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Full Length Research

Undergraduate students' engagement level and challenges in online instruction in University of Port Harcourt

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ABSTRACT: This descriptive survey ascertained the engagement level and the challenges undergraduate students in the Faculty of Education, University of Port Harcourt, experienced when learning Computer in Education course via Google classroom. The sample size was 45 students purposively selected from the Department of Educational Management (Political Science group) with a population of 134 students. Two research questions guided the study. Google classroom records on students' posts and comments, and a questionnaire titled questionnaire on online learning challenges (QOLC) served as the instruments for data collection. Collected data were analyzed with a simple percentage and mean. The results indicated that the undergraduate students had a low engagement level during the online instruction and experienced challenges that included insufficient data subscription to access the online class regularly, poor electric power supply, network failure, inadequate instructional resources, among others. Some recommendations made were that instructors should constantly encourage and motivate students to attach value to their educational pursuits. Also, the university management should make adequate provisions for computer laboratory, free and stable internet access in and around the school environment.

Keywords: Challenges, Google classroom, motivation, online instruction, students' engagement.

INTRODUCTION

Mobile devices and social media have been sources of distractions for students in today's classroom (The Derek BOK Center for Teaching and Learning, 2021). Students seem to pay less attention to any classroom learning process whenever they are with their mobile devices in the classroom. Watching online videos and chatting with friends with their mobile devices seem to be of great importance to students than whatever a teacher is doing in the classroom. Since today's students attach so much to the Internet, teachers may need to migrate learning content to the online learning zone. Many universities are now utilizing the opportunities that online education provides to ensure that learners are not lagging in their studies in the face of any pandemic and unforeseen crisis, especially in this epoch of Information and Communication Technology (ICT). Since learners react differently to different learning situations due to their differences and value attachment, it becomes necessary to ascertain how engaged they may be in online learning activities, having been accustomed to studying in a traditional learning environment. This understanding will assist instructors to carefully design and utilize appropriate strategies to keep students motivated to participate actively in online learning when using online instruction to blend their conventional learning programme.

Engagement is the main rudiment that drives students' learning mainly in an online educational situation where students learn independently with virtually zero supervision from their instructors. Unlike in Face-to-Face (F2F) classroom situation where students meet physically with their classmates and teachers to interact, share knowledge, emotions, and problems, students in online instructional platform study mostly in isolation, with reduced human interactions. Also, in the F2F context, teachers can easily notice distracted students and direct their attention to the learning process. However, online

students always have the habits of postponing and abandoning their studies to other pressing needs. Engaging learning activities are, therefore, necessary to reduce students' boredom and keep them focused on online education. When an instructor engages students in online learning activities, they will contribute their ideas to discussions regularly, submit assignments or quizzes on or before due dates, complete an online course, and have excellent performance. Center for Instructional Technology and Training (CITT, 2018) established that engagement is positively related to high student perseverance, satisfaction, and performance.

Engagement refers to being actively involved in an activity or an act of showing a total sense of commitment to complete a task without distractions. Firestone (2018) defines learner engagement as a learner showing interest to participate in a particular work even in a difficult situation. Dixson (2015), on the other hand, saw learner engagement as the degree of learners' active participation in a learning situation through interacting, thinking, and discussing with the teacher and classmates. Learner engagement, according to the Center for Instructional Technology and Training (CITT) (2018), is the quality of time and strength a learner invests in a course. Although Firestone, Dixson, and CITT have different views on the meaning of learner engagement, however, each identified a particular measure of the concept. Learner engagement, thus, refers to a learner's capacity to persist in carrying out learning activities all through a course period.

Learner engagement is of different categories; these include cognitive, psychological, and emotional engagement (Blakey and Major, 2019; Fredricks et al., 2004 cited in Schindler et al., 2017; Talent LMS, 2018). Learners are cognitively engaged when they can devise different approaches to enhance reflection and a deeper understanding of the learning content. Cognitive engagement leads to increased performance. Emotional engagement is concerned with how students react toward their studies, teachers, and learning environment. Emotional engagement measures the type of interest, attitude, value, and feeling a student exhibits towards learning and people in a learning community (Fredericks et al., 2004 cited in Lester, 2013). Talent LMS also remarks that emotional engagement occurs as learners establish social connections with others in their learning community without the feeling of detachment and anxiety. Behavioral engagement deals with learners' active participation in the course and school-related activities (Lester, 2013). This form of engagement is observable through students' obedience to class rules, activeness during class interactions, discussions, and completing course activities. Talent LMS averred that engaging students at different levels require effective course design and appropriate learning content.

