

# Innovations

## Alternative Learning Strategies and Effectiveness of Tertiary Institutions During Covid-19 Pandemic in Kwara State, Nigeria

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### Abstract

*The outbreak of COVID-19 in 2020 brings about disruption of academic calendar because of the suspensions placed on schools across the states in the country. In order to bridge the learning gap and prevent further disruption in the academic activities, alternative learning strategies which are digital in nature was introduced. Thus, the study examined alternative learning strategies and effectiveness of tertiary institutions during COVID-19 pandemic in Kwara State, Nigeria. The study was guided by five research objectives. Employing descriptive survey design, the study analysed data gathered from 744 students from University of Ilorin and Kwara State College of Education, Kwara State Nigeria. Multi-stage sampling technique was used to select the respondents for this study. The findings of the study among others revealed that the major challenge of alternative learning strategies adoption was the high running of data and subscription cost; the level of effectiveness of tertiary institutions in Kwara State was high; and there was a significant relationship between alternative learning strategies and the effectiveness of tertiary institutions during COVID-19 pandemic in Kwara State, Nigeria.*

**Keywords:** *Learning strategies; Alternative learning strategies; Effectiveness; Learning technology; COVID-19 Pandemic.*

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## Introduction

The corona virus (COVID-19) is a large family of viruses widely known to cause critical illnesses ranging from the common cold to acute respiratory tract infection. The result of the infection may manifest as pneumonia, acute respiratory syndrome, and even death. Not until the outbreak of SARS, this group of viruses was greatly overlooked. However, since the outbreak of SARS and MERS, these groups of viruses have been given serious examinations and are studied in greater detail, propelling the vaccine research. The World Health Organization (WHO), in December 2019, received reports of pneumonia cases of unknown causes in Wuhan City, Hubei Province of China. The Chinese authorities subsequently identified a novel strain of Corona virus (SARS-COV 2) as a causative agent. In Nigeria, the first case of corona virus was confirmed in Lagos State on 27th February 2020. This index case was related to an Italian 44-year-old man who just returned from Milan, Italy, on 24 February and presented at a health facility on 26th February 2020 (Isiaka, 2021). Following the confirmation of the case, 216 people were identified as contacts to be followed up. Of these, 45 travelled out of Nigeria and one of the remaining 176 contacts was confirmed to be positive for COVID-19 on 9th March, 2020. The country has continued to experience an increase in the number of cases, which has spread across several states in the country. While most of the initial cases were imported, most of them have no travel history or contact with such people. After Nigeria witnessed her first case, it was pertinent and important for the Nigerian government to take very drastic steps to give quick attention to the situation as other countries have positively done to prevent the continuous spread of the virus. The closure of institutions by the Federal and State governments across the country was one of the known urgent measures taken by the Nigerian Government as preventive decisions on COVID-19 just after WHO recognized it as a pandemic disease which brought about the shutdown of Universities in Kwara state.

Unlike many anticipated situations, the COVID-19 outbreak around the world caught a lot of people unaware which resulted in disruption of activities in the education sector. It is on record that many of the developed nations were able to quickly adjust to the pandemic by aligning their activities virtually. However, developing nations could not adjust as quickly as other developed European countries. This is well supported by the observations of Yinka and Adedayo (2020) that in low and medium countries, the effect of COVID-19 is very threatening to education because the education system has been operating on a sub-standard platform. It was also noted that many schools had limited resources, with overcrowded classrooms ( Zar, Dawa,

Fischer & Castro-Rodriguez, 2020) which impeded a safe learning environment for the students.

To reduce the spread of this deadly virus, governments around the world declared a state of emergency leading to the shutting down of public institutions including educational institutions (UNESCO, 2020). The closure of institutions and other learning spaces has brought about significant disruption to education across the world and this has brought about changes in all aspects of people's life. Social distancing and restrictive movement policies have significantly disturbed traditional educational practices. The reopening of schools after the relaxation of the restriction is another challenge with many new standard operating procedures put in place. Within a short span of the COVID-19 pandemic, many researchers have shared their works on alternative ways of teaching and learning. Universities, Polytechnic, and Colleges of Education discontinued face-to-face teachings geared by the fear of losing the 2020 academic year or even more in the coming future. The need of the hour is to innovate and implement alternative educational systems and assessment strategies.

