

UNRAVELLING THE TENSIONS IN COGNITIVE ENGAGEMENT DURING COVID-19 PANDEMIC: STUDENTS AT THE DRIVER SEAT

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Abstract

Cognitive engagement is the ability or desire to be committed to intellectual works to produce desired results. It is a serious issue among stakeholders in the education system especially in Nigeria due to observations about lack of interest in the school system among students. This study therefore examined the tensions in cognitive engagement among students during the covid-19 pandemic. This study was guided by three research purposes and research questions. The study adopted the descriptive survey research design. The population for this study consisted all final year students in public Universities in Lagos State, Nigeria. The sample size of 400 was derived using Taro Yemane's sample size formula. A self-structured questionnaire was developed to elicit responses from participants. This research instrument was validated by experts and was also found reliable (.76) using Cronbach Alpha reliability technique. The research questions were answered using descriptive statistics such as mean and standard deviation. This study found that students were faced with a lot challenges during their stay at home that affected their learning; many of the students would prefer the conventional style of learning to the virtual learning and students engaged in learning through some strategies. Based on the aforementioned findings, this study therefore recommended among others that the government should provide ICT facilities in schools to make virtual learning easy, the instructors should be trained on the use of ICT tools in order to make teaching and learning effective, students should be able to adopt strategies that would enhance their cognitive engagement.

Keywords: cognitive, engagement, covid-19 pandemic, tension, strategies.

Introduction and Background to the Study

One of the most important issues facing educators today according to Voelkl (as cited in Conner, 2016), is student engagement. Without engagement, students tend to not only withdraw emotionally and cognitively from the learning process, but also physically take themselves away from the school setting altogether. The costs for this withdrawal are considerably high for both the student and society in many forms, including the lack of productive citizenship. Student engagement is a serious issue facing stakeholders in the education system. Student engagement with the school programmes and activities is important in promoting achievement and retention of students within the school system. This is because dropouts are at risk of unemployment and incarceration, placing additional burdens upon themselves and society. The educational system has focused on many interventions to prevent students from leaving school. Many are well intended, but few are based at the beginning of a student's educational career as a preventive measure when the process to withdraw from school may have begun as early as elementary school.

According to Mandernach (2015), the increased emphasis on promoting student engagement in postsecondary classrooms has made it imperative that educators are able to gauge, monitor and assess student engagement as a component of the overall learning experience. While there is considerable evidence validating the importance of engagement for fostering student learning, promoting student retention, enhancing quality assurance, and impacting student persistence, faculty and administrators still struggle to effectively assess student engagement at both the institutional and course levels. Much of the challenge in assessing student engagement comes from the lack of a unified definition to define the scope, intent and parameters of engagement. As highlighted by Bowen (as cited in Mandernach, 2015), "an explicit consensus about what we actually mean by engagement or why it is important is

lacking.” Yet, despite the divergence of operational definitions, Shulman (2005) maintains that postsecondary institutions must be diligent in fostering and monitoring engagement as “learning begins with student engagement.

Student engagement was first introduced as the theory of student involvement by Alexander Astin in 1984 and he provided the reasoning for five main purposes and key components of the student engagement/involvement phenomena. Student engagement is the amount of physical and psychological energy that the student devotes to the academic experience. Students’ engagement aids transformation of instructional practices, school activities and facilitates intervention and improvement efforts to assist every student achieve better academic performance. It is a key construct linked with learning and academic success such as higher completion rates, achievement test scores and grades. Thus, students’ academic performance is improved through student engagement with school programmes and activities (Fredricks, Filsecker, & Lawson, 2016). Student engagement is a predictor of better grades and conduct in school, higher levels of self-esteem and generally better adjustment outcomes.

Students’ Engagement in School (SES) is defined as the experience of centripetal connection of the student to the school in specific dimensions –cognitive, affective, behavioural (Reeve & Tseng, 2011; Veiga, 2016). SES is the extent to which students are committed to a school and motivated to learn. Overall, there is an agreement concerning its multidimensional nature and is often presented as a meta-construct, with two to four dimensions likely to predict numerous outcomes (Fredricks, et al., 2004; Glanville & Wildhagen, 2007). Student engagement according to Tomlinson (as cited in Fredricks, et al., 2004), is a magnet that attracts learner’s meandering attention and holds it. It means the learner has ‘wrapped

around' an important idea, and has incorporated it accurately into his or her inventory of how things work. Newman (as cited in Andrews, 2011) stated that student engagement is a psychological investment in learning. Veiga, Robu, Appleton, Festas, and Galvão (2014) stated that student engagement necessitates active learning. If students are not engaged in the learning process, every minute spent on instruction, and professional development will not motivate students to learn. Students engagement is a multicomponent concept that can be separated, but also remains intersected in a profound way. The three components of engagement are behavioral, cognitive, and emotional engagement.

