Original Paper

Exploring Students' Factors in Online Teaching during COVID-19 Lockdown from their Lecturers' Viewpoint and Perspectives

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Abstract

The global community is currently harnessing the lessons learnt from the COVID-19 Education response, to build more resilient education systems. This can effectively be achieved via empirical evidence of the experiences of all stakeholders in education in all nations during the COVID-19 pandemic and lockdown. The purpose of this study was to explore student factors in the lecturers' experience of their online emergency remote teaching (ERT) in the College of Education, Agbor, Delta State, Nigeria during the COVID-19 lockdown. Using a quantitative descriptive design, the lecturers completed a structured questionnaire about their online ERT experiences. The findings suggest that generally, the students chose the familiar WhatsApp (chat and voice) messaging as against the use of zoom and other platforms for the ERT. Top students' challenges are:

- *unpreparedness for the ERT.*
- *experience of unavailable/unstable network/internet access and*
- *inability to purchase enough data.*

In addition, students lacked:

- *smart phones/laptops/computers,*
- *necessary ICT skills, and*
- *did not embrace the ERT, although it engaged them academically during the lockdown.*

Based on these results and in view of prevalent/imminent lockdown due to emerging new variants of the COVID-19 such as delta and omicron, interventions/strategies for achieving successful and satisfactory online teaching are recommended.

1. Introduction

The global community is currently addressing and harnessing the lessons learnt for education from the COVID-19 pandemic to develop more resilient education systems (OECD, 2020). These lessons are drawn from the experiences of all stakeholders during the COVID-19 pandemic and lockdown in all levels of education which are documented in literature. A foremost experience was the COVID-19 lockdown-induced online teaching which is termed Emergency Remote Teaching (ERT). The COVID-19 induced online teaching and learning triggered variety of novel adjustments in all educational institutions. At the higher education level, lecturers and students were confronted with inevitable sudden adjustments in teaching and learning location, materials, timing, and methods associated with online mode of delivery. Consequently, some stakeholders expressed doubts on the return of education to the pre-COVID state (Duncan, et al., 2020)), while others emphatically asserted that education has been changed forever (WEFORUM, 2020). Granted that the changes in the delivery of education in responding to COVID-19 cannot completely be discarded due to an intensive global awareness of the versatility of online teaching and learning, adequate, extensive, and inclusive data is required to drive appropriate changes in all nations of the world. Online teaching and learning mode of delivery of education (also known as distance learning) had been used by institutions which prepared adequately to achieve their objectives with it, prior to the COVID-19 pandemic. But research has shown that students' descriptions of their experiences with the COVID-19 induced online teaching and learning in higher education ranged from satisfaction and high performance (WEFORUM, 2020; Craig, 2021) to high dissatisfaction and poor performance (Selvanathan et al., 2020; Almendingen et al., 2021; Eidan et al., 2021). These two different polarities of experiences depend largely on the variables influencing the online teaching and learning processes in the institutions/environments. Appropriate changes in education systems involve effective manipulations of the variables influencing teaching/learning processes. Studies are required to describe vividly the variables to be sustained and the ones to be discarded to achieve positive changes in education (especially higher education) from the COVID-19 induced online teaching and learning.

Hence this study was undertaken to explore the variables which enhanced or limited the success of the COVID-19 induced online teaching as experienced by students from their lecturers' viewpoint and perspectives. The students' involvement, challenges and readiness in the online teaching were some of the factors explored.

A follow-up study: The COVID-19 induced online teaching experience in the College of Education, Agbor.

This is a follow-up study of the online teaching in the College of Education, Agbor, Delta State, Nigeria, during the COVID-19 lockdown in 2020 (Egede, 2021). In December 2019, the novel coronavirus disease was reported in Wuhan (in China). Its spread was so rapid that on 30th January 2020, the World Health Organization (WHO) declared it a public health emergency of international concern and named it COVID-19 on 11th February 2020 (WHO, 2020). In a quick succession, WHO declared it a global pandemic on 11th March 2020, as it claimed many lives in many nations within months (WHO, 2020). This adversely affected all systems of human endeavor in the world, including education, as the COVID-19 spread resiliently against all surveillance, checks and restrictions imposed globally. The COVID-19 virus was first reported in Nigeria on the 27th of February 2020 from a traveler who came from Italy (Amzat et al., 2020). It was during the first semester of the 2019/2020 session, close to the period of examinations of courses taught. The institutions in Nigeria were alerted on imminent lockdown as the COVID-19 spread geometrically with deadly casualties. The examinations in the College of Education, Agbor, were quickly concluded in preparation for the lockdown which had been imposed by both Federal and Delta State Governments (Ahon, 2020) to start from 1st April 2020. On April 2nd, the Minister of Education in Nigeria met with 237 Vice Chancellors, Rectors and Provosts of tertiary institutions and directed them to commence lectures online during the lockdown (Adepetun & Lawal, 2020). However, the lockdown placed restrictions which affected communication and effective planning of online teaching in some institutions until June 2020 when the Federal Government eased the lockdown, and movements into the campuses by staff could be made while observing the non-pharmaceutical precautions against COVID-19 (Royal, 2020). In this second phase of the Federal Government's ease of lockdown, the College of Education, Agbor, organized the training of lecturers to teach online, while the students were still at home due to the lockdown, and were not expected to resume on-campus yet. The first study explained the details of the training of the lecturers for the online teaching (Egede, 2021). Since the students were not on campus, they were contacted through their various coordinators, and required to form WhatsApp groups and liaise with their various lecturers to plan and start the online teaching for the second semester of the 2019/2020 session in July 2020. This situation portrayed an emergency measure to deliver education, as seen globally and in many nations (Wu, 2021), and has been referred to as "emergency remote education" while we referred to it specifically as "COVID-19 induced online teaching" in this study. This follow-up study focused on the students' factors as experienced by the lecturers who were trained to persuade the students (who have been learning through the face-to-face mode), to learn online from their homes. The lecturers were the subjects of the study from whom data was collected because they were in direct communication with their students during/after the online teaching and could give valid information on their students' experiences/reactions as they were being taught. The online teaching lasted from July to the end of September in 2020, after which schools resumed fully following further ease of the lockdown, for the students to do their examinations in-campus.

1.1 The Global Experience of the Emergency Remote Teaching

The technologies employed: The move to online teaching as the education response to COVID-19 by nations of the world involved the use of every available and relevant technology. Technologies such as Learning Management Systems (LMS), course management systems, collaborative tools, social media, media production tools including radio and television broadcasting were used according to the level of technological advancement of nations (World Bank, 2020). Digital technologies geared towards education users were offered by tech companies in very flexible and affordable (and free) varieties to facilitate remote teaching and learning during the lockdown periods. Some of the specific provisions are LMS (e.g., Moodle, Canvas); video-conferencing tools (e.g., Facebook Rooms, Google Meet, Microsoft Teams); online collaboration tools (e.g., Miro, Mural); Project Management Software (e.g., Trello, Teams, Slack); Assessment tools (e.g., Respondus); Messaging platforms (e.g., WhatsApp, Discord, Email, SMS); Social network sites (e.g., Facebook Rooms, Telegram); Massive Open Online Course (MOOC) platforms (e.g., Coursera, Edx); and education sites (e.g., Google for education) (Naffi, 2020). Selecting from these technologies is a huge challenge/responsibility for nations, institutions, and educators, in the emergency remote teaching period. Emergency remote teaching has been described as a temporary shift of instructional delivery to alternate modes due to crisis circumstances involving the use of fully remote teaching solutions, for education that would otherwise be delivered face-to-face or as a blended course (Hodges et al., 2020). Therefore, it is different from usual online teaching which is purposely designed using online design principles and fitting technology. The crisis in this case is the COVID-19 pandemic, and the teaching solution employed was mainly 'induced' online or virtual mode of teaching involving the use of technologies by teachers and learners, which to a large extent determined its success in any place.

The Universities and higher institutions which have online platforms prior to COVID-19 for all their courses quickly adjusted to using them during the lockdown. Technologically advanced countries which have the required infrastructure for online teaching on ground adjusted to the online teaching mode for their schools in shorter periods.