Earlier before the pandemic, scholars have advanced the incorporation of digital technology in the various facets of human endeavours because of its various advantages. For instance, Mark and Sermaan (2008) emphasized that changes that took place in human endeavour necessitated the adoption of new technology for interaction and work. The adoption of new technology in education is the alternative learning strategies that facilitate effective teaching and learning which is different from the traditional method of physical face-to-face that occurred between teachers and students. These alternative learning strategies became important and were suggested to bridge the learning gap and stop further disruption in the academic calendar of institutions across the country and Kwara State specifically during COVID-19 when teachers and students were forced to stay at home. In support of the above, Ojo, Atolagbe, Olajuwon, and Awodiji (2021) noted that the COVID-19 pandemic has created a disruptive situation in education including disruption in the schools' calendar and the only notable remedy to the crisis is the use of technology for instructional purposes.

Alternative learning strategies which in most cases are in digital form involve learners and instructors applying digital media to learning. According to Ojo et al. (2021), it includes internet networks, computers; satellite broadcasting, audio tapes, application of network-based learning, computer-based learning, virtual classrooms, and digital cooperation. E-learning refers to online learning which

includes the use of electronic technology to transmit educational information or skills to monitor learners' performance and progress using electronic applications (Hromalik & Koszalka, 2018). In Kwara State tertiary institutions, the COVID-19 pandemic brought the opportunity for the introduction of learning alternatives (digital learning) as it is observed by the researchers that it is at this point that these digital platforms were seen as widely adopted by lecturers. Some of the platforms observed that is adopted by some of the lecturers in tertiary institutions include Zoom Applications, and Google Classroom among others.

**Table 1: Sample Frame**

S/N	Institution	Population	Sample
1	University of Ilorin	45885	381
2	Kwara State College of Education	7332	365

**Methods of Data Collection and Research Instruments**

A researcher-designed questionnaire titled Alternative Learning Strategy Questionnaire (ALSQ) and Effectiveness of Tertiary Institution Questionnaires (ETIQ) was used to obtain data from the students. The questionnaires are divided into two sections, A and B, for respondents' personal data and items on the variables, respectively. The questionnaire is in the likert form of Always (5), Often (4), Sometimes (3), Rarely (2), and Never (1). To ascertain the validity of the questionnaires, three copies were given to experts in the Department of Educational Management, and four were given to experts in the Department of Research, Measurement, and Evaluation to check for the validity of the questionnaires. The retrieved questionnaires were adjusted according to the experts' recommendations and were further administered to 18 students to check for the clarity and relevance of the items. SCVI indexes of 0.91 and 0.88 were generated for (ALSQ) and (ETIQ), which deemed the two questionnaires to be valid. To check the reliability of the questionnaires, they were administered to 15 students of tertiary institutions in the state who did not form part of the respondents to this study. The retrieved questionnaires were subjected to analysis using the Statistical Package for Social Sciences (SPSS). The Cronbach alpha measure of internal consistency was used to test the reliability of the questionnaires, with coefficients of 0.81 and 0.92 for the ALSQ and the ETIQ, respectively, which showed that the two instruments were reliable. The researchers, along with the other three trained researchers, visited the institutions of the respondents to administer the questionnaires.

**Data Analysis Methods:**

Descriptive statistics of frequency, percentages, mean scores, and Pearson-product-moment correlation were used to address all the research objectives in this study. Statistical Package for Social Science (SPSS) was used for the analysis, and the hypothesis tested was at the 0.05 level of significance.

**Findings:**

Out of 746 questionnaires administered, 744 were recovered, which indicates an approximately 99.7% recovery rate. These 744 were subjected to relevant screening, which includes testing for outliers and normality of the data, among others. The data was then subjected to analysis using the Statistical Package of Social Sciences (SPSS) using both descriptive and inferential statistics.

**Findings for Objective 1:**

This objective is to find out the different alternative learning strategies adopted by tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria.