To start with, behavioral engagement entails positive conduct, such as following the rules and adhering to classroom norms, as well as the absence of disruptive behaviors such as skipping school and getting in trouble; and participation in school-related activities such as athletics or school governance. On the other hand, emotional engagement according to Hsieh, Tuan, Chin, and Chen (2016), include students' affective reactions (such as interests, boredom, happiness, sadness and anxiety) toward relevant people and things in learning. It can be viewed as a series of interactions while cognitive engagement refers to psychological investments in learning, a desire to go beyond the requirements, preferences toward challenging learning tasks, flexibility in problem solving, positive attitudes when facing failure, self-regulation and the application of strategy. It is associated with students' psychological investments and diligence in learning, as well as, comprehension or mastering of knowledge, skills, or abilities they learn in academic tasks. They are able to study proficiently and use valid learning tactics. These also include the academic involvement in students' psychological aspects, consisting of self-regulation, learning goals, academic investments and being strategic.

Cooper (2014) explained that cognitive engagement is focused on the student's internal investment in the learning process, which incorporates the inner psychological qualities of the students' or their nonvisible traits that promote effort in learning, understanding, and mastering the knowledge or skills that are promoted in their academic work. Similarly, the cognitive engagement domain is selected when investigating the investment required, by the student, in understanding and mastering the knowledge and skills explicitly taught in schools. This lens is important for understanding how a student's psychological motivations are associated with overall student engagement (Nguyen, Cannata, & Miller, 2016). Student engagement is likely to be threatened by war, kidnapping, insurgency or any pandemic in the society.

Obviously, with the increasing complexities in the society and the existence of the pandemic, the education system is actually facing several adjustments to improve the quality of educational provisions as well as sustain students' engagement with the school. In actual fact, the world suddenly became bewildered with the pandemic that evolved and disrupted every meaningful activity in which education was not left out. According to history, the first influenza pandemic which is called the Spanish influenza, hit the world in 1918 and unavoidably claimed many lives (Centers for Disease Control and Prevention, 2018). The recent influenza, Coronavirus (COVID-19), originated from China in December, 2019 and became a pandemic in 2020. Social and economic activities began to cease gradually after the inception of this virus, lives were being shortened, hygiene was given superior priority in every home, international borders were shut against one another, teaching and learning hindered, and a lot more devastating experiences in the world at large.

Indeed, everyone loves to have a long break from school or work especially after a busy day, week or month, this was made possible through the unanticipated lockdown caused by coronavirus. This lockdown spread throughout the world in order to curtail its spread and loss of lives since there was no vaccine to be given as a remedy to the flu. In Nigeria, the unanticipated lockdown started in some states known to be highly affected by the virus (Lagos, Abuja and Ogun states) on 30th March, 2020. The lockdown led to a general holiday to all sectors in the states, including markets. Some primary and secondary schools had to rush up their terminal examinations while some could not meet up. Also, some higher institutions were able to start the first semester examinations but could not finish while some had more weeks for lectures before observing the lockdown.

The advancement of technology abated the tension posed by physical distancing that was set up as a means to avoid the virus through contacts with people. Social media became the 'best friend' of both young and old, virtual meetings became the order of the day, even virtual learning was not left out. Foreign schools decided to kick off learning through virtual process so the academic session will not be wasted. In Nigeria, virtual learning was unable to be fully incorporated in higher institutions because of Academic Staff Universities Union (ASUU) nationwide strike which began a week before the commencement of coronavirus lockdown or the absence of the right facilities. Notwithstanding, some private schools decided to spur and engage students who have begun to be restless at home in virtual learning through Zoom, WhatsApp, and Microsoft Teams. On the other hand, some states government decided to make virtual learning all-inclusive by taking into consideration primary and secondary students not privileged to learn through internet but can learn through air (radio and television), which made some pupils and students to be engaged in their academics for some hours in a day but nonetheless, higher institution learners were neglected. Favale et al., (2020) stated that students faced several challenges during Covid-19 lockdown and this

