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Perceived Effectiveness of Online Teaching and Learning of Accounting during COVID-19 Pandemic and Its Influencing Factors

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Abstract

Prior to the Covid-19 pandemic, teaching and learning of accounting, especially in the developing world like Ghana, was mostly face-to-face rather than online. Amidst Covid-19, higher education institutions in developing countries abruptly switched from face-to-face to online learning. Mastering the theoretical and practical competencies of accounting at the higher education level requires deep learning. However, student interaction, engagement and practice are necessary factors for deep learning. Online learning however, may not provide authentic interaction and practice experiences as in face-to-face instruction. This paper examines students' perception of the effectiveness of online mode of teaching and learning accounting during the school closure due to the Covid-19 pandemic. The aspects of online teaching and learning examined include content delivery, students' interaction, and students' engagement. Through survey approach, data was collected using questionnaire guides. It was found that students, in their opinion, are generally competent in basic computer and online skills, except in performing group task online. The students also inducted that access and quality of internet was not the best. Also, except for student engagement, students perceived online teaching, and learning of accounting as ineffective especially with regards to course interaction. The results indicates that gender, type of gadgets used as well as their interactions

have no significant effect on students' perception of the effectiveness of online teaching and learning of accounting. However, students' perception of their computer and online communication skills, and access to quality internet have significant effect on students' perception of effectiveness of learning accounting online. Therefore, to enhance the effectiveness of online mode of learning accounting in the future, stakeholders should prioritize students' interaction, access to quality internet and students online learning competency.

Keywords: online learning, effectiveness, teaching, learning accounting, influencing factors

1. Introduction

Accounting as a subject is an aspect of business education curriculum (Pereira and Sithole, 2020) and as a field of study is a vocational career pathway in business education with various areas of specializations. One of the common aspect of accounting is financial accounting. In general, the term accounting and financial accounting are used interchangeably to mean accounting as a subject at a particular level of learning and that is the case in this paper. At the higher education level accounting is both practical and theoretical requiring students not only to understand how to account but also the principles behind accounting practices (Van Romburgh, 2014). Thus, memorization of rules and standards is not enough to master accounting (Akintelure (1998*)*). Mastery of accounting involves understanding of standards and principles and intensive practice of the application of the standards and principles in an accounting task (Pereira & Sithole, 2020). And this requires deep learning through adequate student engagement and interaction (Abeysekera, 2008).

Certainly, e-learning of financial accounting is not new especially in the developed world. However, studies on the effectiveness of e-learning of financial accounting is not common and studies on the effectiveness of emergency switching from face-to-face financial accounting course to online learning may even be more scarce. This paper seeks to make a contribution on the effectiveness of e-learning of financial accounting in general but in the context of emergency adoption of e-learning for teaching and learning financial accounting amidst Covid-19 pandemic.

In March 2020, the world health organization (WHO) declared Covid-19, a pandemic that threatened the health, social and economic being of humanity. To effectively implement social distancing, a key recommendation of WHO for curbing the spread of the Covid-19 virus, most countries all over the world resorted to social and economic lockdown which involved the closure of all activities that will result in physical contact of people. This resulted in a disturbing suspension of face-to-face teaching and learning which is the predominant and established mode of teaching and learning in education and training worldwide, especially in the developing world.

Most educational institutions, especially, higher learning institutions adopted online teaching and learning as an emergency measure to forestall a complete shutdown of teaching and learning. Although online learning was already an alternative mode of learning in some advanced countries, it is a novel mode of learning in most countries especially the rural parts

of the world (Paesani, 2020). Educational institutions and learners worldwide lauded online learning for its flexibility, ease of use, controllable environment and the fact that it provided the only better alternative for continuing learning in the pandemic (Khan et al., 2021). Against this background, universities in Ghana also adopted online learning, specifically, during the nationwide lockdown and closure of schools, as an emergency measure but not an alternative mode of learning. Like the case in most developing countries, adoption of online learning in Ghanaian educational institutions was done amidst challenges such as unavailability of online learning gadgets, unstable network and internet services, and insufficient online teaching and learning expertise on the part of both instructors and students.