**Table 2:** Alternative learning strategies adopted by tertiary institution during Covid-19 pandemic

SN	ITEMS	Always	Often	Sometimes	Rarely	Never	Mean
1.	Computer managed instruction	269 (36.2%)	207 (27.8%)	170 (22.8%)	66 (8.9%)	32 (4.3%)	3.83
2.	Watching online demo videos (tactile learning)	118 (15.9%)	299 (40.2%)	205 (27.6%)	101 (13.6%)	21 (2.8%)	3.53
3.	Internet video conferencing	124 (16.6%)	209 (28.1%)	276 (37.1%)	95 (12.8%)	40 (5.4%)	3.38
4.	Interactive video discs	104 (14.0%)	247 (33.2%)	233 (31.3%)	117 (15.7%)	42 (5.6%)	3.34

5.	Teleconferencing	150 (20.2%) )	224 (30.1%)	223 (30.0%)	116 (15.6%)	31 (4.2%) )	3.47
6.	Correspondence from using electronic mails (Gmail, Yahoo mail)	190 (25.5%) )	226 (30.4%)	234 (31.5%)	76 (10.2%)	18 (2.4%) )	3.66
	<b>Grand Average Score</b>						3.54

**KEY: Low:** 1.00-2.30; **Average:** 2.31-3.60; **High:** 3.61-5.00

Table 2 above revealed students’ opinions on the different alternative learning strategies adopted by tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria. From the table above, the grand mean score (3.54) revealed that alternative learning strategies were averagely adopted during the COVID-19 pandemic in universities in Kwara State, Nigeria. The result indicated that only items 1 and 6, with mean scores of 3.83 and 3.66, respectively, were rated above 3.60 of the acceptable mean score of high adoption, showing that the students agreed that these strategies are highly adopted in the institutions.

**Findings for Objective 2**

This objective is to determine the learning technology used during the COVID-19 pandemic period in Kwara State, Nigeria.

**Table 3:** Learning technology used during COVID-19 pandemic period

SN	ITEMS	Always	Often	Sometimes	Rarely	Never	Mean
1.	Zoom	244 (32.8%) )	183 (24.6%)	186 (25.0%)	89 (12.0%)	42 (5.6%) )	3.67
2.	Google Meet	141 (19.0%) )	270 (36.3%)	223 (30.0%)	86 (11.6%)	20 (2.7%) )	3.58
3.	Google classroom	202 (27.2%)	210	223	87	19 (2.6%)	3.66

		)	(28.2%)	(30.0%)	(11.7%)	)	
4.	Moodle LMS	178 (23.9%) )	169 (22.7%)	243 (32.7%)	94(12.6 %)	54 (7.3% )	3.44
5.	WhatsApp	233 (31.3% )	216 (29.0%)	207 (27.8%)	78 (10.5%)	8 (1.1% )	3.79
6.	Telegram	199 (26.7% )	209 (28.1%)	237 (31.9%)	76 (10.2%)	20 (2.7% )	3.66
	<b>Grand Average Score</b>						3.63

**KEY: Low:** 1.00-2.30; **Average:** 2.31-3.60; **High:** 3.61-5.00

Table 3 above revealed students' opinion on the different learning technologies adopted by tertiary institution during COVID-19 pandemic in Kwara State, Nigeria. From the table above, the grand mean score (3.63) revealed that learning technologies were highly used during COVID-19 pandemic in universities in Kwara State, Nigeria. The result indicated that items 1, 3, 5 and item 6 with mean scores of 3.67, 3.66, 3.79 and 3.66 respectively were rated above 3.60 of the acceptable mean score of high usage showing that the students agreed that these technologies are highly adopted in the institutions. The other items 2 and 4 with means scores of 3.58 and 3.44 were rated between 2.31 and 3.60 which is acceptable mean for average usage. This indicates these technologies are moderately used in the institutions in the Kwara State.

**Findings for Objective 3**

This objective is to ascertain the challenges faced by students and institutions during COVID-19 pandemic in Kwara State, Nigeria;

**Table 4: Challenges faced by students and institutions during COVID-19 pandemic**

SN	ITEMS	Always	Often	Sometimes	Rarely	Never	Mean
1.	ICT Equipment availability	162 (21.8%)	138 (18.6%)	319 (43.0%)	76 (10.6%)	46 (6.2%)	3.39
2.	Course content overload to students	128 (17.2%)	195 (26.2%)	320 (43.0%)	86 (11.6%)	15 (2.0%)	3.45
3.	It increases social isolation among student and teachers	149 (20.0%)	165 (22.2%)	330 (44.4%)	75 (10.1%)	25 (3.4%)	3.46
4.	It increases lack of communication skills in students	140 (18.8%)	183 (24.6%)	308 (41.4%)	93 (12.5%)	20 (2.7%)	3.45
5.	Lack of technical know-how of ICT equipment by lecturers	128 (17.2%)	170 (22.8%)	335 (45.1%)	81 (10.9%)	30 (4.0%)	3.38
6.	Poor network connection and low bandwidth	160 (21.5%)	193 (25.9%)	311 (41.8%)	67 (9.0%)	13 (1.7%)	3.56
7.	Cost of technological gadgets for learning	172 (23.1%)	195 (26.2%)	298 (40.1%)	64 (8.6%)	15 (2.0%)	3.60
8.	High running of data and subscription cost	224 (30.1%)	169 (22.7%)	286 (38.4%)	54 (7.3%)	11 (1.5%)	3.72
9.	Loss of connection during online learning	177 (23.8%)	185 (24.9%)	319 (42.9%)	51 (6.9%)	12 (1.6%)	3.62
	<b>Grand Average Score</b>						<b>3.51</b>

