

RESILIENCE IN TEACHING AND LEARNING FOR ACADEMIC CONTINUITY DURING DISRUPTION FOR SUSTAINABLE DEVELOPMENT

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Abstract

As COVID-19 pandemic struck the education system in Nigeria, the resilience of the system was put to test. This called for a rethink and need to re-engineer approaches to instruction and learning. The system went through transformation and revealed new experiences for educators and learners as learning moved from the conventional mode to online learning by making use of different technology platforms to provide solution to the unprecedented closure. During this period, inequalities exist in assessing learning among the marginalized populations making learning to be more challenging and running the risk of many learners falling behind during the pandemic. More so, teachers had to adapt to teaching with new pedagogies which were new to them and/or had not been trained to use. As education is the driver of development, disruption in education will affect every facet of society therefore, hampering sustainable development. To this end, the study will investigate learners' experience of transition from face-to-face to online learning under three stages: Anticipation stage, coping stage and Adaptation stage (Duchek's model), and how learners experience from transition can be used to maintain academic continuity in the face of disruption and build resilience to achieve sustainable quality education. To this effect, two hundred and ten (210) students were selected through purposive sampling technique. A 21- item an online questionnaire with 4-point Likert scale was used for data collection, validated and the reliability was confirmed using Cronbach Alpa (0.78). Data were analysed using descriptive statistics. From the results, participants were able to identify various challenges and of the transition. Overall, it was suggested that despite building resilience through different online learning strategies, schools should not jettison face-to-face teaching and learning. A resilience model should be used to foster and reduce the impact of disruption on teaching and learning to achieve sustainable development.

Keywords: Resilience, Academic Continuity, Sustainable Development

Introduction

The outbreak of COVID-19 confirmed the popular saying that the only thing that is permanent in life is change. This was seen in institutions preparedness, readiness, their adaptation, and responsiveness to the change. COVID-19 threatening the survival of people and the way and manner at which it was communicated to the society by the government increases fear response (Devi, 2020). The induced fear of getting infected caused individuals to withdraw and avoiding each other from daily routines and caused a huge disruption in all facet of the sectors (Afolabi, 2020; Ogel-Balabam, 2022). In Nigeria, Institutions of higher learning were badly affected by the pandemic which posed a great challenge to learning as no one prepares for the sudden disruption (Afolabi, 2020). The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020) stated that about 1.6 billion students in 165 countries were out of schools as a result of the COVID-19 pandemic. From Nursery education to post-secondary education the resilience of education was put to test. For many, things became unusual, disoriented, and unwelcoming experience (Afolabi, 2020).

As the disruption persist, institutions had to abide by the fifth industrial revolution which human had to interact with machines (Geirge Prasetyo, Nurtjahjanti & Arghiani, 2021). As government and stakeholders were looking for solution to the problem of teaching and learning during this period, a new learning culture emerged putting e-learning to test on an unprecedented scale and to provide quality education while putting the pandemic on halt (Hamel & Valikangas, 2003).

The face-to- face teaching and learning commonly deployed in most schools lost its attraction and values as learning moved online due to restriction. However, students must cope with the restriction to learning and uncertainties that followed it and contend with digital learning (Bartuseviciene, Pazaver & Kitada, 2021). As learning moved online millions of are left behind without internet access, many are disadvantaged as a result of digital divide and fell behind in their studies. Education is the key driver of United Nations Sustainable Development Goal Four (SDG4) that is designed towards equitable quality education, all-inclusive and promotion of lifelong learning opportunities for all. It is therefore, imperative that all learners acquire the knowledge and skills needed to promote sustainable development. SDG4 underpins all of the other goals as it a critical imperative to other SDGs achievement. Through education, many SDGs could be achieved

and inequalities can be reduced to empower individuals to live more sustainable and healthy life (Nazar, Chaudly, Ali, & Faheem, 2018). The 17 SDGs set by general assembly of the UN are to secure a feasible, quiet, prosperous and fair life for everybody on earth. It has a wide range objective that cover worldwide difficulties that are critical for the survival of humanity (UN, 2015). Education is an important tool for realizing objectives of SDGs which must involves content, outcomes, pedagogies, environment lifelong and ubiquitous learning. Disrupted education cannot realize objectives of SDGs especially in developing country like Nigeria where education resources are unevenly distributed much more before the disruption by COVID-19 pandemic.