It is widely touted that online learning overcomes many inherent drawbacks of the traditional face-to-face teaching and learning, especially its lack of flexibility in the use of resources (Lam & Bordia, 2008; Williams & Williams, 2010). However, it is also believed that online learning fall short of some of the important elements of a traditional face-to-face teaching and learning environment necessary for effective learning. Online learning lacks shared learning space similar to traditional classroom setting (Johnsona, Hornikb, & Salas, 2008) which is the bases for interactive learning and student engagement (Nguyen, Tangworakitthaworn, & Gilbert, 2020). Effective learning in the face-to-face environment is largely conditioned on interaction in a share learning space and time (Noesgaard & Ørngreen, 2015). However, this crucial element of effective learning is generally viewed as a key limitation of online learning, especially, to first-time users of the online learning mode. In an emergency adoption of online learning with little preparations as in the case of Covid-19 pandemic, contextual factors like unavailability of online learning device, inadequate access to internet and students factors like poor IT efficacy and skills may make learners feel isolated, disconnected, disinterested, unmotivated, and disengaged in a truly interactive and engaging online learning environment and such learners will not be successful in an online learning situation (Yen & Liu, 2009, Fredricks et al., 2016).

The mass adoption of online learning during Covid-19, certainly, provided the singular alternative for successful avoidance of total shutdown of the world education system amidst the protracted lockdowns worldwide. However, even before the emergency, the quality of online teaching and learning was a subject of enquiry in the context of well-planned adoption of e-learning. Understanding the level of effectiveness of online learning in this pandemic and factors deriving it is crucial for effective improvement in the effort of all stakeholders, especially instructors and faculty of higher education institutions for effective online teaching and learning in the future.

Most studies on the mass adoption of online learning during the Covid-19 pandemic are focused on assessing students and teachers perceptions of the importance, usefulness and benefits of adopting online learning, the effect of online learning and its influencing factors, enhancing effective learning via online learning, mode of adoption and challenges of adoption of online learning during Covid-19 in both developed and developing countries (see, Agarwal & Kaushik, 2020; Khan, Nabi, Khojah, & Tahir, 2021; Nambiar, 2020; Surani & Hamidah, 2020; Agung, Surtikanti & Quinones, 2020; Baber, 2020; Chick, Clifton, Peace, Propper, Hale, Alseidi & Vreeland, 2020; Ferrel & Ryan, 2020; Torda, Vela & Perkovic, 2020;

Rajab, Gazal & Alkattan, 2020; Abbasi, Ayoob, Malik & Memon 2020). Few studies have looked at the effectiveness of online learning in the context of the pandemic. Regarding the effectiveness of online learning, the attention has been on how to enhance the effectiveness of e-learning through improvement in content presentation, e-learning technology and interactivity of e-learning environment (see Gunawan, Hui, Ma'sum, & Sukawati, 2020; Nguyen, Tangworakitthaworn, & Gilbert, 2020; Pee, 2020). Wang, Zhang, & Chen (2021) however looked at the role of students-specific and institutional specific factors on the effectiveness of e-learning.

Research on the effectiveness of online learning has increased in recent years mainly because of the upsurge in political interest in online learning and the increase in IT advancement (Noesgaard & Ørngreen, 2015). Majority of these studies are focused on the effect of online learning artifact (online learning solutions and process) on effectiveness of online learning. It is asserted that most studies on effectiveness of online learning emphasis the effect of the online solution because of the need for improving and innovating the online leaning technology (Wang et al., 2021) or because, as Noesgaard & Ørngreen (2015 observed, other factors such as contextual (institutional and learner specific) factors are more subjective and complex to investigate and out of the responsibility of online learning solution professionals. Similarly most of the studies on the effectiveness of online learning, not surprisingly, are conducted in the context of developed countries where e-learning have gained grounds as an alternative mode of learning to traditional face-to-face largely because of advancement in technology and availability of technological resources, infrastructure, tools, as well as political interest in digitization of education. In developing countries like Ghana where e-learning is not prioritized as an alternative mode of learning but only a last resort where face-to-face is not possible, research on effectiveness of e-learning is yet to gain some attention. Besides, the results of existing studies on the effectiveness of e-learning and factors that influence it is inconclusive. It is against this background this study aims to examining the effect of key contextual factors and student specific factors on the effectiveness of lecturer-led online teaching and learning of financial accounting during the Covid-19 nationwide lockdown and schools shutdown.

