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Emergency Online Teaching and Learning in a Nigerian Private University: An Activity Theory Perspective

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Abstract

The purpose of this study is to investigate the challenges of emergency online teaching and learning adopted in a Nigerian private university due to the suspension of face-to-face learning, as a result of the COVID-19 pandemic. Activity theory was used to examine the elements that make up the activity, that is, the virtual learning environment, as well as their associated relationships in order to reveal existing and potential tensions within the activity. Data used for the analysis of this case study was obtained by observation of the online class sessions, student responses to an online survey, emails (requesting support) received by the instructional technology support team, and interviews with participants of the activity system. The findings show that majority of the challenges and contradictions observed were a result of a hurried decision to migrate to online learning in order to complete the academic semester. This brought about several issues with regards to the tools, rules, and roles within the activity system. The most significant contradiction observed was as a result of the influence of an external activity on the studied activity system. The study provides insights to policymakers in the education sector on the current barriers to online learning, especially in the Nigerian context.

Keywords: Activity theory, Contradictions, Online learning, Zoom, Higher education, Nigeria

1.0 INTRODUCTION

With the advent of the COVID-19 pandemic in early 2020, almost all organizations worldwide were forced to either shut down or change their operations and processes with the exception of providers of essential services. An important sector affected by the shutdown is the education sector. Schools have had to change their operations as a result of the COVID-19 pandemic. Education across all levels of the schooling systems was directed to close their doors to students in almost every country in the world by their respective governments. This resulted in an immediate change in the culture of traditional education, especially in many of the developed countries (Dwivedi et al., 2020). Face-to-face teaching was replaced with a variety of teaching methods. Many institutions resorted to using applications such as Zoom to facilitate online classes (Mishra et al., 2020).

Adedoyin & Soykan (2020) suggests that the digital transformation of teaching and learning are faced with several challenges. This is especially true in developing countries like Nigeria where issues such as lack of computers, low Internet bandwidth,

and low ICT-competence can be observed among the educational stakeholders. Educational institutions, specifically in Nigeria, do not offer online learning programs, see (Lawal et al., 2020). This is bound to result in issues when Nigerian higher educational institutions do decide to embrace eLearning. Hodges et al. (2020) stated that these issues are more obvious in situations where the shift in activities is sudden with not enough time to plan for the accompanying changes. Gedera & Williams (2013, p.33) refer to these issues as "conflicts, contradictions, miscommunication, and misunderstanding in learning systems that can affect students' participation in e-learning activities".

There is a dearth of studies that have looked into the challenges of emergency online teaching and learning in developing countries and this research aims to fill that gap. To understand the challenges/conflicts observed in an online teaching and learning activity as a result of the COVID-19 pandemic, the Activity Theory framework is applied as a theoretical lens in the context of a Nigerian private university.

1.1 Research Context

This study focuses on a private university in northern Nigeria. With the advent of the COVID-19 pandemic, the Federal Government of Nigeria (FGN) instructed that all schools, and at all levels, should close by the 26th of March 2020 (Adedigba, 2020). The implication of this directive by the FGN was that there were 6 weeks of classes remaining for the semester to be completed. The announcement was made on the 19th of March 2020 and this prompted a high-level meeting by the senior administration of the university on how to proceed with the remainder of the semester. The decision was made for classes to continue via the use of an online tool (Zoom Meetings and Chat Application) to simulate real-time classes.

A 2-day intensive training was conducted for all instructors of the university. The training was to help familiarize the instructors with the Zoom environment and how to use the Zoom application to teach online. For the majority of the instructors, this was the first time using the online method to deliver lectures, so the training included practical sessions. With regards to pedagogy, there was no mention or training relating to a change in pedagogy. The instructors were expected to adapt their current teaching practices to the online mode and use 40-minutes sessions to make up the usual 90 minutes session.

A first-year general education class that was made up of 4 sections (each with approximately 25 students) were identified for the purpose of this study. A different instructor taught each section, thus there were 4 instructors, as well as, all their students as participants of this study.

Zoom was used to deliver the online class during the 6-week period left to complete the semester. All observed interaction was done during this period; while the instructors were within the school premises for the delivery of the classes, the students were at home (i.e. not on campus) within the 36 states of Nigeria and possibly outside of Nigeria.

