

COVID-19 AND IMPLEMENTATION OF ONLINE LEARNING IN GHANA: PERSPECTIVES OF UNDERGRADUATE STUDENTS IN HIGHER EDUCATION INSTITUTIONS

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ABSTRACT: The COVID-19 pandemic has impacted teaching and learning in higher education institutions globally and Ghana is no exception. Educational institutions have had to adapt to new models of teaching as well as engagement of students through the use of technology with a purpose of enabling continuity in academic work. Using the connectivism learning model and a purposive sample of eighteen undergraduate students from six public and private higher education institutions, this paper explored their perspectives about institutional adaptation of online learning during the COVID-19 pandemic. Data collection procedures included in-person or phone semi-structured interviews. The findings of the study indicate that though the majority of higher education institutions did not have adequate structures to smoothly transition teaching and learning online during the COVID-19 pandemic, they were able to adapt and make do with available technology that suited a majority of students for teaching and learning to continue. Participants revealed challenges encountered during online teaching and learning to include inadequate network bandwidth that was further impacted by one's location, data insufficiency, and inconsistent online scheduling by faculty members which affected student availability. It was also noted that there were variations in the ways higher education institutions implemented online learning to aid student academic engagement, teaching and learning during the COVID-19 pandemic. Ultimately, there is therefore a call for the promulgation of a policy to standardize the delivery of online learning in higher education institutions in Ghana.

Keywords: academic engagement, Ghana, higher education institutions, online learning, undergraduate students.

Introduction

The global COVID-19 pandemic has impacted institutions in varied ways and educational institutions have not been spared. The outbreak of the COVID-19 pandemic started in December 2019, in Wuhan, Hubei Province, China. This led to a declaration of a public health emergency by the World Health Organization on January 30, 2020 (Sohrabi et al., 2020). This virus has negatively impacted the strategic plans of every country leading to border closures, movement restrictions across borders and sensitization of citizenry on preventive measures that needed to be put in place to halt its spread (WHO, 2020). Globally, the COVID-19 pandemic has affected about 91 percent of students (UNESCO, 2020). The ravages of the COVID-19 virus have not yet subsided since most countries that were affected by the first and second waves are now being impacted by the third wave (UN News, 2021).

Importantly, the global effect of this virus has not subsided and for a second year running, though vaccines have been formulated for this virus, the variants keep adapting to the environment resulting in institutions (higher education included) having to

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emphasize the keeping of COVID-19 protocols at all times to halt the spread of the virus. The Ghana Health Service, in a statement on July 21, 2021, enumerated the rising numbers of COVID-19 cases and associated mortality in the various regions of the country of Ghana. The statement further reiterated the need for citizenry to abide by the COVID-19 protocols in order to halt the effects of the third wave in its track (Tawiah, 2021). As of July 19, 2021, Ghana has cumulatively recorded 100,250 cases of COVID-19 and 819 deaths since March 2020 (Ansah & Nukunu, 2021). The onset of COVID-19 has resulted in institutions of higher education implementing online learning and teaching engagement in varied forms for undergraduate students. A definition of e-learning under which online learning is a subset, is provided by Selim (2007) as “the delivery of content via electronic media, such as internet, intranet, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM” (p. 397). E-learning is divided into different forms ranging from web-supplemented courses, through web dependent to mixed mode courses and to fully online courses (OECD, 2005).

In Ghana, higher education institutions in both the public and private sectors were allowed to reopen and resume academic work in May 2020 after lockdown announced by the government was lifted. As a result, various models of teaching as well as engagement of students either through the use of technology or a blend of face to face with online learning has been adapted. During the pre-COVID-19 era, online learning has been touted as the answer to the problem of access to quality higher education in Sub-Saharan Africa (Asunka, 2008). The onset of COVID-19 has precipitated the use of digital technologies accessible in Sub-Saharan Africa (SSA) to facilitate student learning and engagement. Research has also shown the preparedness of public higher education institutions in SSA generally and Ghana in particular to focus on online distance education (Forson & Vuopala, 2019), and the perceptions of students about mobile learning (Edumadze et al., 2019; Obeidat, 2020). Others have examined the perceptions of students about incorporating e-learning into teaching and learning in Ghana (Tagoe, 2012), and attitudes about students engaged in online learning during COVID-19 (Agormedah et al., 2020; Hussein et al., 2020). The results of research indicate that convenience, time effectiveness and safety were some of the favorable outcomes indicated. On the other hand, some outcomes that undergraduate students noted as negative were inability to focus, internet instability, and cost of data (Agormedah et al., 2020; Hussein et al., 2020). Using the connectivism learning model, this study explores the perspectives of undergraduate students in six selected public and private higher education institutions in Ghana about institutional adaptation to online learning in an era of COVID-19. This paper examines how connectivism is important to online learning as a theory that links previous information to current information, and integrates technology within the realm of knowing by guiding students to look beyond their own understanding to information.

