived enjoyment is significantly linked to students’ intention to embrace and use technology (Alyoussef 2021; Chao 2019). Chang et al. (2017) asserted that perceived enjoyment is crucial in explicating the acceptance of digital learning.

System quality refers to the required attributes of the information system. These attributes include friendliness, system flexibility, system reliability, ease of learning, intuitiveness, sophistication, and response time (DeLone and McLean 2016). Ghazal
et al. (2018) explored critical factors affecting learners’ acceptance and satisfaction of OLMS in a hybrid setting. The study was conducted in Yemen with a total of 174 partakers. A partial least square approach was employed to analyze the data. The aftermath of the inquiry showed that system quality (SQ) positively contributed to students’ acceptance of electronic pedagogical system. However, Fathema et al. (2015) found no connection between system quality and acceptance of online educational system.

Finally, BI describes the readiness of users to use a particular technology to execute a specific behaviour (Ain et al. 2015). It is assumed to be an antecedent of the use of behaviour. Several studies have shown that BI corresponded substantially to the actual usage of the system (Ain et al. 2015; Tseng et al. 2019; Sung et al. 2015; Davis, 1989), although other studies have revealed contradictory results (Siswanto et al. 2018; Kabra et al. 2017). Based on the above-mentioned discourse, BI was included in this analysis.

3 Methodology of Research

3.1 Strategy for data collection and screening

The research method used to choose the 450 students who enrolled in Information Technology programme for the study was a convenient method of sampling. The students ranged from Year 1 to Year 4. The research was conducted at Winneba Education University. Consent for ethics was received from each participant. In addition, partakers were notified of the intent of the inquiry, guaranteed of their privacy and secrecy, and voluntary participation. On the whole, 380 questionnaires were retrieved from the partakers. Using box plot diagrams, the data were filtered to exclude missing questionnaires and outliers. In addition, the assumption of normality was verified by computing skewness and kurtosis. The skewness and kurtosis values obtained from the study (see Table 1) indicated that normality was not violated as recommended by Kline (2016). For the study, data screening yielded 276 useable questionnaires.

| Variable | Mean | Standard deviation | Skewness | Kurtosis |
|----------|------|--------------------|----------|----------|
| BI       | 4.984| 0.902              | -1.580   | 4.088    |
| EE       | 4.986| 0.798              | -1.084   | 1.990    |
| PENJ     | 4.801| 0.991              | -1.017   | 1.395    |
| FC       | 4.388| 1.093              | -0.755   | 0.092    |
| LU       | 4.207| 1.193              | -0.624   | 0.279    |
| PE       | 4.986| 0.876              | -1.323   | 2.566    |
| SI       | 4.316| 1.076              | -0.762   | 0.099    |
| SQ       | 4.439| 1.057              | -0.848   | 0.648    |

Table 1 Descriptive Statistics
3.2 Survey Tool

A questionnaire was used as a study instrument. The instrument was made up of two portions. The first portion was comprised of three personal data. The second part was comprised of 38 items from eight constructs. On a six-point Likert scale, the constructs were assessed. The scale included six choices for response rating from “1” as strongly disagree to “6” as strongly agree. The ten constructs used were PE, EE, SI, AT, SE, FC, PENJ, SQ, BI, and online learning management use (LU). PE, EE, SI, SE, AT, FC, SQ, and BI contained four items each. PENJ and LU contained three items each. The empirical variables for PE, EE, SI, FC, ENJ, BI, and LU were customized from Venkatesh (2000) and Venkatesh et al. (2012). The observed variables for SQ were customized from Fathema et al. (2015). Venkatesh et al. (2003) explained PE as the level at which an entity assumes that the use of technology can bring benefits to the success of the job, EE as the level of convenience linked to the use of technology, SI, as a perception of human impact on the decision of the consumer’, and FC as the level to which the user feels that institutional and high-tech supports are put in place to implement the system. In addition, PENJ is the degree to which technology is satisfying in addition to the predicted performance consequences (Davis et al. 1992). SQ refers to the required attributes of the information system (DeLone and McLean 2016). BI describes the readiness of users to use a particular technology to execute a specific behaviour (Ain et al. 2015).