2.0 LITERATURE REVIEW

2.1 Theoretical Foundation

Drawing from the works of Vygotsky (1978) and other soviet researchers such as Leont'ev (1978) and Ilyenkov (1977), Activity Theory (AT), (aka Cultural-Historical Activity Theory) is a descriptive theory that is deeply rooted in Russian cultural and historical psychology. Engeström (1987) further developed AT into a social theory that focuses on work and its associated social activities. Thus, AT has evolved over time, but can mainly be grouped into 3 generations. In the first-generation, activity theory focuses on an individual activity and identifies 3 elements of an activity namely: the subject, the object, and the instrument (mediating tools) (Vygotsky 1978). The second-generation activity theory focuses on a collective activity and adds the elements: community, rules, community, and division of labor to the first-generation model (Leont'ev 1978). The third-generation activity theory combines several interacting activity systems (i.e., multiple second-generation activity systems) to explore multifaceted social activities (Engeström 1987). In this study, we adopt the second-generation activity theory to aid in understanding the challenges/conflicts observed in a singular activity (i.e., online teaching and learning activity).

In recent times, AT has been used to explain a wide variety of phenomena in fields such as education (Baguma et al., 2019; Lin et al., 2019), healthcare (Valecha et al., 2019; Woll & Bratteteig, 2018), information systems (Simeonova, 2018; Hasan, Smith, & Finnegan, 2017) and business management (Beckett & Dalrymple, 2017). According

to Karanasios et al. (2018), AT is a universal theory that appreciates change and development in work and social activities.

AT offers a complete framework that gives scholars a meaningful insight into what the actors do in an activity that will produce changes that potentially have the ability to improve the processes or outcomes of the activity.

Activities are the basic units of analysis in AT (Ngoma & Igira, 2015) and the elements of activities include the subjects, objects, tools used, the community, rules, and division of labor (Engestrom, 1987; Kuutti, 1996). These elements operate within the activities as follows and shown in figure 1: activities focus on an outcome (**object**), which could be physical materials or mental abilities. The need to accomplish the object is determined by an individual or a group of individuals (**subject**) using certain **tools/instruments** (technology, machinery, training, or even people) to accomplish the object. The subject functions within a set of **rules** which is established by the community who are also responsible for organizing how each individual is assigned work (**division of labor**) to achieve the activity goals (outcomes). Therefore, all the elements within the activity are interrelated and are influenced by social, cultural, and historical factors such as individual background, experience, resource availability, and other factors. Also, an activity is affected by neighboring activities that may have their own unique elements that make activities to be intricate and dynamic in nature.

An important concept in the context of AT is that of “contradictions”. Contradictions appear as disorders that are visible manifestations of the contradictions (Capper & Williams, 2004). Contradictions in AT are not strains, inconsistencies, or conflicts within an activity, instead, they are chronologically accumulating strains within and between activity systems (Engeström, 2001). The resolution of contradictions results in the development and change of an activity; therefore, it is an important concept of AT. Engeström proposes 4 levels of contradictions as listed below:

- Primary contradictions: These are observed within the elements or nodes of an activity, i.e. subject, object, instruments, community, rules, and division of labor.
- Secondary contradictions: These are observed between the elements or nodes of an activity.
- Tertiary contradictions: The tertiary contradictions are a result of the effect of a culturally more advanced activity, which introduces an alternative outcome that supersedes the central activity.

- Quaternary contradictions: These are observed among differing activity systems where the component of the main activity is in conflict with the components of other activities.

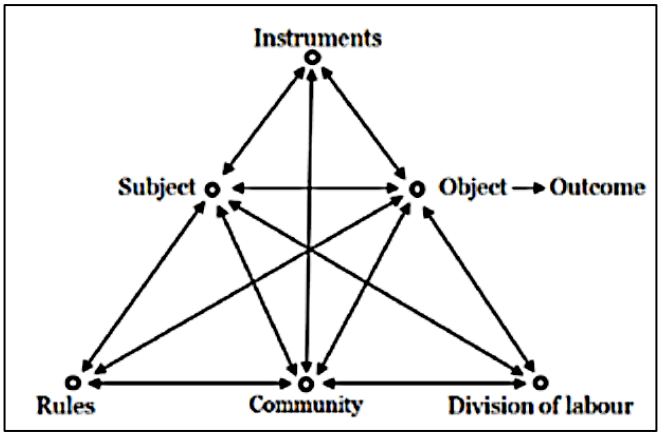

Figure 1. Activity Theory framework (Engestrom, 1987)

Contradictions can be obtained from analyzing empirical data and they are identified in the form of problems and complications within the activity.