Review of Literature

Research indicates that the current integration of information and communication technologies in instructional activities at the tertiary level in SSA, indicates increasing access in the higher education sector through online learning (Asunka, 2008). Before the onset of COVID-19, technology-enabled instruction had been recognized as the

economical means of increasing access to higher education in SSA. However, it is acknowledged that as a result of challenges such as unstable and unreliable internet connectivity in the higher education sector the use of technology in most higher education institutions in Sub-Saharan Africa had been minimal (Gakio, 2006). In a study by Agormedah et al. (2020) about the learning experiences of college students, the outcome of the study indicated that participants described technology usage to include WhatsApp, Telegram, Zoom, Google Meet and Google Classroom. Participants also indicated that lecture notes were sent as PowerPoint slides, portable document format (pdf) or as Word documents to their email addresses. They also noted the high cost of internet data. The authors' findings corroborated with the results of Owusu-Fordjour et al. (2020) and Entsie (2020) in Ghana, who found that most students accessing e-learning platforms due to the closure of educational institutions complained of the high cost of internet data and disruption of academic activities by household chores. The findings on college students' overall perceptions of online learning revealed that the majority of college students wished online learning would be suspended due to its associated challenges such as device inequality among students, poor internet connectivity and high cost of internet data. This study further suggests that a better understanding of online learning experiences of college students may enable relevant stakeholders to put in place measures that would ensure a better online learning experience.

Forson and Vuopala (2019) sought to find out University of Cape Coast distance education students' readiness, capability to collaborate, as well as interact, in an online learning environment. The outcome of the study indicated that respondents were of the opinion that conditions were ripe for universities in Ghana, especially University of Cape Coast, to focus on online distance education models. Tagoe (2012) in his study on student perceptions on incorporating e-learning in teaching and learning at University of Ghana noted that its acceptance depended on three critical factors. These were computer ownership, prior experience and perception of students about e-learning. Invariably, those who did not have these acquired skills may address the shortfall through the university, friends, and family members, who may assist them with opportunities to acquire computer skills.

Research has been done on online learning in higher education (Asunka, 2008; Edumadze et al., 2019; Forson & Vuopala, 2019; Obeidat, 2020; Tagoe, 2012). While others have gauged the experiences of level 200 undergraduate students (Agormedah et al., 2020), this study is unique in that it examines the perspectives of all levels of undergraduate students about their learning engagement and experiences in both public and private higher education institutions using the connectivism learning model. The implementation of online learning initiatives in SSA has to be informed by in-depth empirical studies purposefully designed to unravel all the circumstantial factors that influence the efficacy of such learning activities. The main research question guiding this study is "What are the perspectives of undergraduate students about institutional adaptation to online learning during COVID-19?" The findings from this study will inform policy makers in the higher education sector among others about online teaching and learning as well as about what works best in the higher education sector.

Conceptual Framework

This paper draws on the connectivism learning theory to formulate the conceptual framework. Connectivism combines previous information with current information to create novel meanings. Thus, in online learning students may be able to indicate a link between, for example, the use of technology to an earlier knowledge about computing and ability to connect them during the new phase of engagement using technology. Undergraduate students may find linkages between the social media handles that they use such as WhatsApp, and other Google apps including Google Meet and Google Classroom and the online technology aimed at learning during COVID-19.