To check the consistency of the survey tool, it was initially pilot tested to verify its validity with 20 students. To strengthen the survey tool, their comments were used. In addition, two experts in the field of research were given the survey tool to comment on the face and content validity. Their comments were also included in the final survey tool. The final questionnaires were sent to the partakers to complete online. The participants spent nearly 30 min replying to the questionnaire. 380 questionnaires were obtained from the participants and 276 questionnaires were used for data analysis after data screening, providing a 72.6% response rate. The internal consistency of the survey tool, as symbolized by Cronbach’s alpha was 0.91 showing a high consistency as recommended by Kline (2016).

3.3 Data computation

The demographic data and research question 1 were computed applying descriptive statistics, research question 2 was calculated using Analysis of variance (ANOVA), and multiple regression was adopted to analyze research question 3.

4 Results

4.1 Partakers’ information

In Table 2, demographic data for the students was published. 83% of the respondents were men, while 17% were women. 56.8% of them were in the age range of 20 and 25. The majority (41.3%) of the partakers were in the third year.
Research Question 1: What are the views of students on factors affecting their use of online learning system?

To respond to the above question, descriptive statistics was adopted to compute the data analysis. Table 3 below shows the result of the analysis. From Table 3, learners perceived that PE (M=4.99, STD=0.88), EE (Mean=4.99, STD=0.80), AT (Mean=4.92, STD=0.95), BI (Mean=4.98, STD=0.90), SE (Mean=4.84, STD=0.86) and PENJ (Mean=4.80, STD=0.99) impacted their use of online learning system.

Research Question 2: Are there substantial relationships between the factors (i.e., performance expectancy, effort expectancy, attitude, social influence, perceived enjoyment, and system quality) and students’ utilization of online learning?

To respond to research question 2, the Pearson product-moment correlation coefficient was used to examine the association between the factors (see Table 4). To guarantee that the presumptions of normality, linearity, and homoscedasticity were not contravened, initial studies were conducted. Grounded on Cohen’s (1988) postulate, there was a substantial strong positive connection among utilization of online learning system usage and social influence (r=.57, p=.001), perceived enjoyment (r=.56, p=.001) and system quality (r=.68, p=.001). Moreover, performance expec-

| Table 2 | Partakers’ Information |
|---------|------------------------|
| Item    | Status     | Computation | Total (%) |
| Gender  | Men        | 229         | 83        |
|         | Women      | 47          | 17        |
| Age     | 17–19      | 11          | 4         |
|         | 20–22      | 81          | 29.3      |
|         | 23–25      | 76          | 27.5      |
|         | Beyond 25  | 108         | 39.1      |
| Years of OLMS use | 0–2 | 174 | 63.0 | |
|         | 3–5        | 88          | 31.9      |
|         | Over 5     | 14          | 5.1       |
| Undergraduate Level | Level 100 | 37 | 13.0 |
|         | Level 200  | 104         | 37.7      |
|         | Level 300  | 114         | 41.3      |
|         | Level 400  | 22          | 8.0       |

| Table 3 | Means and Standard deviation of Students’ view on online system usage |
|---------|---------------------------------------------------------------|
| Construct | Mean | Standard Deviation (STD) |
| PE       | 4.99 | 0.88                      |
| EE       | 4.99 | 0.80                      |
| AT       | 4.92 | 0.95                      |
| SI       | 4.32 | 1.09                      |
| FC       | 4.39 | 1.08                      |
| SE       | 4.84 | 0.86                      |
| BI       | 4.98 | 0.90                      |
| PENJ     | 4.80 | 0.99                      |
| SQ       | 4.44 | 1.06                      |
| (LU)     | 4.21 | 1.19                      |
tancy \((r = .40, p = .001)\), effort expectancy \((r = .36, p = .001)\), attitude \((r = .45, p = .001)\), facilitating conditions \((r = .45, p = .001)\), self-efficacy \((r = .35, p = .001)\) and behavioural intention \((r = .38, p = .001)\) reasonably associated with electronic learning system usage.

Research Question 3: To what degree do the factors forecast the learners’ utilization of digital learning in the university of education?