In this regard, AT is useful in answering questions regarding how ICT has assisted changes at the activity level, especially in developing countries (Karanasios, 2014) and for understanding the human relationship with technology (Kaptelinin & Nardi, 2018). From an information systems perspective, Karanasios et al. (2018) stated that the tedious task of examining the interaction between actors in an activity system and the technology that they use can be easily addressed using AT. Also, AT is particularly useful for case study research methodologies as it helps to understand and analyze phenomena. AT does this by identifying patterns in an activity and making inferences between the relationships that exist between the components of an activity.

2.2 Activity Theory and Online Learning

AT has also been used identified as a suitable framework, by several authors, to examine the use of technology for teaching and learning (Basharina, 2007; Gedera & Williams, 2013; Park. & Jo, 2017). For these reasons, AT is ideally suited to explain the phenomenon under investigation. For example, Kaatrakoski et al. (2017) examined how educators engaged with open educational resources (OER) and how they conceptualized their learning. Their study identified 3 distinct contradictions 1)

between the needs of the teachers and organizational policies, 2) between responsibility transfer from educators to students and institutional accountability, and 3) between the learning objectives and cost-efficiency.

In another study, participant experiences were analyzed to identify existing contradictions by participants of two online conferences. (Carr & Ludvigsen, 2017). The contradictions included the times allocated to the conference clashing with their personal responsibilities, bandwidth issues, and familiarity with online learning and the rules conceived by the conference organizers being similar to those of a conventional conference.

Goodnough (2018), using AT's principle of contradictions investigated instructors who participated in a professional development program aimed at improving their own teaching practice, and identified as one of the contradictions the lack of tools/knowledge of using the tools. The teachers also identified the lack of time to plan and exchange ideas with regards to their teaching practice.

In an attempt to establish the extent to which students studying in an online learning context operated the provided mediation tools, Pullenayegem et al. (2020) observed that all the contradictions were between the tool and the subjects where the participants experienced difficulties in using the tools even with prior training on their use. Also, a contributory factor that affected the use of the tools was time constraints.

With regards to emergency online teaching and learning, there a few studies were identified that attempted to examine the responses and experiences of students and instructors especially due to the COVID-19 pandemic (Hodges et al., 2020; Zhang et al., 2020; Jeffery et al., 2020). But these studies were limited in their findings for the lack of use of an appropriate framework to uncover some of the underlying issues. For example, these studies did not consider the effect of external factors on the teaching process, instead, the focus was solely on the activities.

To address this gap, this case study aims to identify the challenges of emergency online teaching and learning activities through the lens of Activity Theory and its assumptions of contradictions.

3.0 METHODOLOGY

Approval was sought from the university's institutional review board (IRB) to allow the researcher to collect data for the purpose of this study. Permission was granted based

on the agreement that no identifying information of the participants would be used in the research.

This research employed a qualitative case study approach and data was collected over a period of 8 weeks. The qualitative case study approach was selected as it provides an in-depth, multi-faceted investigation of complex problems in a real-life setting. Several methods were employed to collect the required data, the first method was obtained from the emails sent to the instructional technology support (ITS) team requesting assistance on the use of the Zoom tool by the participants. These requests identified challenges in using the application, the acquired data were analyzed using thematic analysis technique to identify observed patterns. The second method was via online observations of the classes. For each of the 4 sections, 3 sessions were observed by the researcher, therefore a total of 12 sessions were observed. Each class session lasted approximately 40 minutes. For each class session, the observations were carried out at the beginning, in the middle, and towards the end of the 6-week period required to complete the semester. The observations were to study the behaviors of the participants in their natural setting and it involved the researcher documenting any identified issues with the online classes.

An online survey was also sent via email to the participants (students and instructors). The survey was a simple open-ended question to enquire about the participants' perspective on some of the challenges faced while using the Zoom application. A total of 35 responses were received from the students and 3 responses from the instructors. Again, thematic analysis was used to identify patterns in the responses. Finally, interviews were conducted with the Department of Academic Planning and Quality Assurance (DAPQA) staff to further elaborate on the newly adopted teaching and learning experience. A semi structured interview with 3 members of the DAPQA team was used to understand the quality assurance aspects related to the activity as well as the implications of the activity in relation to the various stake holders such as program accrediting bodies.

The emails sent to the ITS team, as well as the survey responses were reviewed and analyzed (thematic analysis) by the researcher, who is also part of the ITS team. Online observations were done at random by the researcher participating in the Zoom sessions as an observer only to collect data, thus playing the role of an observer-as-participant (Bryman, 2016). The interviews with all the participants were recorded, transcribed, and analyzed.