Effectiveness of online learning in this paper is conceived as the learners' perception of the ability of online learning to provide learners with similar experiences as in face-to-face. This is on the grounds that the learners are accustomed to face-to-face learning and their conception of effectiveness of e-learning will be influenced by their face-to-face experiences. Thus, effectiveness of online learning is measured as students' perceived satisfaction with online course content delivery, perceived course interaction during online sessions and perceived students engagement in online learning. The factors examined in this study are the contextual and individual factors identified by Noesgaard & Ørngreen (2015). The key contextual factors used in this study are access to internet service and the type of gadget used for online learning. The key learner specific (individual) factors considered are computer and online learning skills efficacy, and gender.

1.1 Purpose of the Study

The purpose of this paper is to examining the effect of contextual factors and student specific factors on the effectiveness of lecturer-led online teaching and learning of financial accounting during the Covid-19 pandemic school closure in Ghana. The key objectives of the study are:

1) Access students perception of the effectiveness of online teaching and learning of accounting during the Covid-19 pandemic school closure in Ghana

2) Examine the effect of students' computer and online learning skills, gadget used, age, gender, and access to quality internet service on their perception of the effectiveness of online teaching and learning of accounting during the Covid-19 pandemic school closure in Ghana

2. Effectiveness of Online Learning

2.1 The Concept of Online Learning Introduction

Online learning sometimes broadly referred to as e-learning is the use of ICT tools and the internet as a medium of teaching and learning where instructors and students are separated in time, space or both as opposed to traditional face-to-face mode of teaching and larning (Means, Toyama, Murphy, Bakia, & Jones, 2009; Aparicio, Bação, & Oliveira, 2016). In e-learning mode, learning materials, course communication, interaction engagement and content delivery are done electronically through the mediation of information technology devices and the internet (Stonebraker & Hazeltine, 2004; Pradana & Amir, 2016). Jamil & Hamre (2018) described online learning as a type of distance learning where the main media is the internet. The ICT tools that are commonly used in e-learning include computers, television and radio (Pradana & Amir, 2016), tables, mobile phones among others.

With advancement in information technology (McBrien, Cheng, & Jones, 2009) , increase access to internet (Singh & Thurman, 2019) and recent policies of education for all, adoption of online learning surged in recent times. Prior to the pandemic online learning existed in the form of distance education or in blended on-campus learning mode. The fact however is that online education has all along been considered to be a 'good-to-have' alternative but not a better one in terms of effective teaching and learning, especially in developing countries. However, in this era of Covid-19, online learning became a necessity and the most appropriate alternative mode of teaching and learning (Dhawan, 2020) amidst the global closure of schools.

Pradana & Amir (2016) identified three types of e-learning widely recognized in the literature and these are Asynchronous learning, Synchronous learning and Blended learning. Asynchronous learning is technology mediated teaching and learning where there is a time gap between instruction and learning (Kaplan-Leiserson, 2000). Synchronous learning is online learning where teaching and learning happen at the same time and according to Pradana & Amir (2016), this will include interactions in the form of audio, video conferencing, Internet telephony, and two-way live broadcast. Blended learning is a teaching

and learning mode that tries to optimize the benefits of online learning and face-to-face learning by combining aspects of the two learning approached in teaching and learning.

Any of the three forms of e learning requires careful planning, design (Branch & Dousay, 2015) and implementation. In most countries the adoption of online learning was a responds to the emergency need for alternative mode of teaching and learning as a result of impracticably of face-to-face learning due to Covid-19. Therefore, such adoption of e-learning may be roundly described as "emergency remote teaching" (Bozkurt & Sharma, 2020; Vlachopoulos, 2020).