The assumptions of multiple regression were verified. Initially, the participants per independent variable were computed. Field (2012) posited that 10 or 15 participants per predictor are required for reliable analysis. With a sample size of 276 and nine predictors, the participants per predictor were roughly 31. Hence, the assumption of sample size was achieved. Also, outliers were investigated applying Cook’s distances. Tabachnick and Fidell (2012) posited that cases with values above 1 demonstrate a critical concern. The results from the residual statistics showed that Cook’s distance was 0.136 indicating no critical issue. Additionally, multicollinearity was verified. Statistical analysis showed that the variance inflation factor values ranged from 1.80 to 3.58, which were below the recommended value of 10 (Field, 2012) and tolerance values ranged from 0.28 to 0.58, which were not more than 1 (Field, 2012) demonstrated that the multicollinearity assumption was met. Furthermore, the residual scatterplot proved that linearity and homoscedasticity assumptions were not violated. In addition, the histogram and normal P-P plot demonstrated that normality was achieved. Finally, the results from Table 4 demonstrated that the association that exists between the independent variables was below the recommended value of 0.9 (Kline, 2016) indicating that multicollinearity was not violated.

Table 5 illustrates the result of multiple regression analysis. The total change elucidated by the overall model was \(R^2 = 0.538\) suggesting that all the nine determinants elucidated 53.8% of the change in utilization of the online learning system. The whole model was mathematically significant, \(F (9, 266) = 34.47, p = .000\). Surprisingly, of the nine predictors, only two of them, SI \((\beta = 0.281, p = .000)\) and SQ \((\beta = 0.501, p = .000)\) contributed substantially to learners’ utilization of online learning system.

### Table 4: Relationship among items

| Item | PE  | EE   | AT   | SI   | FC   | SE   | BI   | PENJ | SQ   | LU   |
|------|-----|------|------|------|------|------|------|------|------|------|
| PE   | 1   |      |      |      |      |      |      |      |      |      |
| EE   | 0.57** | 1   |      |      |      |      |      |      |      |      |
| AT   | 0.59** | 0.62** | 1   |      |      |      |      |      |      |      |
| SI   | 0.48** | 0.46** | 0.50** | 1   |      |      |      |      |      |      |
| FC   | 0.40** | 0.57** | 0.45** | 0.57** | 1   |      |      |      |      |      |
| SE   | 0.47** | 0.48** | 0.52** | 0.46** | 0.53** | 1   |      |      |      |      |
| BI   | 0.43** | 0.50** | 0.57** | 0.48** | 0.36** | 0.50** | 1   |      |      |      |
| PENJ | 0.50** | 0.60** | 0.71** | 0.56** | 0.51** | 0.54** | 0.67** | 1   |      |      |
| SQ   | 0.49** | 0.50** | 0.56** | 0.52** | 0.54** | 0.48** | 0.47** | 0.71** | 1    |      |
| LU   | 0.40** | 0.36** | 0.45** | 0.57** | 0.45** | 0.35** | 0.38** | 0.56** | 0.68** | 1    |

**. Correlation is significant at the 0.01 level (2-tailed)
Discussion and Conclusion

This inquiry aimed to uncover the primary determinants affecting the use of electronic instructional systems in the era of COVID-19 epidemic. This inquiry that was based on firsthand proof, identified important factors that contributed to university students’ utilization of electronic instructional system. To respond to the research questions, both descriptive and inferential statistical techniques were adopted to evaluate the factors that contributed to learners’ approval of digital instructional system.

From the result of the descriptive statistics, PE, EE, attitude (AT), BI, and PENJ were among those determinants that were perceived by learners to have impacted their utilization of digital learning system. This outcome confirmed former reports (Almaiah et al., 2020; Salloum & Shaalan, 2019; Chao, 2019).

In addition, the correlation analysis revealed that social influence, perceived enjoyment, and system quality strongly correlated with learners’ utilization of online learning system compared with other constructs, which conformed to former analyses (Ghazal et al., 2018; Tarhini et al., 2017; Chao, 2019). Almaiah et al. (2020) claimed that system quality was a significant element to assess learners’ online learning system usage.