include; loss of direct and human communication, existence of technical difficulties, lack of confidence of some students while learning online leading to increased frustration and confusion, digital divide and illiteracy, technology cost among others. Kebritchi et al., (2017) stated that the challenges ranges from learners, educators and content issues. It is challenging to engage students in virtual learning during the pandemic as well as difficult for educators to develop content that covers the curriculum and engages the students. This study therefore set out to investigate the coping strategies, challenges faced by students during virtual learning and their perception about virtual learning in the school system.

Problem Statement

Cognitive engagement refers to psychological investments in learning, a desire to go beyond the requirements, preferences toward challenging learning tasks, flexibility in problem solving, and positive attitudes when facing failure. Cognitive engagement is focused on the student's internal investment in the learning process, which incorporates the inner psychological qualities of the students' or their nonvisible traits that promote effort in learning, understanding, and mastering the knowledge or skills that are promoted in their academic work. Students' cognitive engagement was threatened by the lockdown as a result of the Covid-19 pandemic where students learning was now centred on individual students' interest to participate in the learning task or devote time to learn concepts through the virtual learning platforms. Covid-19 was a shock to the world that led to total shut down of the economy and closure of schools.

The problem around students' cognitive engagement has been a major complain by stakeholders even before the covid-19 pandemic and it was noticed at all levels of the education system. Covid-19 pandemic and the lingering strike by the Academic Staff Union of Universities (ASUU) further aggravated the problem of cognitive engagement among

students because most students lost interest in reading or the school system as a whole. This has led to involvement of students in the search for menial jobs, participation in entrepreneurial activities, increase in criminal rate, prostitution, and other social vices in the society. It is therefore important for stakeholders in the education system to make learning interesting in order to re-engage these young learners with the school programmes activities. Thus, this study was conducted to unravel the tensions in cognitive engagement during covid-19 pandemic from the students' perspectives.

Purpose of the Study

This study examined the tensions of students in cognitive engagement during the pandemic. In view of this, the following are the objectives of this study;

1. to determine the level of students' cognitive engagement during COVID-19
2. to examine the strategies students might have adopted to learn during the period of the pandemic
3. to find out the perception of students about virtual learning.
4. to identify challenges encountered by students during the pandemic.

Research Questions

1. What strategies were adopted by the students to learn during the pandemic period?
2. How do students perceive virtual learning?
3. What were the challenges faced by students in learning during the pandemic?

Research Hypotheses

1. The level of students' cognitive engagement during Covid-19 is significantly low.

Methodology

This study adopted the descriptive survey research design in order to describe the tensions of students' cognitive engagement during the pandemic. The population of this study comprised all the final year students in public universities in Lagos State, Nigeria. The sample of this study using Taro Yemane's formula is 400 students, which were randomly selected using the multi-stage sampling approach. A self-structured questionnaire was developed and administered to elicit information on the research questions and hypothesis. The research instrument was validated by experts in the field of Educational Management and was found reliable (.78) using the Cronbach alpha reliability technique after a pilot study was conducted using 30 students that were exempted from the main study. The data collected were analysed using descriptive and inferential statistics. Research questions were analysed using descriptive statistics while the research hypothesis was tested using one sample t-test at .05 level of significance.

Answers to Research Questions

The following research questions were tested in the study.

Research Question One: What strategies were adopted by the students to learn during the pandemic period?

Table 1
Strategies Adopted by the Students to Learn During the Pandemic Period

S/N	ITEMS	M	SD
1	Online Group Discussion.	3.87	.76
2	Visit friends to learn difficult concepts.	3.12	.59
3	Borrow materials from friends.	3.29	.69
4	Attend private online classes	3.16	.62
5	Self-study	2.11	.36
Grand Mean		3.31	.65

Source: Field Survey, 2020

Information on Table 1 shows the strategies adopted by learners during the pandemic to participate in school programmes and activities. The participants were given opportunity to select the best five strategies that were adopted during the pandemic. The result of the analysis shows that online group discussion, visit friends to learn difficult concepts, borrow materials from friends, attend private online classes, and self-study were the major strategies used by learners during the Covid-19 era. It could be seen that the level of self-study among students was low ($M=2.11$, $SD=.36$) denoting that the level of cognitive engagement of students was significantly low during the pandemic period.