The observations from the analyzed data were organized based on the Activity Theory framework to identify the elements of the activity system as well as the challenges and contradictions within and between the elements of the activity. For each element of the AT model, meaningful insights from the responses were identified and grouped into themes. The following section discusses the findings based on the analysis of the acquired data.

4.0 FINDINGS

This study revealed several challenges and contradictions within and between the nodes of the online learning activity system. These contradictions included issues mainly related to the use of the zoom application and Internet bandwidth (tools). The sub-sections below discuss the various elements of the activity system and their associated challenges and contradictions.

Table 1 shows the elements of the teaching and learning activity system

Table 1: Elements of the Teaching and learning activity system

Activity Element	Element Description	Online Teaching and Learning
Participants	Participants of the activities are the actors that accomplish an objective via the usage of tools.	1) Students 2) Instructors
Tools	In the context of this study, the tools are the applications and devices that mediate the objective of the activity. The tools aid in the conversion of an objective into an outcome.	Zoom Application for online meetings, Internet access, Mobile devices (phones, tablets, laptops, and personal computers) and learning management system.
Objective	This is the reason an activity is created or exists. Objectives characterize sub activities in the activity	Online delivery of lectures using the Zoom tool by the instructors and students using

	system and are eventually converted into outcomes.	the same tool to learn from their instructors.
Rules	The rules are the expectations and norms that regulate or influence the interactions within the activity system. These rules can either specific or implied.	Attendance and participation of online sessions based on the Institutional regulations. E.g. a student must attend a minimum of 75% of classes to be eligible to sit the final examinations for each course, etc.
Community	The community includes the co-participants of the activity besides the participants and they all share the same objective of an activity. This element highlights the shared nature of the activity.	1) The University Administration 2) The instructional technology support team 3) Department of Quality Assurance and Academic Planning
Roles	Roles are the responsibilities and tasks assigned to the participants and the community of the activity system.	1) Students participating in the online class sessions to learn 2) Instructors simulating real-time classes 3) Instructional technology support team to support 4) Quality Assurance Unit for course evaluation
Outcomes	The outcome of the transformed activity (i.e., online teaching and learning) is to complete the remainder of the semester through online delivery of lectures using the Zoom tool. Therefore, the objective is	Students acquisition of knowledge during the enforced COVID-19 pandemic lockdown during the academic session.

	transformed into the outcome through intervention of the tool.	

4.1 Challenges in the Activity System

Internet Costs and Bandwidth

The students complained about the connection to the application. Students complained about the audio and video quality, both of which are required to simulate their traditional mode of learning. The narrations below, from students, are excerpts of comments made with regards to the internet connection:

> *"The video quality was poor both on phone and on pc, I also thought the audio quality was poor. It also had more network and connection issues than other online learning applications I had used at the time. We in the class advised our teacher to use Google hangouts instead cause we all didn't like the experience,"*
>
> *Student #1*

> *"Using the application online was a strenuous task thanks to the unending poor connection which was never addressed by lecturers as they went on teaching, oblivious to the fact that students had unsteady connections that logged them in and out of the class."*
>
> *Student #2*

> *"Another issues and I may say the most common problem about online cases on ZOOM is how we lack strong internet connectivity. Many at times, during a class my network will start fluctuating and at the end, sign me out the class. This also happened at times with my instructors and in the process, slows both teaching and learning."*
>
> *Student #3*

Another issue raised with regards to Internet access was the cost of connection as captured by a student below:

"However, it was expensive to use. The software consumed data, making my parent pay up to five thousand naira for almost every two weeks."

Student #4

During a normal school term, the students pay a technology fee that covers access to the internet, the use of public computers, and library resources. The cost stated by "*student 4*" is very high as this would mean that they spent approximately 15,000 naira for the remaining 6 weeks. This is a very high percentage of the technology fee especially considering that the period in contention (6 weeks) is a fraction of the total semester. Therefore, using full online learning for a full semester, the student would expect to pay approximately 37,500 naira just on internet access for online classes. This cost exceeds the technology fee charged per semester.

Screen Size

Another observation during one of the sessions was related to students complaining that they could not see part of the screen being shared by the instructor. This was possibly due to the screen size of the devices being used by the students.

"While using my phone, I noticed that I couldn't see some sections presented by the professor and I could not inform him as he muted the entire class so I missed the information he was sharing."