China (where the COVID-19 pandemic originated) started the new semester in both primary and secondary schools online on February 9, 2020, and embarked on what has been described as the largest simultaneous online learning exercise in human history (World Bank, 2020). The World Bank report showed that China launched an initiative "ensuring learning undisrupted when classes are disrupted", mobilizing all stakeholders including telecom providers to effect the shift to online teaching. There was massive government assistance to higher institutions for transition to online, remote and distance delivery mode. On February 9, 2020, the Chinese Ministry of Education (MOE) issued the "guidance on the organization and management of online teaching and learning in regular higher education institutions (HEI)". All HEIs were requested to select from 22 recommended online platforms in China which can provide 24000 higher education courses free (Australian Government, 2020).

The Centers of Teaching and Learning (CTLs) supported the online delivery of courses in some of the Universities in developed countries such as Canada, USA, Lebanon, UK, and France. As noted by Naffi, (2020), the CTLs, influenced by their previous experiences of supporting usual online teaching, provided training for lecturers who were only used to face-to-face (F2F) mode of teaching, designed online courses with lecturers, moved courses to online formats in addition to helping students purchase laptops from funds raised for them. Both lecturers and students were empowered to adopt usual online teaching/learning technologies for the remote teaching in these cases and similar ones.

However, studies showed the use of variety of tech tools in institutions in other nations. For example, Zoom, Microsoft Teams, and WhatsApp (in communicating messages to students outside the virtual classrooms) were used in Jordan (Almahasees et al., 2021); Moodle was used in Australian higher institutions (World Bank, 2020). Universities in Russia launched "uni at home" on Instagram and used the Ministry of Education YouTube-channel to launch "keep learning, keep teaching" (World Bank, 2020), while Israel used LMS, course websites and other digital tools (Cohen & Davidovitch, 2020).

Adjusting to the use of technology in developing nations was not very easy. Developing countries in sub-Saharan Africa was marked by situations where 90% of people had no computers at home, more than 80% lacked internet access while approximately 56 million people live in areas with no mobile networks (UN, 2020). In higher institutions, some lecturers are not efficient in using tools like slides, whiteboards, digital pen, touchpad, tripod screensharing, google classroom, zoom and similar apps (Toufique, 2020). Even with these difficulties, African countries like Nigeria, Namibia, Kenya, and Zambia developed coping policies which enabled the use of multi-modal approach, implementing remote teaching solutions using variety of channels and delivery systems such as radio, T.V, social media apps and online devices (Barron Rodriguez et al., 2021). In Nigeria, the Federal and State Governments organized the remote teaching and learning through the Ministries of Education at the primary and secondary school levels for public schools using a variety of delivery systems (Oyeniran & Oyeniran, 2020) while the tertiary institutions were independent in choosing their respective digital platforms. Studies revealed that higher institutions in Nigeria used SMS, Emails, WhatsApp messaging, Zoom, Telegram, YouTube, Google Teams, Google Classroom, and some Universities' e-learning platforms (e.g., Canvas) (Iseolorunkanmi et al., 2021; Olasunkanmi, 2020; Idegbekwe, 2019; Oliomogbe, 2020; Egielewa, 2020). Various tertiary institutions used these tools in variety of combinations depending on their prior virtual and infrastructural orientations (Iseolorunkanmi et al., 2020). Consequently, management of tertiary institutions had to create awareness and involvement of lecturers and students (the primary users) in choosing a convenient remote teaching platform to achieve success in line with planning for emergency shift to online teaching (Richards & Valentine, 2020). In the College of Education, Agbor, used for this study, lecturers were given orientation on how to use Zoom and other familiar online social media platforms (e.g., WhatsApp) to deliver remote teaching online (Egede, 2021). As a follow-up, this study investigated the actual platforms the lecturers used as chosen by their students.

Students' factors/experiences: Students' factors are the experiences of students which overtly influenced the online teaching by the lecturers. Students' experiences followed the same divide between technologically advanced nations and those nations that are not technologically advanced as in the type of platforms used for the emergency online remote teaching during the COVID-19 lockdown. As summarized by WEFORUM (2020), students' experiences, especially with internet access and/or required technology gadgets varied across countries with respect to development, and within countries with respect to family income brackets. This trend was not different in China, with a historical massive and quick shift to emergency online remote teaching for all levels of education. Studies showed that college students from disadvantaged family backgrounds (i.e., below-college parental education, below-average family economic income and rural residence) were prone to have an unsupportive attitude towards online courses (Zhang & Liu, 2021); and students also experienced initial problems of irregular mobile signals, lack of opportunities for constructive interaction, some degree of rote delivery of lessons and poor feedback (Wang & Gao, 2021). Lockdown imposed some level of financial difficulties which made students from low socio-economic backgrounds unable to take the online courses fully due to lack of computer/laptop and smartphones, energy, and unconducive home environments (Wang & Gao, 2021). These are in addition to variety of challenges and psychological distresses, risk management imposed by travel bans, and quarantine/self-isolation experienced by international higher education students which disrupted personal continual online learning (Peters et al., 2020).

All through higher institutions in the United States of America (USA), there were recorded disproportionate access to online teaching experienced by students from various races and low-income backgrounds and by students with disabilities (Department of Education (USA), 2021). In Russia, higher education students were used to online teaching prior to the COVID-19 pandemic, but some of them expressed the challenge of missing usual physical interactions with fellow students during the emergency remote teaching (Craig, 2021). One of the challenging student factors identified by some lecturers in Russia was a lack of readiness to embrace the emergency online remote teaching (Almazova et al., 2020). Students were used to online teaching prior to COVID-19 lockdown period in Germany and studies showed that they had access to both technological devices and network for the ERT (Zawack-Ritcher, 2020). Students of EFL faced problems related to technical, academic and communication challenges in Saudi Arabia and were dissatisfied with the online learning due to their poor performance (Mahyoob, 2020). In the same vein, most students felt dissatisfied with their experience of the ERT because its effectiveness was adversely affected by household income level, IT literacy and lack of social presence as found in a study in Hong Kong (Mok et al., 2021). Although students identified flexibility and convenience as benefits of the ERT, a study in Jordan showed that they also experienced challenges adapting quickly to the online teaching, technical and internet issues, data privacy and security, lack of interaction/motivation, and disadvantage for the deaf and hard of hearing (Almahasees et al., 2021). Zhang (2020) reported experience of congestions created by the

sudden and steep increase in the use of online platforms that were not initially prepared for the extensive use in Israel. In Taiwan, Wu (2020) found that students' familiarity with digital platforms and software/hardware assistance provided by the school's information center helped to prepare them for the ERT.

Gamut of research findings showed profound variability of higher education students' experiences with the ERT, as expected, due to differences in technological capabilities of nations. As an example, students from Switzerland, Norway, and Austria where 95% have computers cannot have similar experience with those from Indonesia where 34% have computers according to OECD (2018). A study on the ERT in Nigeria showed that students were not satisfied with the virtual learning in many higher institutions, due to poor internet infrastructure and lack of electricity (Egielewa et al., 2021). Their very low acceptance of the online learning and preference for F2F mode made the researcher, Egielewa (2021) to recommend that the higher institutions should return to F2F as soon as the pandemic is over, and that the internet and power grid should be overhauled nationwide. Specifically, Adepetu and Lawal (2020) described the ERT in public universities in Nigeria as a failure due to inadequate infrastructure, lack of expertise, epileptic power supply, erratic internet network and high poverty-level of many students. A researcher described the experience of the ERT by Nigerian university students as simply "painful" (Olasunkanmi, 2020). Although, Olasunkanmi (2020) used students from a private university where the lecturers went the extra mile to deliver lectures through a variety of online platforms, their efforts were countered by erratic power supply, internet network fluctuations, distractions from the neighborhood of students' residences and high data consumption. In these studies (Egielewa et al., 2021; Olasunkanmi, 2020), data was collected from students but in this study, data is collected from the lecturers whose teachings were affected by their students' experiences in the COVID-19 ERT.