Connectivism learning theory has been associated with the work of Downes (2005) and Siemens (2004). It was mainly developed to address the impact on teaching and learning by new technologies (Siemens, 2004). The new technologies of the digital age such as 'blogs' and 'wikis' have influenced learning engagement in higher education institutions globally. Further, the digital age has caused a massive growth in knowledge that has a brief shelf life and is measured in a shorter duration period of months or a shorter span of years as opposed to previous eras when knowledge could remain relevant for centuries. As a result, students now have to quickly adapt to the hybrid approach in their quest to learn. Similarly, faculty members will have to adapt hybrid methods in their engagement with students. More so, with the onset of the COVID-19 pandemic, both faculty members and students have noted the need to adapt in their mutual engagements in order to make the most out of the situation. Knowledge acquisition has been linked to the theory of connectivism where an individual will not be able to work independently but rather acquire it through connections with others (Marhan, 2006). In a connectivism learning space, higher education students will learn efficiently within a network of connections as information is distributed. Thus, learning occurs when the student is able to construct and traverse these networks (Downes, 2007).

Through connectivism, learners use available technology to create networks such as students using WhatsApp platforms to access information from each other and keep abreast with faculty engagements. These networks have information sources that the student chooses and acts upon. Learning also occurs when peers collaboratively share opinions, viewpoints and critiques through conversation and dialogue on a mutual basis rather than the traditional teacher/learner relationship (Friesen & Lowe, 2011). With the connectivism learning model, students are able to learn both in class and out of class because of the usage of mobile digital technologists (Guder, 2010) such as the Telegram, WhatsApp and Twitter.

Methodology

This study employed an in-depth interview framework to address the research question. Data collection procedures employed were semi-structured interviews that were held in-person or by phone (Maxwell, 2005; Rubin & Rubin, 2005). The purpose of the study was to explore the perspectives of undergraduate students about institutional adaptation to online teaching and learning during the COVID-19 era.

Participants

Eighteen undergraduate students from six public and private higher education institutions were purposively recruited (Maxwell, 2005). These 18 students have indicated that they have had some form of online engagement in relation to teaching and learning during COVID-19. Before the interviews, approval for this study was received from the Institutional Review Board of the researcher's university. Participants were informed about the nature of the study and each was assigned a code to foster confidentiality among them. Data collection continued until sample saturation was reached at 18 participants where additional interviews did not bring up any new information (Strauss & Corbin, 1998).

Data Collection

Eighteen in-depth face-to-face or telephone interviews were conducted with participants in Ghana. The sample was purposively selected from six public and private higher education institutions. Specifically, three students from varied levels in their undergraduate programs were purposively selected from each institution. The interviews were personally conducted by the researcher and the risks and procedures for participating in the study were explained to the participants before the data collection started. After reading and signing consent forms, all participants were asked open-ended questions about their perspectives of the implementation of online learning during the COVID-19 pandemic in the selected higher education institutions. The interviewer also sought permission from the participants to audio record. Subsequently, the transcripts were transcribed verbatim and analyzed immediately. However, after the transcription of the first interview, the analysis informed the subsequent data collection (Glaser, 1992). Some of the major interview questions include the following: Before COVID-19, what online platform was your institution using? During the COVID-19 pandemic when higher education institutions (HEIs) were asked to transition online (in May 2020) what did your institution do in terms of online engagement? Were you using a Learning Management System such as SAKAI, Blackboard, Google Meet and Zoom? Further, participants were asked clarifying questions based on the responses given. The duration of each interview ranged between 30 to 40 minutes and at the end of each interview, participants were given the opportunity to express their views on any related issue that was not addressed.

Data Analysis

Data analysis included transcription of interviews, preparing memos, coding data, and summaries (Maxwell, 2005; Rubin & Rubin, 2005). Each interview was transcribed verbatim and subsequently coded. This study applied content analysis of the primary data in addition to using both the inductive and deductive approaches. According to Lauri and Kyngas (2005) the inductive approach is used when previous research is minimal or non-existent. On the other hand the deductive method is applied when a theory is to be tested and analysis is based on previous knowledge (Boyartis, 1998; Kyngas & Vanhanen, 1999).