Research Question Two: How do students perceive virtual learning?

Table 2:
Students' Perception of Virtual Learning

S/N	ITEMS	M	SD
1	I hate virtual learning because of incessant network failure.	3.65	.53
2	I feel bored when I do not see my classmates.	3.60	.55
3	I always have difficult joining online classes.	2.38	.97
4	Some lecturers struggle with handling the devices which makes lessons boring.	3.47	.73
5	Virtual learning does not help to avoid stress.	2.55	.88
Grand Mean		3.13	.73

Source: Field Survey, 2020

Table 2 shows the perception of students on virtual learning during the Covid-19 lockdown. The table reveals that students perceive virtual learning as a problem which negatively affects learning ($M=3.13$, $SD=.73$). This shows that a large number of the participants do not support virtual learning in the school system.

Research Question Three: What were the challenges faced by students in learning during the pandemic?

Table 3:

Challenges faced by Students during the Pandemic

S/N	ITEMS	F	%
1	High cost of Data	356	22.94
2	Epileptic power supply	320	20.62
3	Poor network by service providers	297	19.13
4	Poor knowledge of ICT tools by instructors	290	18.69
5	Distractions from friends	289	18.62
Grand Total		1552	100.00

Source: Field Survey, 2020

Information Table 3 shows on challenges faced by students during the pandemic while undergoing virtual learning. The participants were asked to rate the first five items that were serious challenges during this period. Based on participants' responses, it could be seen that 356 participants (22.94%) chose high cost of data as the number one challenge, followed by epileptic power supply selected by 320 (20.62) participants. Information on the table also shows that 297 (19.13%) participants identified poor network by service providers as a challenge, 290 (18.69%) participants chose Poor knowledge of ICT tools by instructors as another challenge faced during the pandemic while the least factor selected by the participants is distractions from friends which was selected by 289 (18.62%) participants.

Summary of Findings

The following are the summary of findings of this study:

1. The result of the analysis shows that online group discussion, visit friends to learn difficult concepts, borrow materials from friends, attend private online classes, and self-study were the major strategies used by learners during the Covid-19 era.
2. Students perceive virtual learning as a problem which negatively affects learning (M=3.13, SD=.73).

3. The major challenges faced by learners during the pandemic are high cost of data (356, 22.94%), epileptic power supply (320, 20.62), poor network (297, 19.13%), Poor knowledge of ICT tools by instructors (290, 18.69%), and distractions from friends (289, 18.62%).

Discussion of Findings

The findings of the first research question one shows that online group discussion, visit friends to learn difficult concepts, borrow materials from friends, attend private online classes, and self-study were the major strategies used by learners during the Covid-19 era in public universities in Lagos State, Nigeria. This agrees with studies by researchers (Bozkurt & Sharma, 2020; Ribeiro (2020) where it was found that several strategies were used by students to learn during the pandemic.

The findings of research question two shows that students have a negative perception about virtual learning. This negative opinion of students may be as a result of the challenges faced during the virtual learning process. The findings of this study agrees with the finding of a study by Shivangi (2020) where it was found that there was a negative perception among learners about virtual learning. It also agrees with the findings of a study by Anderson (2005) who confirmed that students do not have interest in virtual learning. However, it negates the findings of a study by Basilaia and Kvavadze (2020) where it was found that students have a positive perception about virtual learning in the education system.

The result of the analysis of research question three shows that the challenges mostly identified by the participants are high cost of data, epileptic power supply, poor network, Poor knowledge of ICT tools by instructors, and distractions from friends. This agrees with

the findings of a study by Ayebi-Arthur (2017) where ICT infrastructure was identified as a challenge for virtual learning. It also agrees with the findings of a study by Cojocariu et al., (2014) where it was established that certain challenges threaten the achievement of the objectives of virtual learning.

Conclusion and Recommendation

The increasing complexities in the society and the existence of the Covid-19 pandemic has necessitated several adjustments in the education system to improve the quality of educational provisions as well as sustain students' engagement with the school. In actual fact, the world suddenly became bewildered with the pandemic that evolved and disrupted every meaningful activity in which education was not left out. The use of technology in instruction became the best option for schools in order to engage students with school programmes and activities. Engaging learners right from the corners of their homes was a top priority for most institutions across the globe in order to ensure continuity in learning and the achievement of the goals of education especially the sustainable development goals. However, it was not an easy task for a developing nation like Nigeria because the sudden introduction of virtual learning brought so many challenges to the learners, educators and school system. The identification of these problems will put government on their toes to unravel the many challenges around cognitive engagement of students in the school system.