1.2 Theoretical Background

Teaching is a complex activity which involves the interactions between the teachers and learners, among others, irrespective of the mode of delivery. According to Wright (2015), the principle of student-teacher interactions in online learning environment provides successful strategies and procedures for developing policies to bring about an awareness of practices that enhance online learning. Student-teacher interactions could also portray strategies, procedures or situations which could hinder learning in any mode. This principle is employed in this study to assess the lecturers' perspectives on the factors emanating from their interactions with their students which affected their online teaching adversely or otherwise. In higher education, student-teacher interactions have been found to be strongly linked to learning, classroom management and student absenteeism. Hence Tormey (2021) developed a theoretical model showing three dimensions of student-teacher interactions: affection/warmth, attachment/safety, and assertion/power in higher education. The principle employed in this study to collect data corresponds to the dimension of affection and warmth, in which a teacher expresses friendliness, care, warmth, positivity and compassion towards their students. This dimension is considered very essential and core in the context of the ERT which requires teachers to encourage

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their students to overcome the challenges of the sudden change in the mode of teaching. Therefore, it is expected that the lecturers in this study, from their viewpoint in the context of ERT, should validly identify students' factors (experiences and actions) which affected their online teaching. Some of the key factors which were prevalent in the study environment, choice of online teaching technology, access to network/internet, personal ownership of learning devices (computers, laptops, and smartphones), possession of ICT skills, disposition towards ERT and preparedness for online teaching are surveyed.

1.3 Research Questions

The following research questions guided the study.

1) What are the online tools chosen by the students for the ERT?

2) What were the students' experiences regarding the following areas of common challenge during the ERT?

   i.   Access to stable network/internet in their residences

   ii. Access to sufficient data

   iii. Possession of hardware (computers, laptops, and smartphones)

   iv. Possession of requisite basic ICT skills

3) To what extent were the students prepared for the online teaching?

4) What is the general disposition of the students to the online ERT?

5) Did the online ERT provide significant academic engagement of the students during the lockdown?

6) Are there significant influence of the lecturers' gender and teaching subject on their perspectives

2. Methodology

2.1 Research Design

A quantitative descriptive survey was used for this study. This design is suitable for obtaining the perspectives of lecturers about the experiences of their students which had already occurred without any manipulation by the researchers (Martyn, 2008).

2.2 Population, Sample and Sampling Procedure

All the lecturers in the College of Education (now upgraded to the University of Delta) formed the population for the study. The common characteristics of interest shared by the 240 lecturers is that they were all required to teach online during the emergency remote teaching period. This number of lecturers is not too large, and they are reachable, hence the total population sampling (Stephanie, 2018) is used to include all of them as the sample.

2.3 Instrument

In step with the research design, a quantitative questionnaire on the online emergency remote teaching (QOERT) was constructed to obtain specific information from the respondents, with answers that can

be converted to numerical values (Hartland, 2021). QOERT has 15 items made up of two sections A and B. Section A is made up of questions on 'split' variables of gender and teaching subject, while section B consists of questions with dichotomous response scale. The dichotomous response scale is appropriate in this study since the evidence of the students' factors can clearly be observed by the teachers (Descastellarnau, 2017), as they affected their teaching. Before usage the questionnaire was revised based on the comments made on the items by a specialist in Measurement and Evaluation. The value of the Cronbach's Alpha for QOERT is 0.82 which is considered good for it to be used for this survey (Kolassa, 2016; Goforth, 2015).

2.4 Data Collection

The questionnaires were administered in person to the lecturers on campus and retrieved from them after completion. Two hundred and twenty-five (225 or 94%) of the total 240 lecturers completed and returned the questionnaire in usable form.

2.5 Analysis of Data

The data from the questionnaire responses were analyzed using SPSS 23.0 to obtain frequency counts, percentages, weighted means, chi-square values and standard error. In addition, the results were presented pictorially using simple and clustered bar charts. The use and interpretation of Likert scale values presented by Jonald (2019) were adapted in this analysis, as shown in Table 1. The influence of gender and teaching subjects were obtained using nonparametric tests, Mann-Whitney-U and Kruskal-Wallis tests and Cross-tabulation of frequency counts.

3. Results

3.1 Demographic Details

There are six schools in the College of Education, Agbor (now upgraded to the University of Delta): Education, Early Childhood and Care Education, Sciences, Arts and Social Sciences, Vocational and Technical Education and Languages. The 27 departments in these schools were grouped into three in this study with respect to the degree to which Information and Communication Technology (ICT) was used in their various departments. The three groups consist of Art and Language—35 (e.g., French, English language, Theatre Arts …), Vocational and Social Science—100 (e.g., Business Education, Agricultural Science, Economics …), and Sciences—40 (e.g., Physics, Mathematics, Computer Science …). The proportions of females and males for the total of 225 were 63 and 162 respectively. In some of the questionnaires there were missing values for some variables but in most cases, they did not exceed 5, from the results of the analysis. It was noted that some (55) of the lecturers did not fill in their departments while they filled their gender and is accounted as minor error as it did not affect the other core variables for the study.

Table 1. Interpretation of the Weighted Means in the 2-Point Scale

Likert Scale Value	Meaning	Interval	Difference	Interpretation/Description
1	Disagree	1.00 – 1.53	0.53	Not observed
2	Agree	1.54 – 2.00	0.47	Observed

Adapted from Jonald (2019)

Table 2. Means and Standard Errors for the Choice of Online Teaching Platforms by Students

S/N	Students chose:	Mean (M)	S.E.	Interpretation/Description
1	Zoom (synchronous meeting)	1.133	0.022	Not observed
2	WhatsApp Chats/Texts	1.800	0.027	Observed
3	WhatsApp Voice Messages	1.778	0.028	Observed
4	WhatsApp Video Messages	1.533	0.033	Not observed
5	SMS	1.444	0.033	Not observed
6	Email	1.444	0.033	Not observed

N = 225

Table 3. Chi-square Goodness-of-fit Test for the Students' Choice of Online Teaching Platforms

S/N	Online teaching platform	Frequency Count Agree (N)	%	Frequency Count Disagree (N)	%	X^2	df	Sig
1	Zoom	30	13	195	87	121.0	1	0.000*
2	WhatsApp Chats	180	80	45	20	81.0	1	0.000*
3	WhatsApp Voice Messages	175	78	50	22	69.4	1	0.000*
4	WhatsApp Video Messages	120	53	105	47	1.0	1	0.317

| 5 | SMS | 100 | 44 | 125 | 56 | 2.8 | 1 | 0.096 |
| 6 | Email | 100 | 44 | 125 | 56 | 2.8 | 1 | 0.096 |

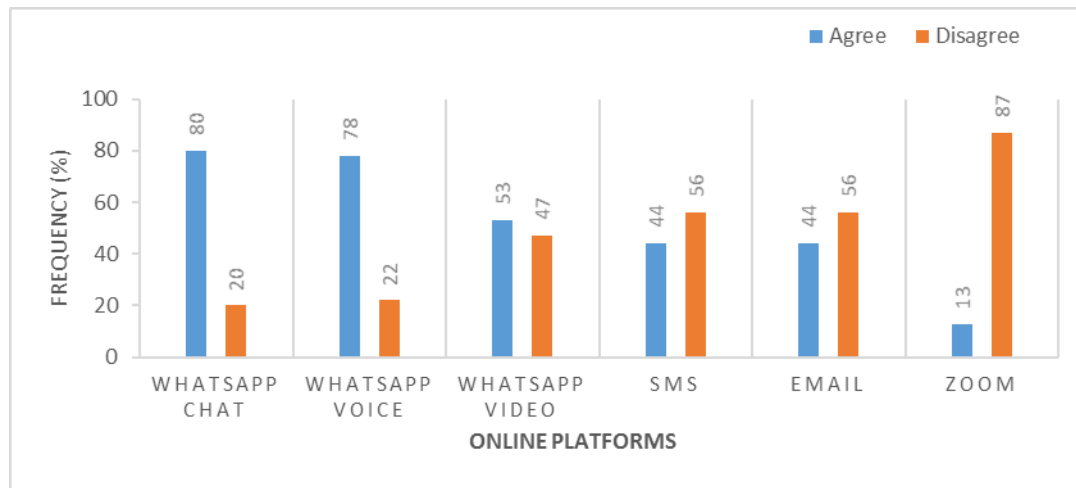N = 225, * Significant at 0.05 level

Figure 1. Simple bar charts Showing the Results for the Lecturers' Ratings of the Choice of Online Teaching Platforms by Their Students

3.2 Students' Choice of Online Platform/Tools

Table 2 shows that on the average, the students did not choose Zoom app (M = 1.113 < 1.53); WhatsApp video message (M = 1.53 = 1.53); both SMS and Email (M = 1.44 < 1.53). The lecturers' rating showed that on the average, the students chose the WhatsApp text/chat and Voice messaging tools (M = 1.80 > 1.53; M = 1.78 > 1.53) respectively (see Table 2).