The researcher examined themes that emerged from the interviews both deductively and inductively, and further looked for linkages and patterns among themes. The coding was done manually by reading through the interview transcripts several times to look for repeating ideas that were relevant to the research questions. Each interview transcript was read at least three times to acquaint the researcher with the themes that would emerge from the coding process. The first level of the coding process began with open coding which enabled the researcher to accurately determine which thematic category to apply to the transcripts. The codes were applied to sentences/statements in the interview transcripts and themes were generated from repeating ideas (Auerbach & Silverstein, 2003). A second coder also reviewed the data and identified major categories and themes which helped to determine the accuracy of the identified categories and themes.

The researcher also addressed the issue of validity by being cognizant of threats. Maxwell (2005) defines validity as a “straightforward, common-sense way to refer to the correctness or credibility of a description, conclusion, explanation, interpretation, and other sort of account” (p. 106). Two threats to validity in research are noted as the bias of the researcher, and the impact on interviewees, known as “reactivity.” Thus, when the researcher affects what the participant says, that could impact validity (Maxwell, 2005). Notably, the researcher was cautious about “reactivity” in data obtained from participants.

Results

This section examined the themes generated from the data analyzed from the 18 participants. Eighteen undergraduate students were purposively sampled for this study. The resultant themes indicated differences in the implementation of online learning processes in the public and private higher education institutions, implementation of blended format, challenges encountered, benefits of online learning, and recommendation by participants. All the participants in this study at both the public and private higher education institutions agreed that they were all engaged online.

Differences in Implementation of Learning Engagement in Private and Public Higher Education Institutions

Data analyzed indicated that before the onset of COVID-19, the selected private higher education institutions had neither invested in infrastructure to enhance online learning nor deployed robust infrastructure. Thus, during pre-COVID-19, instructional activities at the selected private higher education institutions were mainly face-to-face and the online learning component was non-existent. Conversely, the selected public higher education institutions had some level of online engagement with students prior to COVID-19. With the coming of the COVID-19 pandemic, the selected private higher education institutions deployed the use of media tools such as Zoom, Google Meet, Google Classroom and WhatsApp, while the public higher education institutions escalated their online engagement with students. Notably, each private higher education institution was unique in its engagement of students when permitted to reopen.

A participant at a private institution that I will call BAY indicated the following:

After the lockdown was lifted in May 2020, we started using Zoom, Google Classroom and Google Meet for our online learning. The technology selected depended on the Lecturer. We also used Google Classroom to submit our assignments. But before COVID-19, the university was not using any of these technologies for teaching.

The above comment resonated with majority of the participants from private higher education institutions who affirmed similar tools for their online engagement.

A participant called JY from a private higher education institution indicated that though most students were new to the usage of some of these technologies for learning, they had “to quickly learn from their colleague students who were conversant with their usage.” The previous assertion also resonated with the other two selected private higher education institutions. This ties in with research conducted by Asunka (2008) indicating that during the pre-COVID era, SSA did not have the full complement of infrastructure to start online learning. Further, data analyzed indicated the public universities varied in their implementation of online learning though they had adequate infrastructure set-up.

Implementation of Blended Form

Data analyzed indicated that some of the private higher education institutions implemented the blended approach to student learning after educational institutions were allowed to re-open though there were some variations in the details. A participant known as AB reiterated the fact that her institution implemented both the online and face-to-face components of student engagement. She noted the following:

... level 100 and level 200 undergraduate students will attend a face-to-face component for a number of weeks and then switch over to the online mode for another number of weeks. Then levels 300 and 400 will also attend the face-to-face component for a number of weeks and then switch over to the online version.

With the mutation of the COVID-19 virus, especially as the Delta Variant was still active in the country, these measures have been taken out of an abundance of caution so that students and staff will abide by the protocols in place and be kept safe. A number of participants from private higher education institutions that did not have huge student numbers indicated that they continued with the face-to-face engagement while taking cognizance of all the COVID-19 safety precautions. Invariably, the public higher education institutions also varied in their implementation of the online learning and engagement of students. The public institutions used diverse methods. All three selected public higher education institutions for this study also engaged their students using technology such as Google Meet, Google Classroom and Zoom among others. Two out of the three public institutions selected, engaged the students with similar methods implemented by the private higher education institutions. These methods include a section of the undergraduate student populace having a face-to-face component while

another group of undergraduate students had the online version simultaneously. However, one of the public higher education institutions, according to data analyzed, was very unique in its implementation of online learning engagement with undergraduate students. This particular institution engaged students by implementing the online modular system of teaching and learning, with very limited face to face interaction for programs demanding that type of engagement due to the unpredictable nature of the COVID-19 virus. In this modular system, levels 100 and 400 undergraduate students are engaged online for six weeks after which a month's break was given. While the first group of undergraduate students are on vacation, levels 200 and 300 undergraduate students are then engaged for their six weeks' module.