Furthermore, the results obtained from the multiple regression analysis demonstrated that 53.8% of the change in utilization of technology for digital learning was explained by all the nine determinants. Of the nine predictors, only social influence and system quality contributed substantially to learners’ utilization of online learning. This infers that students were concerned with the shift of conventional learning to digital learning during the covid19 pandemic where all assignments, learning materials, class exercises, discussions, examinations, etc. are done online. They are, therefore, influenced by their educators and classmates who often use the online learning system to carry out all these teaching and learning activities since no students want to be left out so far as this mode of learning is concerned. Moreover, students’ use of online learning system is influenced by the system quality. For instance, if learners find the system useful, easy to use, dependable, interactive, accessible at any time and

| Variable | $R^2$ | Adj $R^2$ | $F$ | $\beta$ | $t$  | $p$ |
|----------|-------|-----------|-----|--------|-----|-----|
| Model    | 0.538 | 0.523     | 34.473|        | 0.000*** | |
| PE       | 0.047 | 0.823     | -0.111| -1.789 | 0.075 | |
| EE       | 0.111 | 0.889     | 0.281 | 4.899  | 0.000*** | |
| AT       | 0.052 | 0.859     | -0.065| -1.156 | 0.249 | |
| SI       | 0.281 | 4.899     | 0.170 | 0.865  |       | |
| FC       | 0.052 | 0.859     | -0.065| -1.156 | 0.249 | |
| SE       | 0.052 | 0.859     | -0.065| -1.156 | 0.249 | |
| BI       | 0.019 | -0.324    | 0.105 | 1.329  | 0.185 | |
| PENJ     | 0.105 | 1.329     | 0.501 | 7.924  | 0.000*** | |
| SQ       | 0.105 | 1.329     | 0.501 | 7.924  | 0.000*** | |

PE=performance expectancy, EE=effort expectancy, AT=attitude, SI=social influence, FC=facilitating conditions, SE=self-efficacy, BI=behavioural intention, PENJ=perceived enjoyment, SQ=system quality

***p<.005
place, then they will be willing to use it. Ghazal et al. (2018) claimed that excellent system features including interactivity, user-interface, and reliable reaction time were successful determinants to determine users’ acceptance of e-learning system.

From the findings of the study, the crucial determinants that determined learners’ adoption of digital learning system and should be considered by universities when implementing online learning system include social influence and system quality. For the successful implementation of such system, these crucial elements cannot be neglected. Students’ perceptions of inferior system will demotivate them to continue to use it in their mixed learning education.

6 Contribution to the Study

By and large, this study contributed to the theory. The study’s findings indicated that social influence and system quality were significant predictors of learners’ use of digital learning systems. This study adds to contemporary studies indicating that social influence and system quality are significant predictors of utilization of digital learning system (Salloum & Shaalan, 2019; Ghazal et al., 2018). The study discovered that performance expectancy, effort expectancy, attitude, behavioural intention, perceived enjoyment, self-efficacy, and facilitating conditions all reasonably correlated with how students use digital learning systems. The finding corroborates current research (Almaiahet al., 2020).

The study also contributed to practice. The analysis found that social influence and system quality were the two most substantial predictors of online learning system usage. Thus, users’ use of a system will depend on its quality. Therefore, a broad consultation should be done to solicit the views of the users when an institution is planning to acquire electronic learning system to complement the conventional methods of teaching and learning. In addition, students are convinced to use a system when they realize that users who are relevant to them start to use the technology system. Therefore, teachers who are the catalyst for transformation must be given the necessary resources to use the system to encourage their students also use it. To conclude, if learners find a system simple to use and useful, it improves their motivation and attitude to use it. Hence, institutions should implement a simple, reliable, and useful online learning system.

6.1 Shortcomings and forthcoming study

Because this study was conducted in a university setting, future research should examine similar studies in other educational institutions using a diverse sample of participants, sampling processes, and data collection methodologies. Additionally, nine variables accounted for 53.8% of the change in the endogenous variable, leaving 47.2% unaccounted for. To address this discrepancy, future testing of the model should include other determinants affecting online learning system use in schools. Rather than doing a cross-sectional study, a longitudinal study could be used to study the factors that contribute to the use of electronic learning system over time. Finally, the researcher was unable to generalize the findings due to the sample being drawn...
from Ghana. As a result, this study should be reproduced in other developing countries to gain a more absolute picture of the determinants supporting students’ use of technology.

Conflict of interest None.

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