2.2 Definition and Measurement of E-learning Effectiveness

Pradana & Amir (2016) defined effectiveness of distance education through the electronic media as the students' perceived understanding and absorption of the lecture material, students' perceived lecturer performance, and students' satisfaction with lecture materials. Noesgaard & Ørngreen (2015) identified 19 different definitions and views of e-learning effectiveness. Noesgaard & Ørngreen (2015) found that the most commonly used definition of e-learning effectiveness in higher education studies is 'learning outcome', which is usually operationalized as exams or test results and grades. The other most commonly used definitions of e-learning effectiveness in order of popularity, are transfer (application to practice), perceived learning, skills or competency, attitude, satisfaction, skills acquired, engagement and motivation.

Majority of studies on the effectiveness of e-learning indicates that e-learning is effective despite the numerous challenges of e-learning (Noesgaard & Ørngreen, 2015). Noesgaard & Ørngreen observed that this occurrence could be explained by the fact that most of the empirical studies on the effectiveness of e-learning seems to have some interest in the success of e-learning.

2.3 Factors that Influence the Effectiveness of e-Learning

In the literature, e-learning effectiveness is presented as a multidimensional concept. As indicated by Wang et al. (2021), e-learning effectiveness is influenced by many factors. Noesgaard & Ørngreen (2015) in their review of over 110 coded published papers on e-learning effectiveness identified three categories of factors that influence effectiveness of e-learning which are: nature of e-learning solution and process, individual factors, and contextual factors.

According to Noesgaard & Ørngreen (2015), the key contextual factors are resource (time, technologies: tools and internet), and support (from managers, IT personnel or peers). The extant literature also indicate that students' perception of online learning before and during the Covid-19 lockdown is largely shaped by a number of factors including students' access to online learning tools, (Folorunso, Ogunseye, & Sharma, 2006; Addah (2012) access to internet (Khalil et al., 2020; Layali & Al-Shlowiy, 2020; Demuyakor, 2020; Ali, 2020; Addah, 2012) and access to technical support (Nambiar, 2020).

During the school shutdown amidst Covi-19, support to students was also done online and

hence the type of IT tools students used and access to quality internet would have certainly influence the sort of support students received. Thus, in this paper technology in terms of IT gadgets used and access to internet is considered a more probable factor that could have influence students perception of the effectiveness of online learning during the school shutdown. *Given that students used whatever IT gadget at their disposal for online learning during the school shutdown, will the type of gadget used have any significant influence on students' perception of the effectiveness of online learning?*

For the e-learning solution and process, Noesgaard and Ørngreen (2015) identified active learning, collaboration, communication, design, instructional scaffolding, interaction, learner control, practice (case base learning, simulation, problem based learning, modelling), usability and technological constrains as some of the features that affects e-learning effectiveness. However they indicated that the key aspects of the e-learning solution and process responsible for the effectiveness of e-learning from their review are 'interaction' and 'practice'. Thus, e-learning solutions that are more interactive and provide opportunity for students practice are more associated with effective e-learning. Specifically, interaction is found to be crucial for effective online learning in terms of successful completion of online courses (Bennett-Levy, Hawkins, Perry, Cromarty, & Mills, 2012)

Noesgaard and Ørngreen (2015) indicated that the individual factors that may influence effective online learning include age, experience in e-learning, and motivation, but the outstanding factors base on their review are 'learner experience' and 'learner motivation'. The adoption of online learning during the Covid-19 was not by choice but a necessity and hence students' motivation to learn online would have been interrupted by the necessity. Learner experience may be broad but the fundamental learner experience necessary for effective online learning is learner computer and online skills or efficacy. Bhuasiri, Xaymoungkhoun, Zo, Rho, and Ciganek (2012) found that the top four critical success factors of online learning in developing countries according to ICT expert in an explorative study are computer training, perceived usefulness, attitude toward e-learning, and computer self-efficacy. Pradana and Amir (2016) observed that both instructors and students involved in online learning are must have good IT skills in order to maximize the benefits of online learning. They asserted that the expertise in using computer applications are believed to affect the success of learning from a distance through IT. Hence, students' digital competency and computer literacy are among the factors that may influence students' perception of online learning (Folorunso, Ogunseye, & Sharma, 2006; Addah, 2012). *Given that learners have different computer and online learning skills and efficacy, will learner computer and online efficacy significantly influence learner perception of effectiveness of online learning?*