It is the responsibility of online instructional designers and instructors to create enabling online learning environments and content to engage students meaningfully in their learning processes. Before starting online instruction, instructors need to adequately plan, develop, and upload all course materials into a Learning Management System (LMS) such as Google classroom. The development of an online course is done in inter-related and weekly modules to achieve the course goal. Each module should have in-built learning content (in the form of case-study, video or audio files, PowerPoint slides, among others), activities (such as discussions and self-reflection reports), and assessments (such as graded assignments and quizzes) to achieve the module's objectives. There should be rubrics in an online course to guide students on what is required when completing assessments. Also, instructors need to give students tutorials on any chosen eLearning platform, indicating its features with their functions for easy navigation and communication.

At the onset of course delivery, it is an instructor's responsibility to welcome the students, direct them where to address technical issues, provide the course syllabus that reveals topics and learning outcomes, set rules for proper course usage, assign students into groups, and make the course visible for students to use. As the course delivery progresses, instructors must always support the students' learning, provide feedback during discussions, grade assignments, and manage the entire learning process.

Chickering and Garnson (1987), cited in Vai and Sosulski (2011), remarked that:

Learning is not a spectator sport. Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They must make what they are learning to be part of themselves. (p. 68).

Therefore, an engaging learning experience must promote learners' interest, connections, and interactions with the learning content, their classmates, and instructors. To achieve engaging learning experiences, Vai and Sosulski (2011) maintained that an online course should have a clear and attractive presentation, hands-on activities, be collaborative, reflective, meaningful, and authentic, and put learners' different learning styles into consideration. Based on the engagement theory established by Kearsley and Shneiderman in 1998, engagement occurs when learners relate and collaborate with others in a community of practice, utilize project-based techniques to create innovative ideas, and solve authentic problems to contribute meaningfully to society. Thus, using different social media and communication tools, providing interactive and concise content, making learning content attractive in a variety of formats, creating opportunities for learners to participate in authentic and worthwhile tasks in an online course, and providing regular feedback could

help increase learners' online learning engagement level.

To adequately engage students for optimal online learning experiences, it might also be necessary to help them overcome some challenges they may face when studying online. Some of these identified challenges include self-motivation, the problem of internet connection, untimely feedback, technology incompetency (Strayer University, 2020; Purdue University Global, 2019; Kumar, 2015). Artino (2007), cited in Russell (2013), posits that even though online education encourages learners' autonomy and flexibility in decision-making, these benefits can bring difficulties to learners who have poor motivation for learning. Heather et al. (2017) studied how engagement in MOOC is affected by learners' experience and discovered that insufficient time, poor background, experience from a prior awful classroom, lack of Internet access, money, and infrastructure were barriers to learners in an online classroom. Also, most online students usually have isolation problems and difficulty establishing physical contact and interactions with classmates and instructors (Strayer University, 2020). Kumar (2015) remarked that students who have been studying solely through the conventional method usually have difficulty adapting to a different learning platform, like an online class, and thereby become resolute to change. Abdulmajeed et al. (2020) reported that the hindrances to the Nigerian online learning system are Information Technology (IT) infrastructural, sociocultural, and socioeconomically based. Kumar further noted that poor Internet connection, computer illiteracy, inadequate time management, and low self-motivation are students' constraints to online learning. Thus, if all online educational stakeholders do not address these challenges adequately, they may adversely affect the rate at which students engage in learning activities.

To measure the rate of students' engagement in online instruction, Denny (2016) suggested using strategies such as; the rate at which students complete an online course, learner's login frequencies into an online learning platform, learner's ability to explore other resources, and cite such when completing any assignment, and the ability to create content and ask questions regularly. Vai and Sosulski (2011) noted that participating and contributing regularly during class discussions bring about online learning engagement, which can be ascertained by having each learner post for a minimum of two or three times every week. Through learning management and tracking abilities of almost all online learning platforms, instructors can adequately monitor students' engagement levels in online courses.