Student #9

Familiarity with the Zoom Application

A few issues were raised by both instructors and students with regard to the use of the Zoom application. An email sent by one instructor where he raised the issue of security vulnerability of the Zoom application. This mail was in response to several online sources that claimed that there were security vulnerabilities while using the application that can result in sessions being hijacked by online hackers. While no such case was observed in this context, it did have an effect on the perception of at least one instructor as captured below:

“With the documented vulnerabilities in using Zoom, is there anything I can do to improve the security during my classes, or can I use skype or some other application to conduct my lectures”

Instructor #1

Students and instructors both struggled with getting used to the application. Students complained about the initial setting up of the environment on their devices. Those with multiple devices felt that the initial setup was different for each device:

“Also, they were certain lectures that required the app be downloaded before entry into a class (not a requirement specific of instructors but clearly a malfunction of the app) which posed a problem because I was used to accessing the app online which worked for me. Downloading the app on my laptop was a challenge and so I downloaded it on my tablet.”

Student #5

Instructors also faced numerous challenges with using Zoom. Even with the emergency training sessions for the instructors, the instructional technology support team received several requests for support, a few are highlighted below:

“Do I have control over the use of the private messages? I would like to prevent my students from messaging each other and to be able to view their messages.”

Instructor #1

“My students are due to present their group projects. How can I use the zoom software to see their presentations?”

Instructor #2

“Can I use the same link to invite students for all my classes instead of creating a new one for every class session?” Insttuctor#3

“I have one of my classes scheduled for 10am today and I would like the class to last more than 40 minutes.”

Instructor #3

Based on the researcher's observations, 3 out of the 4 instructors improved with experience and time in using the zoom application, while the fourth instructor "*struggled*" till the end of the semester, this was noted by a student as shown below:

> *"It will shock you to know that one of my instructors still struggled till the last day of class."*
>
> *Student #6*

Basic functions such as "muting all" participants to ensure that he remains the focus of the class was a challenge to the instructor and this presented a frustrating experience for the learners.

Another observation was that once classes have started, late students who tried to join waited for a while before joining the class. The instructors often missed the notification that a student was waiting to join the class as noted below:

> *"Another problem I faced with using zoom was waiting for the instructor to let me join the class once when I was late. I spent almost 20 minutes waiting and I had to log out and log in again."*
>
> *Student #7*

4.2 Primary Contradictions

Contradictions in the roles

Administrative Management

With a change in the tools or an activity system, an associated change in the roles of the participants is expected otherwise resulting in contradictions. There were challenges observed in the context of administrative management of the online class sessions. As mentioned earlier, a student complained of being in the waiting room for a considerable amount of time before eventually being allowed to join the class. This was probably because the instructor's attention was focused on other aspects of the tool at the time. Another example of the challenges of administration was the taking of attendance. This was tedious as the instructor had to wait for students to unmute their microphones and

answer. For a class with over 20 students, the task was frustrating for both participants. A tutor/administrator was required to manage issues such as late students' access to the online class, behavior monitoring, etc. Especially considering that these activities will consume the already limited time for the online sessions.

Contradictions within the rules

Student Behavior

With the introduction of a tool to an activity system, the rules need to be revised to cater for the proper use of the tool to ensure that the objectives are met. In this case study, there were no guidelines introduced to the participants based on the use of Zoom for teaching and learning. An example of a conflict that resulted from the lack of an updated policy/rule was seen during one of the online sessions where a student appeared indecently dressed. The student did not wear a shirt and when addressed by the instructor the students' response was that he was hot and there was no light in his area. This also caused some disruption to the class with the instructor threatening to either end the session or kick the student out of the session. This issue results from a failure on changing the rules, that stem from the institutional regulations, that apply to the participants' attendance of classes where it is expected that they are decently dressed. In most Nigerian universities it is expected that students adhere to a set dress code, while on campus, which prohibits wearing clothes that are transparent, tight-fitting, or otherwise considered inappropriate (Ibrahim et al., 2020).

Rescheduling of classes

Another observed challenge in the online teaching and learning activity is that of class rescheduling. It was expected that instructors and students would adhere to their normal class schedule (as set by the Office of the Registrar) while on campus. This is part of the "rule" element of the Activity Theory. Several students complained about instructors trying to reschedule classes to a different day or time which did not conform to the timetable.

> *"On a certain day we spent almost 20 minutes deciding on a new date and time for our zoom class. As the class has students from different programs, this was a difficult decision to make. The instructor was adamant that the time was not convenient for him."*

Student #8

If the online sessions are rescheduled, it is possible that some students might miss classes, this is especially true considering that the students are now at home and the social dynamics and pressure completely differ to when they are at school during the semester period. There is also the issue of adapting to a new routine by the students which further adds to the stress of adapting to the new method of learning (Carrington, 2010).