Age is not considered a learner factor that would influence the perceived effectiveness of online learning in this study because over 90% of the sample are the same age group (20 years to 34 years). Noesgaard and Ørngreen (2015) observed that in general terms, gender is scarcely found to have significant influence on e-learning effectiveness. *In developing countries like Ghana where gender bias is prevalent in the education system, will gender have a significant effect on the effectiveness of e-learning?*

Out of the three categories of factors identified by Noesgaard and Ørngreen (2015), they observed that the most widely studied factors in relation to effectiveness of e-learning are the factors relating to e-learning solution and process (i.e. 'interaction' and 'practice'). This is attributable to the fact that the key strength of face-to-face learning against e-learning is interaction and opportunity for practice and hence the curiosity of researchers to understand the role of interaction and practice in e-learning. Conversely, in the view of Noesgaard (2014), contextual factors may be more critical to e-learning effectiveness than the e-learning solution and process and hence deserve more consideration.

Wang et al. (2021) identified two categories of factors that influence effectiveness of e-learning and these are internal and external factors. In their view, internal factors are the student specific factors such as learning motivation and learning strategies and this correspond with the individual factors of Noesgaard and Ørngreen (2015). External factors on the other hand include learning environment and learning monitoring which correspond with the contextual factors and the e-learning solution and process factors of Noesgaard and Ørngreen (2015).

3. Methodology

The study targeted a sample of 400 students of the Faculty of Business Education, University of Education, Winneba (Kumasi campus) now Akenten Appiah-Menka University of Skills Training and Entrepreneurship Development. These students participated in an undergraduate online accounting course during the school closure amidst Covid-19 pandemic between March 2020 and December 2020. The adoption of online learning in this case was an emergency switch from face-to-face teaching and learning in order to complete the course work for the 2019/2020 academic year.

Questionnaires were administered using Google forms. The questionnaire content was grouped in three main sections. The first section assessed student's computer and online communication skills and efficacy. Students were asked to rate 8 statements pertaining to their ability and comfort in using computer to communicate online and complete learning tasks online. Respondents were required to rate these statements on a 7-point scale where 1 is "Not at all", and 7 is "To a largest extent". The second section of the questionnaire solicited students' perception of the effectiveness of teaching and learning accounting online in terms of the course content delivery (5 statements), course interaction (4 statements), and student engagement during delivery (4 statements). These were to be rated on a 7-pont scale; 1 for "Strongly Disagree", and 7 for "Strongly Agree". The final section of the questionnaire solicited information on students' biographies such as gender, age, gadget used for online learning, and two items on access and quality of the internet service which were to be rated on a scale of 1- "Very Poor" to 5 – "Excellent". Items in the questionnaire were presented to the respondents without labels to each section.

The internal consistency of the Likert scale was calculated using Cronbach alpha. The Cronbach alpha score for each subscale: Computer and online skills (0.895), Course Content delivery (0.900), Course Interaction (0.904) and Student Engagement (0.911). These scores indicate a high internal consistency of the subscales (Pallant, 2007).

Table 2 & 3 show the ranking of each statement and overall index for computer and online skills, and the effectiveness of online teaching and learning of accounting respectively. Percentages for the ranking were computed by recoding each item; converting all responses from 5, 6, and 7 as 1, which is interpreted as "To a largest extent" for Computer and online learning Skills, and as "Agree" for the effectiveness of Online learning of accounting. All other scores were codded as 0. These were then expressed as percentage of the total sample for each item, and the average as the index using the formula below:

$$I_j = \frac{\sum x}{N * j}$$

Where 'I_j' is the Index of interest, 'X' is the count of scores for a scale with score = 1, 'N' is the total sample (336), whereas 'j' is the number of items in each of index.