During the pandemic many are not fully benefitting from education as they fell on existing lines of socio-economic inequality (Esteban Jr., & Cruz, 2021). Marinoni & Sager (2021) reported a survey carried out by International Association of Universities that apart from the four virtual universities that their teaching-learning are not affected by the pandemic, every other higher learning was affected in the four regions of the world namely; America, Africa, Europe and Pacific. During the pandemic, teachers put in additional effort to help students combat mental stress while students were less enthusiastic and faced distractions from unstable network speed, noisy environment and a lack of professional equipment. Despite the fact that education has a key role to play in combating the impact of disruption, stakeholders and educators must rethink and reengineer their approaches to learning and teaching developing more resilient education system in the face of an increasing volatile uncertain, complex and ambiguous world.

Uncertainties caused by natural and manmade disasters like earthquakes, war, volcanoes, tsunami, pandemic, flood etc. are likely to increase as a result of urbanization, global warming, tectonic movement, overpopulation, natural activities on earth crust to mention a few. These can lead to disruption of learning in the long term as experienced during COVID -19 in short term which can further lead to job loss, early pregnancy, loss of interest in schooling, increase in out of school children (Dohaney, Roiste, Salmon & Sutherland, 2020). It is therefore, pertinent for government, educators, stake holders to develop a resilient and agile system to face these adversities as the world is becoming more turbulent faster than schools' resilient. Little research has been done on experience of learners from transition from face-to-face to online learning, and how schools' system resilience can be foster academic continuity in the face of disaster.

According to Dohaney, Roiste, Salmon & Sutherland, (2020) defined resilience as the capacity to adapt or cope well when faced with adversity or stress. Bates (2013) perceived resilience as schools instructional or academic continuity to deliver teaching and learning in the face of adversity. He went further that continuity is the ability for schools to maintain, restore teaching and learning when face with circumstances that threatens or disrupt its survival. Vogus & Sutcliffe (2007) defined resilience as the maintenance of positive adjustment under challenging conditions, emerging from those conditions strengthened and more resourceful. Schools' system should be able to provide continuous uninterrupted services through adaptation and adjustment when faced with disruption (Bartuseviciene, Pazaver & Kitada, 2021). Duchek (2020) developed a model on conceptualization of resilience for responding to adverse conditions before, during and after the disaster. It comprised of three stages, anticipation, coping and adaptation. The anticipated stage deals with observation, identification and proactively preparing against the occurrence of the disaster. Coping stage; it is the stage that learning from successes and failures takes place. Feedback is got to improve on further coping strategies and provides opportunity for learning. Adaptation stage is a stage for reflection. According to this model, there is no stage that exist in isolation, one is dependent of another for learning to take place.



Fig 1. Organizational resilience Model Duchek Model, 2020

This study will investigate and assess learners' experiences of transition from face-to-face to online learning during COVID-19 pandemic and how learners' experiences from the sudden shift to online can be used to maintain academic continuity in the face of disruption and build resilience. Learners were also asked to provide feedback on learning improvement for the future under adaptation stage. The researcher used two key research questions to guide the study at 0.05 level of significance: 1. What are the experiences of learners during the transition from face-to-face-to online learning during the pandemic? 2. How can learners experiences from sudden transition be used to maintain academic continuity in the face of future disruption and build resilience?

Methodology

The study used a mixed convergent parallel research design method (quantitative and qualitative) response to collect data from participants. Both quantitative and qualitative data were collected simultaneously. The two data were combined because they will contribute a better understanding of the case by providing a more robust and holistic view of the phenomenon studied. The researcher sought for the approval to conduct the research through Lagos State Ministry of Education human ethics committee and was granted (Ref. 2086). All the participants gave their consents to participate in the study and questions about respondents' personal health and sensitive issues were excluded.

Data Collection

The purposive sampling technique was used to select schools that participated in the study. The population of the study consisted of all the learners in the public secondary schools in Eti-Osa Local Government Area, Lagos State, Nigeria. This Local Government Area is prone to risk both natural and artificial disaster because of the location where it derived its name from (surrounded by Ocean). A total of 210 learners took part in the study. Purposive sampling technique was used select schools from the target population. The criteria are:

1. A school with a graduate physics teacher with at least five (5) years teaching experience
2. The school that shifted from face-to-face to online during and after the pandemic. Though after the pandemic, a lot of schools went back to hybrid.
3. Schools that are prone to disruption from flooding, Banditry and close for more than three times in a year because of the disaster. Three schools met the criteria and a total of 210 learners in SS2

participated in the study and randomly selected from the three schools. Participants were SS2 learners that are close to the completion of their studies and have experienced disruption for more than 5times during the period of their studies. They also have experienced a shift from face-to-face to online during the COVID-19 pandemic lockdown.