**KEY: Low:** 1.00-2.30;

**Average:** 2.31-3.60;

**High:** 3.61-5.00



Table 4 above reveals students' opinions on the challenges faced by students and institutions during the COVID-19 pandemic in Kwara State, Nigeria. From the table above, the grand mean score (3.51) revealed that the challenges faced by students during COVID-19 are moderate. The result indicated that the major challenge of alternative learning strategies was the high running of data and subscription costs, with the highest mean score of 3.72, and the least challenge faced was the lack of technical know-how of ICT equipment by lecturers, with a mean score of 3.38.

**Findings for Objective 4**

This objective is to determine the effectiveness of tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria.

**Table 5:**Effectiveness of tertiary institutions during COVID-19 pandemic

S/ N	Variables	N	X	SD	Decision
1.	Effectiveness of tertiary institutions	744	3.63	0.542	High

**KEY: Low:** 1.00-2.30; **Average:** 2.31-3.60; **High:** 3.61-5.00

Table 5 above revealed the level of effectiveness of tertiary institutions in Kwara State to be high, with a mean score of 3.63.

**Findings for Objective 5**

This objective is to examine the relationship between alternative learning strategies and the effectiveness of tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria.

**Table 6:** Alternative learning strategies and effectiveness of tertiary institutions during COVID-19 pandemic in Kwara State, Nigeria

Variable	N	X	SD	r-value	p-value	Decision
Alternative learning strategies	744	3.54	0.18			
				.550	.000	Rejected
Effectiveness of tertiary institutions	744	3.63	0.542			

**Significant @ $p < .05$**

Table 6 shows the calculated r-value (.550), while the p-value (.000) is less than the 0.05 significance level. Hence, the null hypothesis is rejected. This shows that there was a significant relationship between alternative learning strategies and the effectiveness of tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria.

**Discussion of Findings**

Table 2 above revealed students’ opinions on the different alternative learning strategies adopted by tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria. From the analysis, the grand mean score (3.54) revealed that alternative learning strategies were averagely adopted during the COVID-19 pandemic in universities in Kwara State, Nigeria. The result indicated that only items 1 and 6, with mean scores of 3.83 and 3.66, respectively, were rated above 3.60 of the acceptable mean score of high adoption, showing that the students agreed that these strategies are highly adopted in the institutions. All the other items 2, 3, 4, and 5 with means scores of 3.53, 3.38, 3.34, and 3.47 were rated between 2.31 and 3.60, which is an acceptable mean for average performance. This indicates these strategies are averagely adopted in the institutions in Kwara State. Although the findings showed that watching online demo videos, internet video conferencing, interactive video discs, and teleconferencing were adopted strategies, these strategies were averagely adopted, and efforts need to be made to ascertain the

reason for this situation among the faculty members in order to identify how best they can be assisted, and these areas can be further explored.

Table 3 above revealed students' opinions on the different learning technologies adopted by tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria. From Table 3 above, the grand mean score (3.63) revealed that learning technologies were highly used during the COVID-19 pandemic in universities in Kwara State, Nigeria. The result indicated that items 1, 3, 5, and 6 with mean scores of 3.67, 3.66, 3.79, and 3.66, respectively, were rated above 3.60 of the acceptable mean score of high usage, showing that the students agreed that these technologies are highly adopted in the institutions. The other items 2 and 4, with means scores of 3.58 and 3.44, were rated between 2.31 and 3.60, which is an acceptable mean for average usage. This indicated that these technologies were moderately utilized in the institutions in Kwara State during the COVID-19 pandemic. The findings showed that Google Meet and Moodle LMS were averagely adopted, as they are the least adopted technologies according to their corresponding mean scores reported. This may be a function of a lack of expertise by faculty members in these areas or constrained by other factors, which simply indicate there are necessary efforts to be exerted in these areas for further development in the use of these technologies. The findings agree with those of Osuh (2023), who revealed that students' admitted that the COVID-19 pandemic affected their general learning, and most of them found online communication with teachers through chat boxes to be more effective.