There are few studies on students' online engagement. Pazzaglia et al. (2016) found out that 77 percent of students had a steady engagement rate of 1.5 to 2.5 hours every week; those with 2 hours or more hours of engagement outperformed those with lesser engagement hours per week; in their study to investigate if student's engagement patterns relate to learning outcomes in an online course at a virtual school in Wisconsin after 2014 fall semester. Also, Bigatel and Williams (2015) surveyed how engaged students were in an online course in Penn State and found that most students who showed a high engagement level in the online programme were those whose instructors were experts in supporting students' engagement. Asoro and Osunade (2020) examined the Nigerian students' attitude in learning online during the COVID-19 period and reported that Nigerian higher institution students were engaged in online learning for self-development before the Covid-19 period. Olasunkanmi (2020) investigated the Nigerian Anchor University students' attitude towards online education at the beginning of the Covid-19 lockdown. Olasunkanmi observed that students disliked e-learning due to the challenges such as unstable Internet networks and power supply, high data subscription, and environmental distractions. Also, Ajegbelen (2017) investigated to ascertain the Edo state public secondary schools' obstacles to eLearning and found out that unstable power supply, low technical skills among teachers, and shortage of eLearning facilities led to a gap in the eLearning implementation. Olayemi et al. (2021) examined how Nigerian students perceive and were ready for online education during the Covid-19 outbreak. Their results showed that the students were familiar with online education and prepared for it; however, they perceived unstable electricity and Internet service, high data subscription rate, poor access to digital facilities, and e-library resources as their obstacles to learning online.

Observations showed that online instruction was uncommon in the Nigerian education system before the Covid-19 pandemic; however, the disease outbreak has revealed the need for online instruction and forced most Nigerian universities to start adopting the online instructional model to complement the conventional instructions. There is no record of students' engagement level in online instruction at the University of Port Harcourt, to the best of the researchers' knowledge. This gap led the researcher to find out if students are taught Computer in Education course in Google classroom, whether they will be engaged in their learning activities as much as they would engage in other online and social activities, and whether there will be any challenge that may hamper their level of engagement in their online learning activities. Therefore, the two research questions in this study were:

1. What is the students' level of engagement in online instruction in the Faculty of Education at the University of Port Harcourt?
2. What challenges did students encounter when learning with the online instruction in the Faculty of Education at the University of Port Harcourt?

METHODOLOGY

Research design

The research design used in this study was a descriptive

survey design.

Population and study setting

The study used 134 undergraduate students in the Department of Educational Management in the Faculty of Education at the University of Port Harcourt.

sample and sampling technique

The sample size was 45 students selected through a purposive sampling technique since they had laptops and android/smartphones that enabled their participation in online instruction on the Computer in Education course in Google classroom.

Data collection/ gathering tools

The records of the posts and comments the students made per week in the Google classroom served as the instrument for collecting data on the students' engagement level in the online instruction. 0-1 comment and 2-and-above comments are the number of comments students made per week during the online instruction in Google classroom. 0-1 comment signifies that the students made either no comment or one comment, while 2-and-above comments signify that the students made either two or more comments in each week of the online instruction. The researchers also constructed a questionnaire called questionnaire on online learning challenges (QOLC), and used it to collect students' responses on the challenges they encountered while learning through online instruction. QOLC had a four rating scale and weighting formats of Strongly Agreed (SA = 4), Agreed (A = 3), Disagreed (D = 2), and Strongly Disagreed (SD = 1) with a midpoint of 2.5, which served as the criterion point. QOLC underwent validity testing through the face and content validities and reliability testing using the Cronbach Alpha method, which yielded an alpha coefficient of 0.72.

Data collection approach

The researchers designed the online instruction to run for five weeks. The researchers used the first week to get the students familiarized with the features of the Google classroom by giving them tutorials on Google classroom usage and joining code to join the online classroom. The students also used the first week to access the course syllabus and schedules, meet their classmates and facilitators, and share their course expectations with their classmates. In each of the remaining weeks, the researchers exposed the students to learning four topics (developed into video lessons and PDF materials) in the Computer in Education course in the Google classroom and requested them to share their learning experiences, comment on the discussion questions, and do assignments and quizzes based on the weekly topic. The researchers provided regular feedback to students questions and graded their assignments. At the course expiration, data were collated and subjected to analyses using a simple percentage and mean for research questions one and two, respectively.

Data analysis procedure

Simple percentages, mean and standard deviation helped to answer the research questions. 2-and-above comments with 50 percent and above signify a high engagement level, 0 – 1 comment with 50 percent and above represent a low engagement level, and vice versa. The mean value of 2.5 and above signifies agreement with the item statements in research question 2, and the mean value below 2.5 implies disagreement.

RESULTS

Research question 1: *What is the students' level of engagement in online instruction at the University of Port Harcourt?* Table 1 shows that 55.54 percent of students made a 0-1 comment while 44.46 percent of students made 2-and-above comments throughout the five (5) weeks of the online instruction in the Computer in Education course. It then signifies that the students had a low engagement level in the online instruction in the Faculty of Education at the University of Port Harcourt since the percentage of students who made 2-and-above comments is lower than those who made a 0-1 comment.