Challenges Encountered

All the participants were unanimous in the varied challenges encountered and the type of problems that they had to address as a result of their involvement with online learning on their various campuses. A majority of the participants noted that the expensive cost of data was a major hindrance. Unanimously, a majority of the participants in both the public and private higher education institutions indicated difficulty in obtaining funds to buy data for their online engagement. Other challenges enumerated include "low online class attendance and participation" by participants since they did not feel obliged to do so. A participant with a private higher education institution indicated that he had health issues such as waist pain which emanated from sitting for long periods of time during online class sessions, as well as improper blood circulation. A unique challenge at a public higher education institution was elaborated on by a participant called JON as follows:

There was an instance where during an online class session, some participating students who were having sex at the time, had forgotten to switch off their video and the recording went viral on Twitter.

Benefits of Online Learning

Majority of participants were of the view that they have gained a lot from participating in online learning during this era of COVID-19. One participant with a public higher education institution noted: "Online learning has helped us a lot. If it has not been for this online engagement, a lot of us would have had the virus since my university was one of the first to record a positive case." Another participant called AMA further stated,

Online learning has also provided an opportunity for shy students to make contributions during class sessions. It has also helped us become more dynamic in the use of technology as we have had the opportunity to learn about technology usage from friends.

A participant from a private higher education institution indicated some benefits to include "sitting in the comfort of your home while having a class."

Recommendations By Participants

A number of recommendations were made by participants with some indicating that since online learning places a lot of responsibility on students, participants should hold themselves accountable in class. A participant who identified himself as a course representative for his class noted, “As a course representative (class rep), I have to call members of my class using my phone at my own expense anytime an online class is scheduled to remind them of the class. When I am unable to call some of them at certain times because I do not have call credit, they rather get upset.”

Other participants at public higher education institutions recommended a blend of online and face to face engagement during this period of COVID-19 instead of solely going fully online for some courses. In addition, since there are sometimes unstable WIFI on campus even for participants who go there to access stable internet, institutions should increase the robustness of their internet infrastructure to enable internet stability.

Discussion

The objective of this study was to explore undergraduate student’s perspectives about institutional adaptation to online learning during the COVID-19 pandemic. Results of this study suggest that both public and private higher education institutions used social media tools such as Google Meet, Google Class, Zoom, and WhatsApp among others as well as learning management systems to engage undergraduate students in teaching and learning which corroborates with research (Agormedah et al., 2020; Hussein et al., 2020). Based on the connectivism learning model, the results of the study indicated that undergraduate students who were not well versed in the usage of online media tools connected with their friends or course mates who had the know how to assist them (Downes, 2005; Siemens, 2004). Ultimately, the findings are consistent with existing research (Edumaze et al. 2019; Forson & Vuopala, 2019). Despite the challenges enumerated such as high cost of data and inappropriate behaviour of some students during online class sessions, participants lauded the benefits of online learning. These benefits include acquisition of technical skills in the application of social media tools, a benefit which otherwise would not have been acquired. The findings associated with technology usage are consistent with the connectivism learning model.

Limitation And Conclusion

One noted limitation of this study was that graduate students were not part of the study sample. Thus, a quantitative or a comparative study using graduate students as a sample could indicate whether the results from this undergraduate study could be confirmed by a different heterogenous sample size. In spite of the benefits accruing to undergraduate students who were engaged in online learning to ensure continuity of engagement, policy makers, and administrators of higher education institutions must ensure that relevant and robust infrastructures are put in place so that issues related to internet stability are resolved. Also, administrators could also consider subsidizing the cost of data so that students can easily take full advantage of online learning. Ultimately, there is a call for

the promulgation of a policy to standardize the delivery of online learning in higher education institutions in Ghana.

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