Furthermore, there is a potential conflict when international students are considered. At present, the international students in the private university in this case study are based mainly in African countries where the time difference is only a few hours. For students in countries where there is a great time difference in relation to Nigeria, it would imply that these students would have to attend their online sessions very early in the morning or very late at night.

4.3 Secondary Contradictions

Contradictions between the participants and objective elements

Inadequate preparation by the instructors

The first identified contradiction was observed between the participants and objective elements of the activity system. In the previous activity, i.e., face-to-face teaching, instructors would have the entire break between semesters to prepare for the courses they will teach in the coming semester. In most cases the instructors would have done this several times (in the past semesters) thereby refining the teaching resources and pedagogy over a period of time. With the transformation of the activity to online mode, the instructors are expected to improvise in a very short time. They were expected to prepare all of their materials and for all of their courses in the online learning environment. Though they were invited to attend a two-day training course, yet the time they were given (less than one week) was inadequate for the necessary preparation. Also, the motivation to do so was absent. Many of the instructors would have found this process very stressful (Hodges et al., 2020) and would no doubt have a negative effect on the teaching and learning experience. Thus, the outcome of the activity, students' acquisition of knowledge, will be adversely affected. The major issue being that you cannot just "teach online with Zoom" the same way you would give a classroom lecture.

Contradictions between the tools and objective elements

Inadequacy of Zoom

There are several conflicts that pertain to the use of Zoom as a tool to substitute classroom lectures. To test what students have learned and to measure the students learning progress as well as to evaluate how effective the course is, tests and examinations are administered. In face-to-face classroom, it is easier to monitor the students while they take their final examinations for the semester compared to if they take the exams online. The presence of invigilators dissuades students from cheating. The Zoom tool is an online collaboration tool that cannot cater properly to the monitoring required during examinations. This forced instructors to use alternative testing methods to administer the exams. The exam questions were administered using the learning management system and were set to be taken on a certain date and time. As mentioned by an instructor, there was no way of preventing students from accessing resources such as books and websites to find the answer to the exam questions, i.e. un-proctored open book online exams.

Another contradiction in the Zoom tool is found in its inability to cater for specialized courses such as laboratory courses where the students are expected to carry out experiments and tests, moot courts, and law clinic sessions for students in the law programs. The zoom tool was not designed to be used for such activities and as a result, the specialized courses were suspended until when the schools open. This has the potential to further complicate the existing challenges, as students cannot just pick up from where they left off before the semester was abruptly suspended.

Contradiction between the rule and the tool elements

Inadequate tools

Another contradiction observed within the activity is the lack of support for the appropriate tools (licensed Zoom) for the participants. Normal classes in the old activity system last for 1 hour and 30 minutes, while the zoom classes lasted for 40 minutes only. Thus, the requirement of online teaching is a contradiction in the educational management policy as the lecture time has been reduced by more than 50%. The instructors are expected to cover the same amount of the course material (i.e. to achieve the same learning outcomes). Trying to cover sections of the course in a 40-minute online class, that would otherwise be covered in 1 hour 30 minutes lecture while keeping the same learning outcomes without giving the instructors the support or tools

or resources is a contradiction to the activity that will cause further tensions in the activity, if the courses were to last a full semester.

Faculty and Course Evaluation

In the traditional method of teaching and learning, anonymous surveys are administered to students for every course they take in a semester. The surveys are administered twice for each course, just before the mid-term and final exams. This task is the responsibility of the academic planning and quality assurance (AP&QA) team. To administer the survey, the AP&QA team interrupts on-going classes with the use of a specialized application on tablets. This method is used to improve response rates and to enforce anonymity as the instructors are excused from the class for about 5 minutes while the students take the survey. In the online activity, these evaluations were not performed, therefore the policy (rules) to ensure faculty and their associated courses are evaluated by the students was not enforced.

4.4 Quaternary contradictions

Contradictions with external activity systems

Policy Conflicts with the accrediting bodies

The National University Commission (NUC) is a body under the Federal Ministry of Education charged with ensuring quality assurance of all academic programs offered in Nigerian universities among other objectives. There are potential conflicts between the activity system, in this case study, and that of the NUC's activity system of ensuring quality assurance of education programs.