Table 3 shows that the proportion of lecturers who observed that their students did not choose the Zoom platform were significantly higher than that of those who reported that their students chose it (X^2(1, N = 225) = 121.0, p = 0.000 < 0.05). In the same vein, the proportions of lecturers who observed that their students chose WhatsApp text/chat and voice messaging were significantly higher than that of those whose students did not choose them (X^2(1, N = 225) = 81.0, p = 0.000 < 0.05, and X^2(1, N = 225) = 69.4; p = 0.000 < 0.05 respectively). The chi-square test of goodness-of-fit showed that the proportions of observations for the choice of WhatsApp video messaging, SMS and Email were not statistically different (X^2(1, N = 225) = 1.0; p = 0.317 > 0.05; X^2(1, N = 225) = 2.8, p = 0.096 > 0.05 respectively). Generally, the results indicated that majority of the students did not choose the synchronous Zoom platform, but rather chose the WhatsApp chat/text and voice messaging for the online ERT. In addition, some of them chose the WhatsApp video, SMS, and Email, but the proportions were not significant enough to conclude that the platforms were generally chosen by students.

3.3 Students' Factors/Experiences which Affected the Online ERT

Table 4. Means and Standard Errors for Student Factors Observed during Emergency Remote Teaching

S/N	Students:	Mean (M)	Std. Error	Description/Interpretation
1	Are unable to buy enough data	1.974	0.011	Observed
2	Lack ICT skills	1.825	0.027	Observed
3	Lack Computer/Smartphones	1.878	0.023	Observed
4	Have unstable/unavailable network	1.974	0.014	Observed
5	Are not prepared for ERT	1.954	0.014	Observed
6	Did not embrace ERT	1.881	0.022	Observed
7	Were engaged by ERT	1.800	0.028	Observed

N = 225

Table 5. Chi-square Goodness-of-fit Test for the Students' Factors Observed during the Online ERT

S/N	Students' factor/Experience observed	Freq. Count Agree	%	Freq. Count Disagree	%	X^2	df	Sig
1	Inability to buy enough data	190	97.0	5	3.0	175.5	1	0.000*
2	Lack of ICT skills	165	82.5	35	17.5	84.5	1	0.000*
3	No possession of Computer/Laptop/Smartphones	180	88.0	25	12.0	117.2	1	0.000*
4	Unstable/unavailable internet/network	190	97.0	5	3.0	175.5	1	0.000*
5	Not prepared adequately for online ERT	205	98.0	10	2.0	176.7	1	0.000*
6	Did not embrace the online ERT	185	88.0	25	12.0	121.9	1	0.000*
7	Were engaged by ERT during lockdown	160	80.0	40	20.0	72.0	1	0.000*

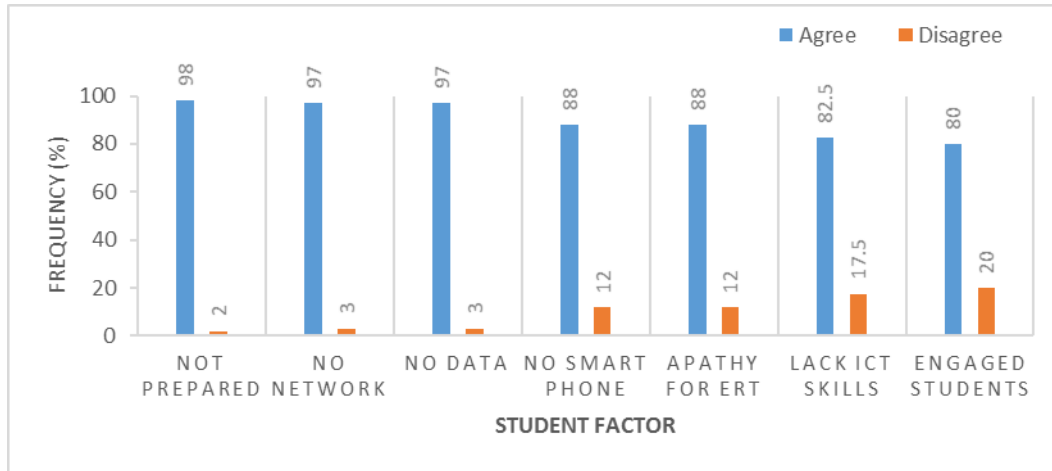N = 225, * Significant at 0.05 level

Figure 2. Bar Charts Showing the Results for the Students' Factors/Experiences

From the analysis, the were observed by the lecturers as significant factors which affected their online ERT during the lockdown (See Tables 4 and 5).

  i. Students' inability to buy enough data ($X^2(1, N = 225) = 175.5$, $p = 0.000 < 0.05$)

 ii. Students' lack of ICT skills ($X^2(1, N = 225) = 84.5$, $p = 0.000 < 0.05$)

iii. Students' lack of possession of computers/laptops and smart phones ($X^2(1, N = 225) = 117.2$, $p = 0.000 < 0.05$)

iv. Students' experience of unstable/unavailable internet/network ($X^2(1, N = 225) = 175.5$, $p = 0.000 < 0.05$)

 v. Students' unpreparedness for the online teaching ($X^2(1, N = 225) = 176.7$, $p = 0.000 < 0.05$)

vi. Students' negative disposition for the online teaching ($X^2(1, N = 225) = 121.9$, $p = 0.000 < 0.05$)

vii. Students' engagement by the online teaching ($X^2(1, N = 225) = 72.0$, $p = 0.000 < 0.05$).

The significant general perspectives of the lecturers on these factors are pictorially shown in the simple bar charts in Figure 2. While the first six factors were "clogs in the wheels" of progress for the online teaching, the seventh one helped in keeping it going, since it provided engagement for the otherwise idle students in their residences.

Table 6. Mann-Whitney U Test and Chi-square Test of Independence for the Influence of Gender on Students' Choice of Online Platforms

S/N	Measures	Zoom	WhatsApp chat	WhatsApp Voice	WhatsApp Video	SMS	Email
1	Mean value for females (N = 63)	1.18	1.76	1.88	1.59	1.52	1.52
2	Mean value for males (N = 162)	1.07	1.81	1.70	1.48	1.37	1.37
3	U	5150.0	5450.0	4712.0	5125.0	4825	4825
4	Z	-2.325	-0.895	-3.072	-1.540	-2.314	-2.314
5	Sig.	0.020*	0.371	0.002*	0.124	0.021*	0.021*
6	Chi-square X^2	5.430	0.805	9.479	2.383	5.377	5.377
7	df	1	1	1	1	1	1
8	Sig.	0.020*	0.370	0.002*	0.123	0.020*	0.020*
9	Phi coefficient	-0.157	0.060	-0.208	-0.104	-0.156	-0.156
10	Sig.	0.020*	0.370	0.002*	0.123	0.020*	0.020*

N = 225, * Significant at 0.05 level

Table 7. Mann-Whitney Test and Chi-square Test of Independence for the Influence of Gender on Students' Factors Observed by Lecturers