Hard copy questionnaire was designed for the study. The questionnaire comprised two sections A and B. Section A consisted of 21 items based on anticipation stage, coping stage and adaptation stage with Likert rating scale (Strongly Agree, Agree, Disagree and Strongly Disagree) and used for quantitative data collection. While Section B is qualitative part with three open-ended questions to further explore learners' experiences during the transition. The questionnaire went through content validity and reliability. For content validity all suggestions were put into consideration while the reliability was calculated to be 0.78 using Cronbach alpha KR-20 showing a good reliability of the items in the questionnaire.

Data Analysis

The quantitative data was analysed using descriptive statistics and the qualitative data made use of content analysis. The two data collected were jointly used to interpret the findings of the study. The items in the questionnaire were categorized by themes (Duchek Model,2020) Fig.1. The final questionnaire was administered to respondents. Over 250 hundred questionnaires were distributed only 210 were returned.

Research Findings and Discussions

The responses from the participants are analysed below

Table 1: showed the Demographic information of participants

Items	Category	Frequency	Percentage
Gender	Female	80	62
	Male	130	38
Device Used for learning	Smartphone	155	73
	Laptop	45	21
	Tablet	10	4.8
Technology Proficiency	Basic	109	51.9
	Intermediate	61	29
	Advance	40	19
Digital Media Commonly Used	WhatsApp	129	61
	Email	15	7
	Facebook	23	11
	Mobile Phone	43	21
Video conferencing tool used	Zoom	123	59
	Google meet	24	11
	Others	63	30

From Table 1 above showed that 62% (80) of the respondents are female while 38% (130) are male. The smartphone tops the list of the device most used by the learners (73%) followed by Laptop (21%) and finally Tablets (4.8%). In technology proficiency, advance level was the least (19%), 51.9% possesses basic knowledge and 29% has intermediate knowledge. For learning throughout the pandemic between teacher and learner's majority made use of WhatsApp (61%), (21%) made use of their mobile phone, (11%) used Facebook while (7%) used through email. Also, (59%) used zoom to learn, (11%) used Google meet while others are (30%).

Research Question 1: What are the experiences of learners during the transition from face-to-face to online learning during the pandemic?

Table 2: Showed Experiences of Learners During Transition from Fac-to-Face to Online

S/N	Items	Strongly Agree		Agree		Disagree		Strongly Disagree		Mean
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	
1.	Anticipation Stage									
	I experienced school closure often due to school location	190	90.4	10	4.8	8	0.48	2	0.95	3.8
2.	My study was interrupted because of the pandemic	178	84.8	23	10.9	5	2.4	0	0	21.1
3.	My school always be responsive to everyday disruption	45	21.4	7	3.3	76	36.2	82	39.1	1.6
4.	I feel prepared to learn through online mode	97	46.2	58	27.6	46	21.9	9	4.3	13.3
5.	I am well equipped with electronic gadget to start online learning before the Pandemic	14	6.7	20	9.5	78	37.1	98	46.7	3.4

6.	My school always get back to normal quickly after disruption	132	62.8	46	21.9	21	10	11	5.2	16.6
7.	My teachers always prepare us emotionally before crisis	110	52.4	64	30.5	27	12.6	9	4.3	14.7
8.	It was flexible to change delivery mode	58	27.6	84	40	46	21.9	22	10.5	9.6
9.	There are various communication channels from teachers to learners during the pandemic	34	16.2	46	21.9	89	42.4	41	19.5	6.4
10.	Coping stage									
	Due to unexpected migration, I was distracted and find it difficult to cope with my studies	98	46.7	54	25.7	49	23.3	9	4.3	13.3
11.	Use of social media like WhatsApp, Facebook etc made it easier for me to connect with teachers and colleagues	62	29.5	74	35.2	44	20.9	30	14.2	9.8
12.	I did not face any difficulty in submitting assignments	34	16.2	25	11.9	102	48.6	49	23.3	5.8
13.	The online learning enriched my learning and I was not disadvantaged	99	47.1	54	25.7	47	22.4	10	95.2	13.4
14.	I found online materials to be helpful and comprehension was easy	56	26.7	51	24.3	46	21.9	57	27.1	8.6
15.	I faced internet challenge during lockdown	76	36.2	67	31.9	34	16.2	33	15.7	11.1
16.	I can afford the cost of data for learning	45	25.7	32	15.2	68	32.4	145	69.0	7.4
17.	Adaptation Stage									
	My school has built in time saving learning resources after the pandemic	98	46.7	31	14.8	21	10	60	28.6	12.6
18.	My teachers focused more on learning outcome rather than course logistics	67	31.9	55	26.2	34	16.2	54	25.7	9.8
The	My school provides one-on-one academic development support to learners after pandemic	89	42.4	74	35.2	31	14.8	16	7.6	12.7
20.	My school has provided new digital learning resources	34	16.2	12	5.7	101	48.1	63	30	5.5
21.	My school is organizing professional development on online teaching for my teachers after pandemic	76	36.2	61	29.0	42	20	31	14.8	10.9