Table 4 above revealed students' opinions on the challenges faced by students and institutions during the COVID-19 pandemic in Kwara State, Nigeria. From the table above, the grand mean score (3.51) revealed that the challenges faced by students during COVID-19 are moderate. The result indicated that the major challenges of alternative learning strategies were the high running costs of data and subscription costs, with the highest mean score of 3.72, and the least challenge faced was the lack of technical know-how of ICT equipment by lecturers, with a mean score of 3.38. Although all the results, as revealed in Table 4, showed that all the items of challenges highlighted are being faced by the students in the school, they are moderate. Next to the high cost of running data is loss of connection during online learning, with a mean score of 3.62, followed by the cost of technological gadgets for learning, with a mean score of 3.60. The findings revealed that students find subscribing to the internet more challenging than the cost of procurement itself in the institutions in Kwara State during the COVID-19 pandemic. The findings of this study are in line with the results of Obeidat, Obeidat, and Al-Shalabi (2020), which

revealed that students challenges are mostly technical issues such as a lack of a viable internet network, and lack of a laptop etc.

Table 5 above revealed the level of effectiveness of tertiary institutions in Kwara State during the COVID-19 pandemic to be high, with a mean score of 3.63. The findings showed that the level of effectiveness in terms of instructional activities between the lecturer and students was very productive. The outcome disagrees with the findings of Isiaka (2021), which showed that there was a mass failure in 2020 and a significant difference in the academic performance of students' results in mathematics at WASSCE during COVID-19 and the years 2018 and 2019. This situation may be a result of the fact that the students at the secondary school level are less accustomed to digital learning than the students at the tertiary institution of learning. It can also be a result of mathematics as a subject that people most often prefer physical contact as it requires a lot of calculations, which they use with a step-by-step physical approach. The result of the study was also in line with the outcome of Obeidat, Obeidat, and Al-Shalabi (2020), which showed a positive learning experience among the students in the use of e-learning during COVID-19.

. Table 6 shows the calculated r-value (.550), while the p-value (.000) is less than the 0.05 significance level. Hence, the null hypothesis is rejected. This shows that there was a significant relationship between alternative learning strategies and the effectiveness of tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria. The relationship is positive, which implies that the higher the effectiveness of alternative learning strategies, the higher the effectiveness of tertiary institutions, and vice versa. Although the r-value reported is positive, the coefficient is moderate, which is neither high nor low. This implies that the more effort exerted to make alternative learning strategies better, the greater the effectiveness of tertiary institutions will be. The outcome is in line with the result of Ojo et al. (2021), which showed that a significant positive relationship exists between digital learning applications and learning effectiveness in private universities. The findings were also in line with the findings of Ahmed (2023), who showed that there is no significant variation in the perceived influence of digital learning on educational achievement in biology among senior secondary school students.

## **Conclusion**

The COVID-19 outbreak in 2019 brought about the disruption of the academic calendar as suspensions were placed on schools across the states in the country. In order to bridge the learning gap and prevent further disruption in academic

activities, there is a need for the introduction of alternative learning strategies that are digital in nature. The discontinuation of traditional (face-to-face) practices may, however, affect the effectiveness of tertiary institutions. Thus, the study examined alternative learning strategies and the effectiveness of tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria. The study concluded that there is a significant positive relationship between alternative learning strategies and the effectiveness of tertiary institutions during the COVID-19 pandemic in Kwara State, Nigeria. Also, high running costs of data and subscription costs are the major challenges to the adoption of alternative learning strategies; computer-managed instruction is the most commonly adopted alternative learning strategy, and the learning technology most commonly adopted is WhatsApp.

### Recommendations

1. Internet video conferencing, teleconferencing, and interactive video discs should be advised among the faculty members.
2. The use of Google Meet and Moodle LMS, like other learning technologies, should be encouraged among faculty members for instructional purposes.
3. The school administrators should consider subsidizing the running of data and subscription costs through the provision of functional WIFI within the institution as well as partnering with a network provider to offer a reasonable price to the staff and students so they can access cheaper data to further reduce the cost on the part of the students and faculty members.

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