S/N	Measures	No Data	Lack ICT Skills	No Smartphones	No Network/Internet	Apathy for ERT	Not Prepared	Engaged Students
1	Mean for females (N = 63)	2.00	1.90	2.00	2.00	1.88	1.94	1.86
2	Mean for males (N = 162)	1.99	1.80	1.80	1.96	1.88	1.96	1.80
3	Mann-Whitne	4025.0	3675.0	3750.0	3900.0	4975.0	5075.0	4125.0

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	y U							
4	Z	-1.726	-3.237	-4.130	-1.630	-0.125	-0.795	-0.995
5	Sig.	0.084	0.001*	0.000*	0.103	0.915	0.428	0.320
6	Chi-square X^2	2.995	10.533	17.143	2.670	0.011	0.631	0.995
7	df	1	1	1	1	1	1	1
8	Sig.	0.083	0.001*	0.000*	0.102	0.915	0.427	0.319
9	Phi-coefficient	-0.126	-0.232	-0.293	-0.119	-0.007	0.055	-0.071
10	Sig.	0.083	0.001*	0.000*	0.103	0.915	0.428	0.320

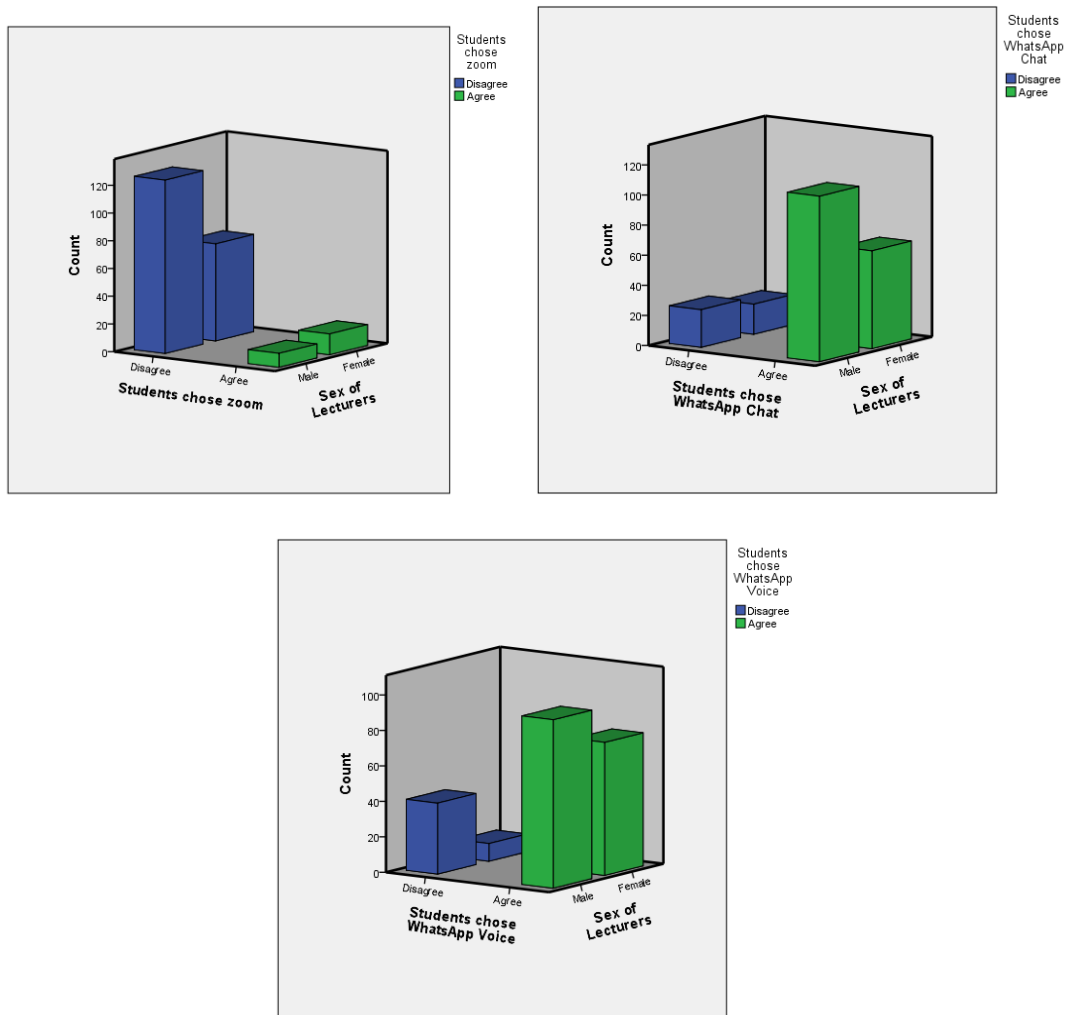N = 225, * Significant at 0.05 level

Figure 3. 3-D Clustered bar charts Showing the Influence of Gender on the Students' Choice of Online Teaching Platforms
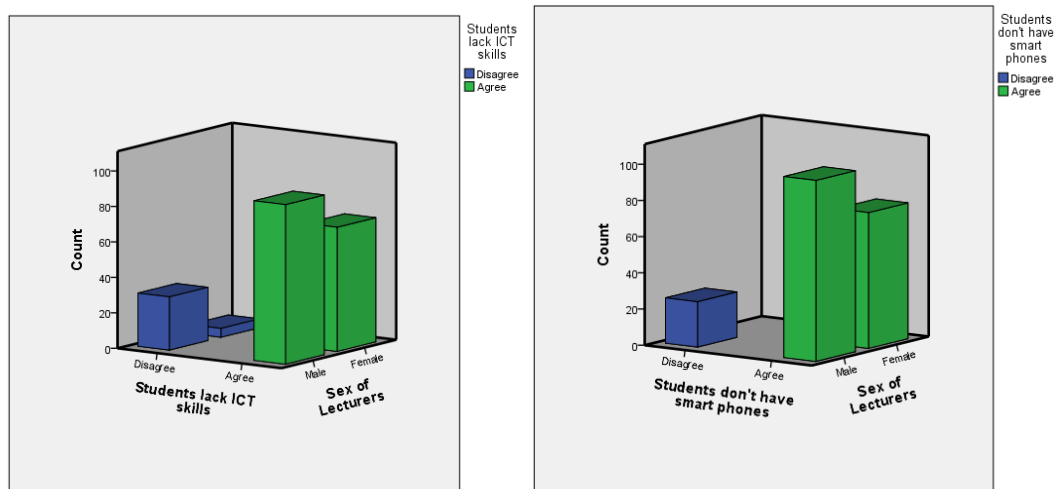
3.4 The Influence of the Gender of the Lecturers on Their Perspectives

3.4.1 Students' Choice of Online Platform

There is no difference in the directions of the perspectives of the female and male lecturers about their students' choice of online platforms except the WhatsApp video messaging (see Table 6). Although M = 1.59 > 1.53 for females while M = 1.48 < 1.54 for males, but the difference is not statistically significant (Mann-Whitney U = 5125, z = -1.540, p = 0.124 > 0.05), for the choice of WhatsApp video. The chi-square measure of association ((X^2 (1,225) = 2.383, p = 0.123 > 0.05) is not statistically significant. In the other four platforms the ratings of the females and males were statistically significant but in the same directions of observation (see Table 1).

   i. For Zoom, females' mean ratings (M = 1.18) is greater than males' mean rating (M = 1.07); U = 5150, z = -2.325, p = 0.020 < 0.05.

  ii. For WhatsApp voice, females' mean rating (M = 1.88) is greater than the males' mean rating (M = 1.70); U = 4712, z = -3.072, p = 0.002 < 0.05

 iii. For both SMS and Email, the females' mean rating (M = 1.52) is greater than the males' mean rating (M = 1.37); U = 4825, z = -2.314, p = 0.02 < 0.05

 iv. For WhatsApp chat, there is no significant difference between the females' mean rating (M = 1.76) and the males' mean rating (m = 1.81); U = 5450, z = -0.895, p = 0.370 > 0.05.