Presently, the NUC only recognize the Open and Distance Education (ODE) model as the only means to reach students in remote locations. The ODE model involves the use of a Distance Learning Center (DLC) to facilitate eLearning. eLearning in ODEs is achieved via the use of online or CD ROM lecture notes (Ajadi, Salawu, & Adeoye, 2008) which are used at the learners' convenience and augmented with interactions with a course facilitator in the DLCs. ODEs provide access to higher education for a large number of the under-privileged Nigerian population. This method of eLearning is termed "asynchronous eLearning" which is different from synchronous eLearning where the students and instructors interact online from different locations and at the same time, (real-time learning). To implement any form of eLearning within the Nigerian education system, the NUC must assess the institution to ensure that the

infrastructure and resources required are in place to support the mode of instruction and learning for each program in question.

Another accrediting body is the council of legal education who is responsible for the accreditation of law faculties/schools as well as training at the Nigerian Law School (upon graduation). In the current activity system, the students in the school of Law was excluded from writing their final semester examinations due to the policy that prevents law students taking their exams online as it is outside the format of their required assessment regulations. Failure to adhere to some of the stringent rules of the council of legal education can result in the graduates, from the defaulting university, being denied entry into the Nigerian Law School which is a requirement to be called to the "Bar" and be recognized and allowed to practice as a lawyer in Nigeria.

The rules and regulations of both accrediting organizations have an adverse effect on the online teaching and learning activity (quaternary contradictions) as it prevents the law students from completing the semester as they cannot be tested on what they have learned. Testing, through examinations and assignments, is not only part of the learning process but also a requirement for assessing what the students have learned to enable progression in the learning activity. Examinations also improve the students' knowledge as it is a source of feedback. Also, there is a potential contradiction in the activity system based on the NUC guidelines as mentioned previously. The result is that the university cannot complete a full semester using the current activity as the university does not have the approval to deliver its courses in the online mode.

5.0 DISCUSSION

In this study the perception of online teaching and learning activity system, as a unit of analysis, was illustrated as object-oriented and communal in nature which is consistent with Engeström's activity theory (Engeström, 1987). The main tool used in the online activity system is the Zoom which was used to bring about the transformation of the traditional online classes in order to complete the semester that was abruptly ended due to forced closure of institutions as a result of the COVID-19 pandemic.

5.1 Challenges

The challenges observed in the online teaching and learning activity are not peculiar to only Nigeria or developing countries. These issues, some of which were expected

before the transformation of the activity, have been observed in similar studies. For instance, Kapasia et al. (2020), identified poor internet connection as a challenge to students while learning during the COVID-19 Pandemic. This is an important and persistent problem that needs to be addressed. As stated by Gedera (2014. p99), “the audio and visual features facilitate reciprocal communication among participants”. Therefore, poor connectivity will hinder the reciprocal communication between participants which is required for online teaching. According to Kaliisa et al. (2019), the issue of poor connectivity is more prevalent in developing countries. Along with the quality of internet access, another issue observed was the cost of access to the internet which was very high and could act as a deterrent to attending the online sessions. Gismalla et al. (2019) shares this view where two-thirds of the respondents in their study stated that quality internet was too expensive. Adopting an asynchronous mode of online learning could help to reduce the challenges with respect to the quality and cost of internet access as the students will spend less time online (real-time). The other challenge in the activity is the Zoom tool which users initially struggled to get accustomed to. However, with time, the participants adapted better to using the application. These challenges would also be associated with any new application introduced into an activity system where the participants would be required to learn the introduced technology. Encouraging the instructors to use a tool they are familiar with, as opposed to restricting them to Zoom would have reduced the burden placed upon the instructors.

5.2 Primary Contradictions

The findings from this study indicate that majority of the contradictions observed are a result of a hurried and uninformed decision to adopt a tool for the transformation of the teaching and learning activity. In agreement with Gedera (2014), these contradictions have the potential to affect student’s participation within the studied activity. The first observed contradiction in the study pertains to the roles (division of labor). With a change in activity, the roles within the system need to be evaluated to cater to the changes in the new activity. As the instructors had to adapt to new technology, there was a need for the administration of the online classes by the introduction of a class/teaching assistant to assist with administrative duties such as admittance of students into the online sessions, scheduling of online sessions, muting students and taking attendance. This would relieve the existing stress on the instructor who needs to

direct all his/her attention to teaching, especially for instructors who are labeled as technophobes.