To delineate the effect of access and quality of internet, computer and online skills, gender, and type of garget used on the effectiveness of online learning of accounting during the school lockdown amidst Covid-19, the Multivariate Analysis of Variance (MANCOVA) technique was employed using IBM's SPSS version 25. Prior to the analysis, assumptions for MANCOVA were checked to ensure that the data is suitable for the analysis. Inspection of Skewness and Kurtosis of the dependent variables, effectiveness of online learning in terms course content delivery, course interaction and student engagement (see in Table 4), indicate that there is no serious deviation from normality since the statistic for each variable is within the range of -3 and +3 (Hair., Black, Babin, & Anderson, 2014).

Course Content Delivery, Course Interaction, and Student Engagement were entered as dependent variables; Gender, Age, and Gadget Used were entered as independent factors; whereas Computer and Online communication skills, and Quality of Internet access were entered as covariates in the multivariate analysis of variance. Box's Test of Equality of Covariance Matrices showed a violation of the assumed homogeneity of variance ($F=1.560$, $p < .001$) (Hair et al., 2014; Pallant, 2007). Levene's Test of Equality of Error Variances was not significant for any of the dependent variables. As a result of the violation of the homogeneity of variance, Pillai's Trace coefficients, which is robust even when the assumption of homogeneity is not met, were reported from the multivariate tests (Pallant, 2007). Generally, multivariate statistics (F-statistic) were evaluated at alpha value of .05, and univariate statistics (F-statistic), at alpha value of .017 after Bonferroni adjustment (that is alpha of .05 divided by 3, the number of dependent variables) (Pallant, 2007).

4. Results of the Study

A total of 336 responses were received out of the sample of 400 (84% response rate) and all were deemed usable. Table 1 shows a background characteristics of the respondents

Table 1. Demographics of Respondents

Variables and Categories		Frequency
Gender	Female	94
	Male	242
Age Group	20 to 24 years	140
	25 to 29 years	127
	30 to 34 years	53
	35 to 39 years	9
	40 years and above	2
Gadget	Smart Phone	254
	Tablet PC	4
	Computer (Laptop/Desktop)	78

From Table 1, majority of the respondents are male students, which is quite typical in the Ghanaian setting. Age wise, the majority were under age 30. Also, the vast majority of students used smart phones to access online learning, others used computers, and only few used tablet computers.

The rest of the results are presented below under the headings students' computer and online learning skills, perceived effectiveness of online learning and factors that influence students' perception of the effectiveness of teaching and learning accounting online.

4.1 Students' Computer and Online Learning Skills

Students' competency in the use of computers and other IT tools for communication and interactions through the internet is fundamental for students to successful participate in an online learning environment. One of the objects of this paper is to find out whether students have the basic competencies in using computers, IT tools and the internet for effective online learning. Table 2 presents the summary of the data collected on students' computer and online learning skills.

Table 2. Computer and Online Communication skills efficacy of Learners

Items	To a Large Extent
I can send an email with a file attached.	82.74%
I have the basic skills for finding my way around the Internet	77.08%
I am able to express myself clearly through chats	74.40%
I have the basic skills to operate a computer	74.11%
I am able to communicate effectively with others using online technologies	70.54%
I am comfortable using a computer several times a week to participate in a course	65.48%
I am able to ask questions and make comments in clear writing	65.48%
I am able to use online tools to work on assignments with students who are in different time locations	56.25%
Overall Index	**70.76%**

From Table 2, the overall index for computer and online efficacy is 70.76%. That is about 70% of the respondents believe they have appreciable computer and online communication competencies relevant for online learning. Sending emails and attaching a file is the most popular computer and online communication competency of students. On the contrary, Table 2 shows that students are generally not competent with regards to using online tools for working on assignments remotely with their colleagues.