Hence the results in Table 6 showed that there is no influence of gender in the students' choice of online teaching platforms surveyed. The patterns of their choice for the male and female lecturers are like the general pattern as shown in Figure 1 and to each other as shown in Figure 3.
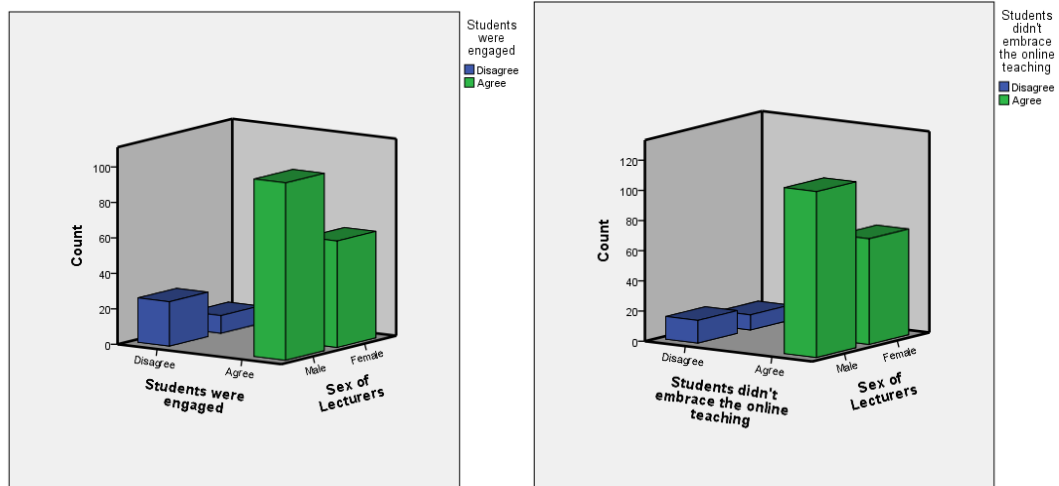
**Figure 4. 3-D Clustered bar charts Showing the Influence of Gender of Lecturers on the Students'
Factors/Experiences**

3.4.2 Students' Factors/Experiences

The higher females' mean ratings for students' lack of ICT skill (M = 1.90) and lack of possession of smart phones (M = 2.00) are significantly different from that of the males: (M = 1.80) and (M = 1.80), U = 3675, z = -3.237, p = 0.001 < 0.05; U = 3750, z = -4.130, p = 0.000 < 0.05 respectively (see Table 7). However, they are in the same direction of observation (see Table 1). The respective pairs of mean ratings for the females and males for the other factors: no data (2.00, 1.99); no network/internet access (2.00,1.96); apathy for ERT (1.88, 1.88); not prepared (1.94, 1.96) and engaged students (1.86, 1.80) are not statistically different, as shown in the following values (see Table 7).

  i.   For 'no data', U = 4025, z = -1.726, p = 0.084 > 0.05

  ii. For 'no network/internet', U = 3900, z = -1.630, p = 0.103 > 0.05

  iii. For 'not prepared', U = 5075, z = -0.795, p = 0.428 > 0.05

  iv. For 'apathy for ERT', U = 4975, z = -0.125, p = 0.915 > 0.05

  v.   For 'engaged students', U = 4125, z = -0.995, p = 0.320 > 0.05.

The results also showed that the perspectives of the lecturers about the students' factors surveyed in this study were not influenced by their gender. The clustered bar charts in Figures 1 and 3 showed that the patterns of the perspectives of the females and males (Figure 3) are like that in figure 1 for the overall sample.

Table 8. Kruskal Wallis Test and Chi-square Test of Independence for the Influence of Teaching Subjects on Students' Choice of Online Teaching Platforms

S/N	Measures	Zoom	WhatsApp chat	WhatsApp Voice	WhatsApp Video	SMS	Email
1	Mean (M) for Art/Language subjects	1.0	2.0	1.9	1.4	1.4	1.4
2	Mean (M) for Social Science /Voc. Subjects	1.2	1.9	1.8	1.5	1.4	1.4
3	Mean (M) for science subjects	1.1	1.6	1.6	1.6	1.2	1.2
4	H-Statistics	8.555	24.995	6.747	9.444	3.346	3.346
5	df	2	2	2	2	2	2
6	Sig.	0.014*	0.000*	0.034*	0.009*	0.188	0.188
7	Pearson Chi-square X^2	8.604	24.938	6.785	9.498	3.365	3.365
8	Sig.	0.014*	0.000*	0.034*	0.009*	0.186	0.186
9	Phi-coefficients	0.222	0.377	0.197	0.233	0.139	0.139
10	Sig.	0.014*	0.000*	0.034*	0.009*	0.186	0.186

N = 175, * Significant at 0.05 level

Table 9. Kruskal Wallis Test and Chi-square Tests of Independence for the Influence of Lecturers' Teaching Subjects

S/N	Measures	No Data	Lack ICT Skills	No Smartphones/Laptops	No Network/Internet Access	Apathy for ERT	Not Prepared	Engaged Students
1	Mean (M) for Art/Language subjects (N = 35)	2.00	2.00	2.00	2.00	2.00	2.00	1.90
2	Mean (M) for Social Science /Voc. Subjects (N =100)	1.90	1.90	1.80	1.90	1.80	1.90	1.90

3	Mean (M) for science subjects (N = 40)	2.00	1.60	1.90	2.00	1.90	2.00	1.7
4	H-Statistics	4.179	22.931	11.059	4.179	7.015	3.989	4.683
5	Df	2	2	2	2	2	2	2
6	Sig	0.124	0.010*	0.004*	0.124	0.030*	0.136	0.096
7	Pearson Chi-square X^2	4.208	23.090	11.143	4.208	7.059	4.104	4.714
8	Sig	0.122	0.000*	0.004*	0.122	0.029*	0.134	0.095
9	Phi-coefficients	0.170	0.299	0.273	0.170	0.210	0.154	0.177
10	Sig.	0.122	0.010*	0.004*	0.124	0.030*	0.136	0.096

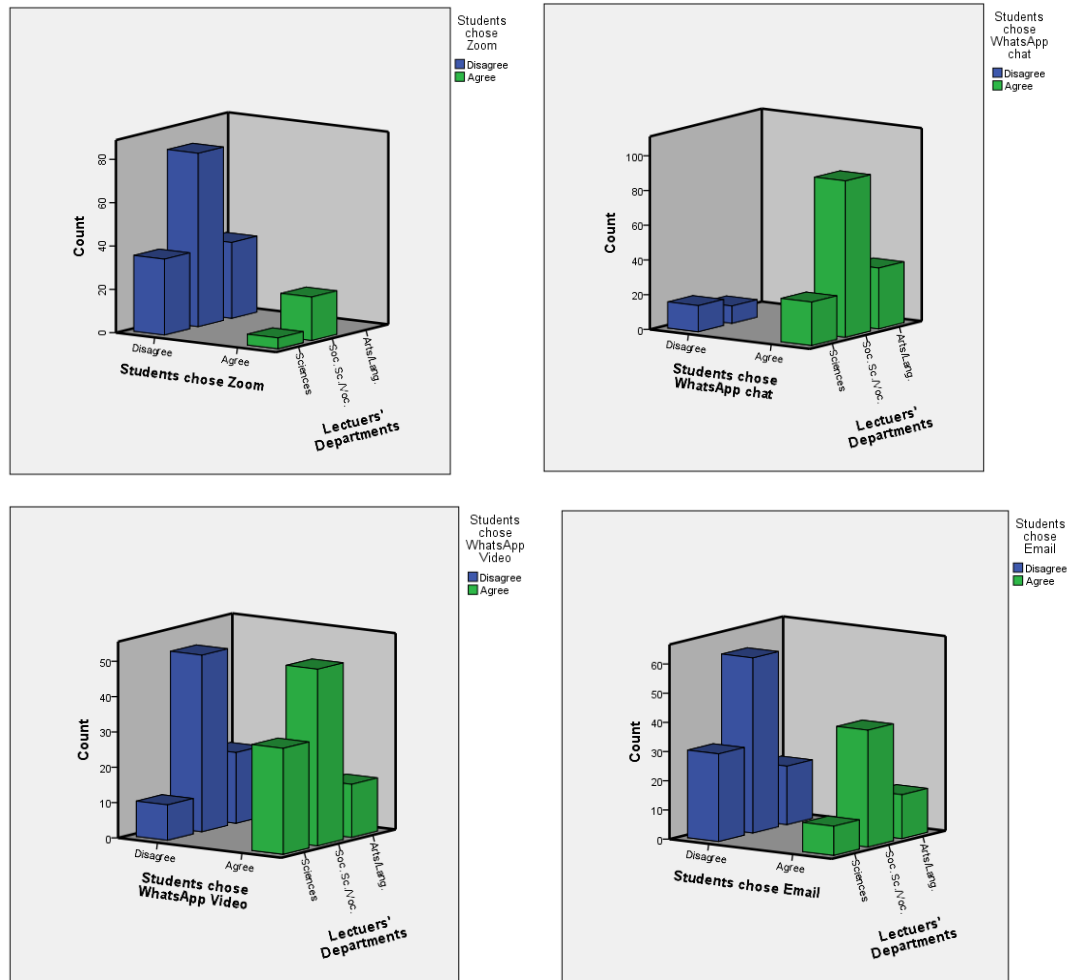N = 175, * Significant at 0.05 level.