Therefore, the following are the recommendations of this study:

1. The government should provide ICT facilities in schools to make virtual learning user friendly and accessible.
2. The instructors should be trained on the use of ICT tools in order to make teaching and learning effective.

3. The government should ensure regular power supply in the country.
4. The government should regulate the cost of data for students in order to ensure they have access to virtual learning and reduce the burden on parents and guardians.
5. The management of institutions should ensure that curriculum content for virtual learning are designed to engage learners.
6. The instructors should be adequately trained on different pedagogical methodologies needed to make learning engaging for learners.
7. Students should endeavour to avoid all forms of distractions to learning; whatever the situation or environment,
8. Students should be able to adopt strategies that would enhance their cognitive engagement.

References

- Anderson, J. (2005). IT, e-learning and teacher development. *International Education Journal*, 5(5), 1-14.
- Andrews, M. C. (2011). Meaningful engagement in educational activity and purposes for learning (Unpublished Doctoral dissertation). Stanford University, United States of America.
- Ayebi-Arthur, K. (2017). E-learning, resilience, and change in higher education: Helping a university cope after a natural disaster. *E-Learning and Digital Media*, 14(5), 259–274.
- Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, 5(4), 123-136.
- Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to Corona Virus pandemic. *Asian Journal of Distance Education*, 15(1), I–IV.
- Conner, T. (2016). Relationships: The key to student engagement. *International Journal of Education and Learning*, 5(1), 13-22.

- Cooper, K. S. (2014). Eliciting engagement in the high school classroom a mixed-methods examination of teaching practices. *American Educational Research Journal*, 51, 363–402.
- Favale, T., Soro, F., Trevisan, M., Drago, I., & Mellia, M. (2020). Campus traffic and eLearning during COVID-19 pandemic. *Computer Networks*, 176, 107-122.
- Fredricks, J. A., Blumenfeld, P., Friedel, J., & Paris, A. (2005). School engagement. In K. A. Moore & L. H. Lippman (Eds.), *What do children need to flourish: Conceptualizing and measuring indicators of positive development* (Pp. 305–321). Springer Science + Business Media. https://doi.org/10.1007/0-387-23823-9_19.
- Glanville, J. L. & Wildhagen, T. (2007). The measurement of school engagement: assessing dimensionality and measurement invariance across race and ethnicity. *Psychological Measurement*, 67(6), 1019-1041.
- Hsieh, C., Tuan, H., Chin, C., & Chen, S. (2016). An exploratory study of eighth graders' engagement in science learning. *Academia Journal of Scientific Research*, 4(6), 140-145.
- Kebritchi, M., Lipschuetz, A., & Santiago, L. (2017). Issues and challenges for teaching successful online courses in higher education. *Journal of Educational Technology Systems*, 46(1), 4–29.
- Mandernach, B. J. (2015). Assessment of student engagement in higher education: A synthesis of literature and assessment tools. *International Journal of Learning, Teaching and Educational Resesarch*, 12(2), 1-14.
- Nguyen, T. D., Cannata, M., & Miller, J. (2016). Understanding student behavioral engagement: Importance of student interaction with peers and teachers. *The Journal of Educational Research*, 1, 1-12.
- Reeve, J., & Tseng, C. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*. 36(4), 257-267.
- Ribeiro, R. (2020, April 14). How university faculty embraced the remote learning shift. EdTech Magazine. <https://edtechmagazine.com/higher/article/2020/04/how-university-faculty-embraced-remote-learning-shift>.
- Shivangi, D. (2020). Online learning: A panacea in the time of covid-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22.
- Veiga, F. H. (2016). Assessing student Engagement in School: Development and validation of a four-dimensional scale. *Procedia - Social and Behavioral Sciences*, 2(17), 813 – 819.
- Veiga; F.Robu, V. Appleton, J. Festas, I. Galvão, D. (2014). Students' engagement in school: Analysis according to self-concept and grade level. *International Perspectives of Psychology and Education*, 5(1), 209-220.