4.2 Perceived Effectiveness of Online Learning

In all, thirteen (13) items were used to evaluate students' perception of the effectiveness of learning accounting online during the school closure amidst Covid-19 in terms of Course Content Delivery (CCD), Students Engagement (SE) and Course Interaction (CI). Table 3 presents a summary of the data collected.

Table 3: Summary of Results on Effectiveness of Online learning of Accounting

Variable	Items	Agree %
CCD	I am satisfied with the content delivery of the theoretic aspect of the course in online	59.23%
SE	I am able to comprehend and practice alongside examples worked in online accounting sessions	54.17%
SE	I am engaged throughout each online accounting session	52.38%
SE	I am able to fully concentrate on each accounting session	51.49%
CCD	I am satisfied with the content design of the online accounting course	50.30%
SE	I am able to follow worked examples of accounting problems to solve other example	50.30%
CI	Students questions and concerns were adequately addressed in each session	48.81%
CCD	Demonstration of examples by the lecturer was comprehensible (easy to understand)	47.92%
SE	Feedback to questions asked were prompt	47.62%
CI	Myself and my colleagues could do group discussions online to complete accounting assignments	45.83%
CCD	Pace and flow of demonstrations was suitable and easy to follow during the course	45.54%
CCD	Concepts of accounting were well understood during the online session	44.35%
CI	Myself and my colleagues could ask and respond to questions during online accounting sessions	44.05%
	Overall Index	**49.38%**

Note. CCC is Course Content Delivery, SE is Student Engagement, and CI is Course

Interaction.

Table 3 shows the ranking of the statements on the effectiveness of online teaching and learning of accounting, based on the frequency of students who agree with the statements, as well as the overall index of the effectiveness of online teaching and learning of accounting. On average, 49.38%, that is less than half of the respondents agree that the online teaching and learning of accounting was effective. On the individual items, at least half of the students agree on the effectiveness of each of the items on students' engagement. Besides the items on content design, and delivery of theoretical content, less than half of the students agreed with the other statements on content delivery as well as all the statement on course interaction. These results indicate that whiles students think they were engaged in the online accounting sessions, probably due to the novelty of having lectures via the internet, they feel the online mode of teaching and learning was not interactive and the content delivery was not the best.

4.3 Factors that influence students' perception of the effectiveness of teaching and learning accounting online

As already discussed in the methodology, composite variables were created for each of the construct, namely, computer and online communication skills, course content delivery, course interactions, and student engagement, using the compute function in SPSS. Descriptive statistics to that effect is shown in Table 4.

Table 4 shows that to larger extent students believe that they have the basic computer and online communication skills (mean = 5.3, SD = 1.299) and this concur with the results in Table 2. It is also evident from Table 4 that students on average did not agree on the effectiveness of course content delivery, (mean = 4.335, SD = 1.617), did not agree on the effectiveness of course interaction (mean = 4.217, SSD = 1.675), and moderately agree on the effectiveness of student engagement (mean = 4.489, SD = 1.624). These results also concur with the results in Table 3. Notably, Table 4 reports the results on access to quality internet and the results indicates that the quality of internet access was somewhat not good (mean = 3.360, SD = 1.041).

Table 5 below presents the results on the effect of students computer and online skills, quality internet access, gender and type of gadget used for online learning on the effectiveness of course content delivery, course interaction and student engagement .

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Table 4. Descriptive Statistics of Variables of the study

Variables	Freq.	Min	Max.	Mean	Std. Dev.	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
Computer and Online Skills	336	1	7	5.300	1.299	-0.701	0.133	-0.079	0.265
Course Content Deliv.	336	1	7	4.335	1.617	-0.217	0.133	-0.837	0.265
Course Interaction	336	1	7	4.217	1.675	-0.150	0.133	-0.882	0.265
Student Engagement	336	1	7	4.489	1.624	-0.354	0.133	-0.663	0.265
Quality of Internet Access	336	1	5	3.360	1.041	-0.086	0.133	-0.542	0.265

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Table 5. Summary of Results of Independent Variables of the Study on the Effectiveness of Online Learning