Figure 5. 3-D clustered bar charts Showing the Influence of Lecturers' Teaching Subjects on Students' Choice of Online Platforms

3.5 The Influence of Lecturers' Teaching Subjects on Their Perspectives

3.5.1Students' Choice of Online Teaching Platform

The mean ratings of the lecturers in the three groups of their teaching subject areas are in the same direction of observation (see Table 1) except in the students' choice of WhatsApp video which had higher significant value for the Sciences (H (2) = 9.444, p = 0.009 < 0.05) as seen in Table 8. Hence the lecturers' perspective about their students' choice of WhatsApp video messaging was significantly influenced by the lecturers' teaching subject with only that of the Science teaching subjects falling into the 'observed' category, 1.60 > 1.53 (see Table 1). For the Zoom app, the WhatsApp chat and voice messaging, the significant differences obtained (H (2) = 8.555, p = 0.014 < 0.05; H (2) = 24.995, p = 0.000 < 0.05; H (2) = 6.747, p = 0.034 < 0.05) respectively indicate only the variation in the level of their perspectives within the same category: 'not observed' for Zoom; and 'observed' for chat and voice messaging. For the SMS and Email, there is no significant **Figure 6. 3-D clustered bar charts showing the influence of teaching subjects on the Lecturers' perspectives on students' factors/experiences.** difference in the lecturers' ratings across the teaching subjects (H (2) = 3.346, p = 0.186 > 0.05) in both cases. Hence, there is no influence of the lecturers teaching subject on their perspectives about their students' choice of online teaching platforms except on the WhatsApp video messaging. The patterns of their perspectives shown pictorially in figure 5 shows similarity for the various teaching subjects as it is in the overall sample in Figure 2.
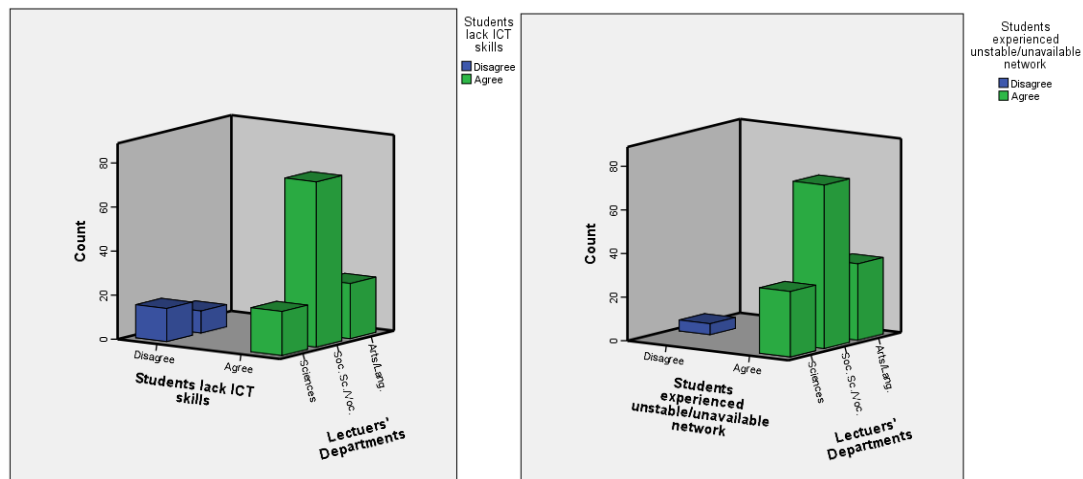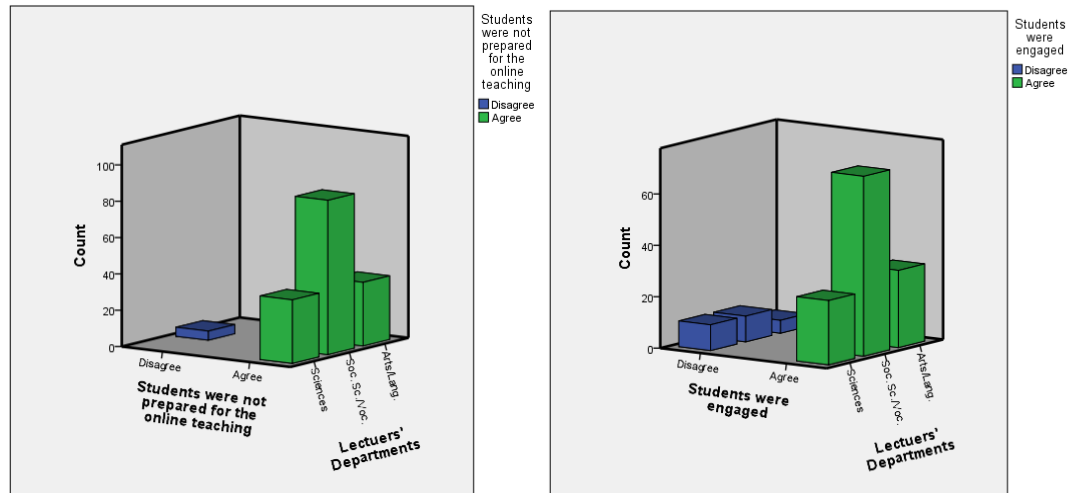
Figure 6. 3-D clustered bar charts Showing the Influence of Teaching Subjects on the Lecturers' Perspectives on Student Factors/Experiences.

3.5.2 Students' Factors/Experiences during the Online ERT

The results showed that there is significant association between the lecturers' teaching subjects and their perspectives about the students' lack of ICT skills, inability to possess smart phones/laptops and apathy for ERT (H (2) = 22.931, p = 0.000; H (2) = 11.089, p = 0.004; H (2) = 7.015, p = 0.030) respectively. However, the mean ratings are also in the same direction of 'observed' (see Tables 8 and 1). The highest level of significance (p = 0.000) was obtained for the perspective about students' lack of ICT skills which attracted the lowest rating from lecturers in the Science teaching subjects (1.6) as against (2.0 and 1.9) for the other two groups. This marked difference is also seen pictorially in figure 6 showing the differences in the patterns in the clustered bar charts. There is no significant association between the lecturers' teaching subjects and their perspectives about the students' inability to buy enough data, to access internet/network, unpreparedness for the ERT and that the ERT engaged the students (H (2) = 4.179, p = 0.124; H (2) = 4.179, p = 0.124; H (2) = 3.989, p = 0.136 and H (2) = 4.683, p = 0.096 respectively). Generally, the teaching subjects had no significant influence on the lecturers' perspectives about all the student factors/experiences except in their levels of strength of observation. The lecturers from science subjects seemed to hold perspectives on the students' lack of ICT skills less than those from other subject areas. Lecturers from the Art/Language areas seemed to hold highest perspectives about the students' factors/experiences surveyed in this study (see Figure 6 also).