Anticipation Stage

The respondents' experiences are shared during the preparation from the shift from face-to-face to online. From the questionnaire 90.4% majority of learners stated that the often experienced school closure due to the location of their schools. 178 (84.4%) said that their studies were interrupted during the pandemic while 5% disagreed that there was no disruption in their studies. In response to questionnaire, 39.1% of learners disagreed that their schools always respond to everyday disruption swiftly. 46.2 learners reported that they failed to prepared to learn through online mode while 4.3 strongly disagreed that they were not prepared for the change in the shift. Despite the

fact that majority of learners were eager to learn through the mode, 46.7% are not well equipped with the electronic gadget to start the online learning before the pandemic. 62.8% strongly agreed that their various schools always get back quickly to normal after disruption. Majority of the learners rated their teachers very well in terms of preparing them emotionally before crisis. In response to the questionnaire, learners were able to identify communication channels that will help them to learn and prepare them for competency.

Learner1: "Due to the location of my school which is surrounded by the ocean, we normally experience flooding during rainy season and during the period our school will be closed for a period. This has made me to lose interest in studies during the period"Open ended question

Coping stage

A massive 46.7 and 25.7 of the respondent were distracted and could not cope due to the sudden migration. Despite the distraction, large number of respondents agreed that social media made it easier for them to connect with teachers and their colleagues. A large number of students 48.6 % and 23.3 had challenges in submitting their assignments online. Majority of the respondents 47.1 & 25.7 submitted that they were disadvantaged and online learning couldn't enrich their learning. More so. Many of the learners 36.2 % face challenges of data and 69.0% could not afford cost of data for learning.

L5: "I did not like online learning because lack of money for data and I couldn't interact with my friends effectively like the face-to-face."open ended questions

Adaptation stage

46.7% and 14.8% attested that their school has provided them with time saving learning resources after the pandemic lockdown. Majority of learners 31.9% and 26.2 % agreed that their teachers focused more on learning outcomes rather than course logistics. Furthermore, learners (42.4% and 35.2%) that their schools have provided new digital learning resources for them after the pandemic. Only a few learners disagree that their schools are not providing professional development for their teachers after the pandemic while 76% and 29.0 agreed that their schools have started professional development training course for their teachers.

L15: "Teachers and learners should be well equipped with gadgets and learning skills for effective teaching and learning" open ended questions

Implication of findings

It was reported that many schools are not prepared for the shift in learning despite the fact that they have been experiencing closure due to the natural disaster. Majority reported that their learning was interrupted during the COVID-19 lockdown. This is against the findings of Bhaumik & Priyadarshini (2021) stated that 70.2% of learners reported that their studies were non interrupted during the COVID-19 Pandemic. This might be due to the flexible nature of the distance learning. As many that are eager to learn through the mode lacked electronic gadgets to use for learning. Although, schools get back quickly to normal after every disruption. This finding is in line with the finding of Rizvi and Nabi (2021) that online learning has so many benefits but the benefits can only be earnest when learners have access to technology and affordable as stated by some learners below:

“The online learning made me believe that in face of disruption learning can still take place. I enjoyed online learning.”.....Open ended question

Many learners were disadvantaged and could not cope with the new mode. With the challenges faced, they have resolved that online learning as dull and unengaging which implies that learning process cannot achieve its full potential.

It was difficult for students and schools to easily adapt to immediate a environment after the lock down. However, many schools were gradually adjusting to the new mode after their students have signified appropriateness of the mode. Schools should endeavor to provide gadgets and trained teachers in this regard.

Recommendations and Conclusion

The goal of resilient education is not just only to come out of the disruptive crisis but to become come more stronger and able to face future disasters with education continuity and resourcefulness. Schools should develop new method of learning that will encourage participation of students given them equal opportunities to learning. The school curriculum should be redesigned in such a way that classes should not be school alone, it should be about students' experience, evolving concepts, open conversation, debates and mentoring. To achieve sustainable development goals, school system should be able to adjust to changes and the same time sustain quality. Government and

stakeholders continuity of learning and digital learning tools provided at cheapest cost to both teachers and learners.

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