Independent Variables	Dependent Variables	Multivariate F-Ratio	Sig. (a=.05)	Univariate F-Ratio	Sig. (a=.017)	df
Quality of Internet Access		5.672	0.001			3.000
	Course Content Presentation			14.281	0.000	1
	Interaction During Course Delivery			9.714	0.002	1
	Student Engagement During Delivery			13.411	0.000	1
Computer and Online Skills		29.010	0.000			3.000
	Course Content Presentation			77.413	0.000	1
	Interaction During Course Delivery			53.241	0.000	1
	Student Engagement During Delivery			64.436	0.000	1
Gender		1.278	0.282			3.000
	Course Content Presentation			2.336	0.127	1
	Interaction During Course Delivery			0.186	0.667	1

	Student Engagement During Delivery			0.399	0.528	1
Gadget used		0.918	0.481			6.000
	Course Content Presentation			0.671	0.512	2
	Interaction During Course Delivery			1.586	0.206	2
	Student Engagement During Delivery			1.832	0.162	2
Gender		0.650	0.690			6.000
*****	Course Content Presentation			0.454	0.635	2
Gadget used	Interaction During Course Delivery			0.083	0.920	2
	Student Engagement During Delivery			0.340	0.712	2

The results of the analysis showed that gender, and gadget used, and their interactions have no significant effect ($p > 0.05$) on students' perception of the effectiveness of learning accounting online (in terms of course content presentation, interaction during course delivery, and students engagement during course delivery) during the Covid-19 school shutdown. However, the covariates: computer and online communication skills, and access to quality internet were found to have significant influence ($p < 0.017$) on students perception of effectiveness of learning accounting online (in terms of course content presentation, interaction during course delivery, and students engagement during course content delivery).

4.4 Limitations of the Study

The interpretation of the findings of this paper is subject to the limitation that only students of a selected year group offering an accounting degree in a selected higher education institution in Ghana were considered as the sample for the study. Accounting students of different year groups and different higher education institutions may have different perceptions and further research is required to study that phenomena. Yet, the findings of this study will provide preliminary empirical information to guide educational policies on e-learning and future research in this context. Another limitations of this study worth noting is the data analysis technique used and the characteristics of data analysed which is already discussed as part of the methodology of this paper.

5. Conclusion and Recommendation

In general terms students believed they have basic computer and online communication skills for online interactions especially in sending mails and attaching files to messages. In all, the least popular computer and online learning competency among students is using online tools for working on assignments remotely with their colleagues. Also, it is found that the access and quality of internet was generally not good. The findings suggest that students perceived online teaching and learning of accounting as ineffective especially with regards to course interaction. In addition, gender, and the type of gadget used have no significant effect on students' perception of the effectiveness of teaching and learning accounting online in terms of course content delivery, course interaction and students engagement. Finally, the findings indicate that students' computer and online skills, and access to quality internet have significant effect on students' perception of effectiveness of teaching and learning accounting online.

These findings implies that students expect better online content delivery, better student interaction and engagement than they experienced in the online accounting class. There is more room for improvement in terms course content delivery, student engagement and student online interaction. More importantly, since interaction is one of the key features of face-to-face teaching and learning and also imperative for deep learning, interactivity of an online course is crucial for effectiveness. However, a well design, delivered and interactive course will eventually be ineffective if students are unable to access the learning platform online with reliable and quality internet service. Quality of internet is therefore a necessity for effective online learning. To improve online learning effectiveness in Ghana, the first thing to do is addressing the issue of poor internet quality and access. Another issue of access to

internet is the cost of internet. Quality internet service should not only be available but also affordable especially to students. In recent times the government have invested in providing quality internet service in all educational institutions in Ghana. However, in remote learning situations like that of Covid-19 school lockdowns, the on-campus internet becomes useless to students since they can only access the internet whiles on campus.

Another implication of the findings of the study is that educational institutions especially higher education institutions should provide practical training to students on e-learning since such experiences have significant effect on effectiveness of online learning. One way of providing such an experience during normal school sessions is to adopt the blended learning approach where part of a course is taking online and part in face-to-face.

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