Another primary contradiction was observed in the rule element. Similar to the role element, the rules regarding the activity must be revised with a change in the activity. Two contradictions were observed as a result of not revising the rules. The first involved the rules regarding student's behavior during the online sessions. Before the closure of the school, students were expected to dress appropriately and present themselves in a respectable manner. With the transition to online classes, students and instructors should be guided on online etiquette (netiquette) to prevent behaviors that will disrupt the classroom. A simple guideline for the participants would help them to know what is expected of them in terms of their behavior and ethics while participating in the online sessions. The second contradiction in the rule element relates to the rescheduling of classes. In the previous activity (traditional classes), this was done with the approval of the Dean and the Registrar to ensure there are no conflicts in the schedule. During the period investigated there were no observed conflicts, but there is the potential for conflicts especially if foreign students in different time zones are taken into consideration, this is a similar finding to prior research (Schullo et al., 2007; Gedera, 2014).

5.3 Secondary Contradictions

The fact that there is a difference in the delivery of lectures between online and traditional classes means that the instructors need time to prepare for the new mode of learning. Hodges et al. (2020) suggests that developing an online course will involve at least 6 to 9 months planning and preparing for the course to be delivered. The students will also require some time to adjust to the new mode of learning. This adds to the already existing stress on both sets of participants and can have an adverse effect on the objective of the activity. This finding is similar to the observations of Kaatrakoski et al. (2017), where instructors applied conventional teaching practices to online environments.

Another Secondary contradiction observed in the activity is between the tool and the objective. While the Zoom tool was able to facilitate online classes, there were limitations in the functionality of the tool to meet the activities objectives, for example catering for lab courses which normally would require physical presence to perform experiments. As a result, the lab sessions were suspended until when the schools open.

While there are options to overcome this contradiction, e.g., home labs and mailing kits to students, these options would be impractical in the Nigerian context. Noel et al. (2020) recommends establishing collaborations to foster the sharing and co-developing of materials for online laboratories, where students can complete the lab modules at convenient locations based on the necessary approvals. Also, testing the students' acquisition of knowledge through tests and final examinations, which is part of the learning process, was a challenge. As observed in prior research (George, 2020), examinations were conducted online using the university's learning management system as opposed to "pen-on-paper". This could lead to issues with accrediting bodies who view these methods as inferior.

Another secondary contradiction was observed between the rule and tool (non-licensed Zoom). The sessions were limited to 40 minutes and all participants would have to connect again, causing disruptions to the classes as well as the schedules if the students have back-to-back classes.

Finally, the evaluation of courses which is normally done in person could not be accomplished with the tool (Zoom). The entire evaluation process would have to be redesigned to be administered remotely. This is important for quality assurance purposes and if online classes are here to stay then a different approach must be sought.

5.4 Quaternary contradictions

The only quaternary contradiction observed in the activity system was with regards to the National University Commissions (NUC) policies and guidelines to use the synchronous mode of eLearning. Currently there are no universities that are allowed to offer programs in an online mode. This will have an adverse effect on teaching and learning activities for all tertiary institutions in Nigeria if lockdown rules are enforced for longer periods. This study supports the call for the NUC to revise existing policies pertinent to online learning (Ayodele et al., 2018; Asoro & Osunade, 2020).

While completing the semester might be permitted by the NUC, any program that requires a full online mode of interaction between the participants requires approval from the NUC. The approval process usually requires at least one year to process with requirements (technological and human resources) that can extend the process to several years. If the COVID-19 pandemic continues, it would mean a complete standstill to the Nigerian university system where there are approximately 2 million students. In the context of this study, teaching and learning will not be able to continue

with ramifications that could include the loss of students (to universities abroad that offer online learning) and loss of jobs (the university would be unable to pay salaries). This contradiction appears to have the most significant impact on the activity system as it has the potential to completely halt the activity system especially when considering the sanctions that could be placed on the university.

6.0 CONCLUSION

This case study aimed at identifying the challenges and contradictions observed in the teaching and learning activity in a private university in Nigeria using the Activity Theory framework.

The main limitation of the study is that the findings are based on a single higher education institution. Therefore, the results cannot be generalized to other higher education institutions in Nigeria.

To the best of our knowledge, this is the only study that has used AT to identify the conflicts that exist in online teaching and learning which was brought about by a hastened decision, as opposed to those that are planned and designed to be online from the very beginning. Thus, in contributing to theory, AT was used to conceptualize the online teaching and learning activity, and to expose its potential threats within the Nigerian higher education system.

As health specialists believe that COVID-19 is here to stay (Laviano et al., 2020), practical implications from this study indicate that to foster online learning in Nigeria, the education governing bodies such as the Ministry of Education, and the National University Commission need to formulate policies and guidelines that will encourage universities to embark on eLearning. These guidelines must also incorporate procedures to ensure quality assurance of the programs and courses.

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