4. Discussion

The results suggest that the students did not choose the Zoom app which enables synchronous online teaching. This perspective of the lecturers portrayed reality since their students have never used zoom app prior to ERT and were not prepared to use it as the lecturers were prepared (Egede, 2021). This

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result is contrary to that of Amuda and Ajani (2021) which established that the use of Zoom application for online presentation was prominent among researchers in Nigerian Library School, and that of Okeji and Alex-Nmecha (2021) which showed that Zoom was used by lecturers in the department of Library and Information Science (LIS) of some Nigerian Universities. But it corroborates those of Egielewa (2020) who found that unlike the Universities, Colleges of Education in Nigeria did not use Zoom during the lockdown, in addition to those of Abba (2021) and Olasunkanmi (2020) whose results suggest that students found the use of Zoom difficult.

WhatsApp chat and voice messaging had been in popular use in higher institutions in Nigeria prior to the COVID-19 pandemic period. Students already had WhatsApp groups in their various departments and were required to form similar groups for the various courses for the online teaching. This accounts for the popular choice of these platforms as found in this study. This result is in line with those of Iseolorunkanmi et al. (2021), that WhatsApp was used in Nigerian Universities for ERT, and the previous study (Egede, 2021) which showed that lecturers perceived that they could use it to teach online during the lockdown. SMS was not a popular choice as found in this study probably due to its shortcomings (Idegbekwe, 2019) but it was chosen by some students in addition to email, since they used them to send information to students during the lockdown. That WhatsApp video messaging was not a popular choice is real since it takes more data to watch video and students' experiences showed that they couldn't buy enough data as required by the ERT.

The findings on the students' experiences portrayed a profound reality typical of the situation with developing nations during the period (Toufique, 2021). The lecturers observed the unpreparedness of their students for the ERT with the same intensity across gender and teaching subject areas. This situation was observed in several studies concerning the ERT (Almahasees et al., 2021) but some quickly overcame it due to their already existing IT infrastructure (Zawack-Ritcher, 2020).

The results further suggest that generally, the students did not possess the required devices, such as smart phones/laptops/personal computers. Those who have them were hindered by inability to buy enough data, and unstable/unavailable internet and network access. Hence, they had apathy for the ERT due to frustrations they experienced. This finding is corroborated by those of Mayhoob, (2020) and Mok et al., (2021) from other countries, and the findings of Egielewa, (2021), Adepetu and Lawal, (2020) and Olasunkanmi, 2020 in Nigeria. This is contrary to the findings that students adjusted quickly to ERT in countries which had been teaching online prior to the pandemic and had infrastructural IT on ground (Naffi (2020), Wu (2021), OECD (2018) and Zawack-Ritcher, (2020)). Similar results were found only among the rural community students and disadvantaged groups in developed nations (Zhang & Liu, 2021; Wang & Gao, 2021; Department of Education (USA), 2021; Almazova et al., 2020). In some cases of developed nations, the students' challenge was more of inconveniences at home and loss of interactions with fellow students (Craig, 2021) as against real access to ERT experienced by students of this study. As stated earlier (OECD, 2018), these results portray the usual influence of level of technological development in achieving digital learning.

However, the results suggest that the ERT helped to engage the students during the period. There was observed sensitization that online ERT was going on, manifest interactions between students and teachers. students and students due to the ERT which maintained an atmosphere of engagement despite the challenges. The results of this study suggest also that there was no profound influence of gender on the lecturers' perspectives about the online ERT platform chosen by their students and their students' experiences. This corroborates those of Egede (2021) and further enhances the validity of the findings.

Furthermore, there is no profound influence of the lecturers' teaching subject areas on their perspectives about their students' choice of online ERT platform as in the case of gender. But in the case of students' experiences, lecturers from the core Science departments seem to be less perceptive of their students' lack of ICT skills. This is expected since the students of Computer Science Education, Physics and Mathematics who make use of computer more than those from Art and Languages cannot be observed as lacking ICT skills. This also portrays the validity of these results and indicates the necessity of using online teaching platforms in institutions which cater for the differences in the ICT-skills dispositions/potentials and courses of students. The result is in line with that of Mahyoob (2020) which showed that higher education students of English as a Foreign Language (EFL) faced more ICT technical challenges, and those of Muthuprasad (2021) and Godber and Atkins (2021), whose results showed the influence of practically oriented courses on students' experiences of ERT.

The students' choices of WhatsApp chat and voice messaging connote a leaning on material-based approach to online teaching (Rapanta et al., 2020), which requires students to access learning materials. At times, these materials were uploaded to the students in such a way that much data is required to download them, and the indigent students are put at a disadvantage. The lead author had the experience of sending money for data to a student who was very regular in participating in the online teaching and suddenly dropped-off when data demand became high. Unlike in developed nations like Israel, where the lecturers' emotions to ERT were that of success and opportunity (Meishar-Tal & Levenberge, 2021), the students' adverse experiences induced stressful and insurmountable challenges to lecturers like the ones faced by students and lecturers in the study of Peters et al. (2020). The overriding result suggests that the students did not embrace the online ERT as it wobbled, with students' and lecturers' participation declining (from experience) to the end of the period. The students came back on campus after the lockdown and the lecturers taught the courses all over again in the F2F mode.

5. Implications/Recommendations

The results of this study have implications for policymakers, researchers, educators, and all stakeholders in higher institutions. The following can be learnt from the results of this study.

1) The students were able to choose the familiar social media platforms for the online ERT which implies that they could have chosen other more effective platforms if they could use them.

- The curriculum of Colleges of Education in Nigeria (the NCE Minimum Standards) should be reviewed urgently, embedding online learning modalities in their programs, to equip students digitally.
- Colleges of Education, especially public ones, should adopt Learning Management Systems (LMS) suitable for their respective programs.

2) The students cannot engage in online learning if they don't have the required hardware devices or are unable to purchase enough data.

- It should be a requirement for every student of higher education to be supplied with these gadgets by their sponsors.

3) The usual problems in developing countries such as lack of internet/network access and stable power supply stand against the experience of successful online teaching/learning.

- Since other COVID-19 variants such as the delta and omicron are still spreading around some countries, policymakers should consider fixing these problems urgently to save the future of education in developing nations.

4) COVID-19 pandemic has sensitized all stakeholders in the education industry on the power/advantages of distance/virtual/online teaching and learning in emergency and normal situations. As many researchers have recommended, it is evident that these advantages should be harnessed in the present global technological/digital age. At least, the pandemic made all institutions to attempt using online ERT.

- Researchers should continue to study and unravel every challenge and possible solutions to successful breakthrough in online teaching/learning especially in developing countries.

6. Strength and Limitation

This paper focused on a novel topic and provided implications/recommendations which are practical and can be used to enhance online teaching/learning experiences in developing countries like Nigeria. The authors, as participants in the ERT understood the environment which enhanced data collection procedures. A major limitation is that only one public higher institution of the category of Colleges of Education was used, and this limits generalization. However, many of such studies of individual institutions could provide a comprehensive collection of evidence of the experiences of the ERT during the COVID-19 lockdown for wider generalization of results.

7. Conclusion

As the global community seeks to harness the lessons learnt from the online Emergency Remote Teaching (ERT) during the COVID-19 pandemic lockdown to strengthen the education system, studies such as this one can provide empirical evidence of guidelines to be used. This study has provided empirical evidence of the experience of the lecturers in College of Education, Agbor in the online ERT

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in terms of the online teaching platforms chosen by students and their experiences. Although the online ERT provided the required engagement of students in academic activities, it failed to deliver a successful learning experience due to the challenges which were unmet. The results of this study corroborate those of other studies which suggest that the development of students' digital competence and provision of appropriate digital infrastructure in the environments and institutions are the sine qua non for building a resilient education system from the lessons learnt from ERT in this study's environment and in developing nations.

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