Research question 2: *What challenges did students encounter when learning with the online instruction at the University of Port Harcourt?* Table 2 reveals that the undergraduate students agreed to the items statements 1, 2, 3, 5, and 6 since their mean values of 2.80, 2.73, 2.69, 2.56, and 2.51 exceed the criterion point of 2.50. However, they disagreed with item statements numbers 4, 7, 8, and 9 since their mean values of 2.09, 2.24, 1.80, and 1.73 are lower than the 2.50 criterion point. The agreed statements reveal the challenges students encountered while learning with the online instruction at the University of Port Harcourt.

DISCUSSION

The result in Table 1 portrays that the students had a low engagement level in the online instruction in the Computer in Education course in the Faculty of Education at the

Table 1. Percentage analysis of students who made comments per week in the online instruction.

Number of weeks	0-1 comment	2 comments and above
Week 1	(36) 80	(9) 20
Week 2	(17) 37.8	(28) 62.2
Week 3	(22) 48.8	(23) 51.2
Week 4	(24) 53.3	(21) 46.7
Week 5	(26) 57.8	(19) 42.2
Average	55.54	44.46

Note: the numbers in brackets in table 1 indicate the number of students who made comments per week in the online instruction, while the numbers outside the bracket indicate the percentage response.

Table 2. Mean analysis of the challenges students encountered when learning with online instruction at the University of Port Harcourt.

No	Items	SA	A	D	SD	n	Mean	Std. Dev	Decision
1	Insufficient data subscription to access the online class regularly	14	14	12	5	45	2.80	1.01	Agreed
2	A power failure that brings about low battery	11	16	13	5	45	2.73	0.96	Agreed
3	Network failure	8	20	12	5	45	2.69	0.90	Agreed
4	Inability to post assignments	1	13	20	11	45	2.09	0.79	Disagreed
5	Inadequate instructional resources (computers, labs, among others) for effective teaching and learning of this course	5	20	15	5	45	2.56	0.84	Agreed
6	Inability to access all the video lessons in the course	7	17	13	8	45	2.51	0.97	Agreed
7	The insufficient time frame for the online class	5	11	19	10	45	2.24	0.93	Disagreed
8	Inability to understand some concepts		7	22	16	45	1.80	0.69	Disagreed
9	Difficulty understanding all the features of the Google classroom		4	25	16	45	1.73	0.62	Disagreed
	Average							2.35	

University of Port Harcourt. This result indicates that these students had some challenges while studying online, which affected their engagement level in online instruction. The finding of Pazzaglia et al. (2016) that 77 percent of students had a steady engagement rate of 1.5 to 2.5 hours every week contrasts the present result; although Pazzaglia et al measured students' engagement in an online course using the number of hours, while this study used numbers of comments the students made in the online instruction. Asoro and Osunade's (2020) findings that Nigerian higher institution students were engaged in online learning for self-development before the Covid-19 period disagrees with the present result.

Table 2 confirmed that the challenges the undergraduate students encountered when learning with the online instruction in the Computer in Education course were: insufficient data subscription to access the online class regularly, a constant power failure that brings about low battery, network failure, inadequate instructional resources (computers, labs, among others) for effective teaching and learning of the course, and the inability to access all the videos in the online course. These challenges are not surprising because they are common in underdeveloped countries and higher institutions where technology integration is still at the awareness level and has not been adopted fully for instructional delivery. This result corresponds to that of Heather et al. (2017) that reported that the challenges of online learning include inadequate time, poor background, lack of Internet access, money, and infrastructure. The present result also agrees with Olasunkanmi (2020), Ajegbelen (2017), and Olayemi et al. (2021) findings.

Conclusion/Recommendation

This study's results proved that the undergraduate students who studied the Computer in Education course in the Faculty of Education at the University of Port Harcourt through online instruction attached less value in their online learning activities and allowed the challenges they encountered to hinder their active participation in the

online instruction. That implies that the students were less engaged in online learning activities as they would engage in online social and entertainment activities. Thus, pure online instruction is not very effective in increasing students' engagement level in the learning process due to the challenges inherent in using technology alone for instructional delivery. Based on the findings, it is therefore recommended that:

1. Instructors should constantly encourage and motivate students to attach much value to their educational pursuits.
2. The university management should make adequate provisions for computer laboratory, free and steady Internet access in and around the school environment.
3. The government should fund the Nigerian university system and provide a steady electric power supply for effective online instruction.
4. There should be further research to ascertain students' engagement level in a blended instruction in Computer in Education course at the University of Port Harcourt.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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