



## TEACHERS' EFFECTIVENESS IN "ON-AIR" AND "ONLINE" TEACHING IN SECONDARY SCHOOLS IN ANAMBRA STATE, NIGERIA DURING THE COVID-19 PANDEMIC

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### **Abstract:**

The study investigated teachers' effectiveness in "on air" and "online" teaching and learning in secondary schools in Anambra state during COVID-19 pandemic. Two research questions and one null hypothesis guided the study. Descriptive survey design was adopted for the study and the population of the study comprised all the 261 principals and 5827 teachers in Anambra state. All the principals participated in the study while 14% of teachers which is 812 teachers were purposively sampled, giving a total of 1073 respondents. The instrument for data collection was a self-structured questionnaire titled "Teachers' Effectiveness in "On-Air" and Online Teaching Questionnaire" (TEOOTQ). The instrument was validated by three experts, two from education management unit, one from measurement and evaluation unit in the faculty of education, Chukwuemeka Odumegwu Ojukwu University, Anambra state. to ascertain the internal consistency of the instrument, Cronbach Alpha was used to compute the reliability estimate of the items and the reliability index was 0.85. The research questions were answered using mean and standard deviation while t-test was used to test the hypothesis. The findings of the study revealed among others that teachers' effectiveness in on- Air and online teaching was to a low extent. Furthermore, some challenges that hinder teachers' effectiveness in on-air' and online'' teaching and learning in Anambra state during COVID-19 pandemic were identified. The author recommends among others that the state government in collaboration with the ministry of basic education should organize periodic seminars, conferences and trainings on ICT programs for teachers. There should be adequate financial commitment by the government towards the effective implementation of these programs.

**Keywords:** COVID-19, teachers' effectiveness, teaching on-air, online teaching

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## 1. Introduction

Corona virus disease COVID-19 is a new disease that is highly contagious and is caused by a Novel Virus known as Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-COV-2), (Shereen and Siddique 2020). Patients with 2019-nCoV infection, are presently with a wide range of symptoms, most seem to have mild disease, and about 20% appear to progress to severe disease, including pneumonia, respiratory failure and in some cases death, (WHO, 2020). This creates fear and panic in people. It originated from Wuhan in China in November 2019 and has spread to almost all the countries in the world, (Maffioli 2020). It spreads to a lot of countries within a short period showing how contagious it is. This was stated by Callaway (2020) when he stated that the spread of the disease was so serious that in March 11, 2020 World Health Organization declared COVID-19 a pandemic having met epidemiological criteria of having infected 100, 000 people in at least 100 countries. In no distance time Egypt in Africa had its first index case on 14<sup>th</sup> February 2020 but it was only on 27<sup>th</sup> February 2020 that the first case was reported in Nigeria after an Italian businessman was diagnosed with the deadly virus (Hussian, 2020). Since it came into Nigeria, the cases have been rising and as at the date of this write up, it has spread to 35 states of the federation and the Federal Capital Territory with Lagos, FCT and Oyo recording the highest cases with 10,823, 2,020 and 1,432 respectively, with the over-all total number of cases in Nigeria rising to 27,110 (NCDC, 2020). Anambra state as one of the states in Nigeria was not left out in the spread of the disease. The index case in the state was recorded on 11<sup>th</sup> April 2020, since then it has been rising (Bolashadun, 2020). Since then, it has been rising and creating tension on the citizens. Presently, Anambra state has 73 cases (NCDC, 2020). For the Nigerian Government to contain the spread of this disease, it announced the temporary shut-down of all the schools in the federation with the effective date of 23<sup>rd</sup> March 2020 (Hussian, 2020). Since schools have not resumed, the education sector is being affected drastically as Nigeria has not been practicing "on air" or "online" learning at secondary education level before. For Anambra State to reduce the effect of the closure of schools on their students, it collaborated with Anambra Broadcasting Service (ABS) to introduce "Anambra teaching-on-air" which also involves "online" teaching.

Online teaching and learning is education that takes place over the internet (Stern 2020). It is a teaching and learning that takes place through the internet, computer, phone, CD-Rom, ipods, MP3 players and can be taken anywhere at any time. It is very useful for education especially for higher learning because it can be accessed globally. Working class people and those unable to access normal traditional education usually opt for it. It is also called e-learning because it takes place electronically and across distance and not in a normal classroom setting. "On air" teaching is done either through radio or television broadcast. Stern (2020) stated that it is one of the types of distance learning when he tagged it "telecourse". Anambra state ministry of basic education recruited some teachers with the help of school principals to teach core subjects like Mathematics, English, Physics, Chemistry, Igbo, Biology, Economics, Government, Literature in English and

Civic Education through the state owned Anambra Broadcasting Service radio and television (Elekwa, 2020). Weekly time table was provided and the program started on the 1<sup>st</sup> of April 2020. The teaching process involves "life view" of the teaching in radio or television which includes teaching and phone-in program by students who ask questions on the topics. Thereafter, the teacher gives assignments to the students who submit them through WhatsApp or teachers email for marking. Students unable to follow the live teaching have the opportunity to log into you-tube and retrieve previous programmes, Oscar (2020) quoted the Anambra state commissioner for Basic Education, Prof. Kate Omenugha as stating that the "teaching-on-air" and "online" teaching will stand in gap for normal classroom situations truncated by the COVID-19 induced closure of schools in Anambra state. The programme was also instituted to help reduce the spread of COVID\_19 pandemic because most students are at home during the period of the pandemic. To achieve this, principals helped in identifying teachers capable of handling the "on-air" and "online" teaching effectively in the selected subjects.

Teacher effectiveness is the impact the classroom factors have on the student performance and includes teacher behavior, teacher expectations, classroom organization and use of classroom resources (Stronge and Xu, 2015). Teacher effectiveness is the extent of the positive effect the teacher has on the students' performance, the teaching process and the teacher/student communication. It is very important in teaching because the major contributor in learning improvement and students' performance is the teacher. Therefore, it is necessary to identify competent, qualified and experienced teachers in different subjects. Stronge (2007) sees the four dimensions that characterize teacher effectiveness as – personal quality of the teacher, good learning environment, effective instructional materials and good students' assessment. For a teacher to be effective, these four dimensions must reflect in his or her teaching whether online, on-air or normal classroom learning. Hartie and Timperley (2007) noted that effective teachers monitor students learning through the use of a variety of information and formal assessments and offer meaningful feedback to the students. That translates into giving students enough assignment and immediate feedback which will help both the teacher and students in assessing themselves. Feedback is also extremely important in teaching as it encourages students to think critically about their work and it also helps in promoting dialogue between teacher and students. Effective teachers also maximize their instructional time and make use of it very well (Stronge, 2011). This indicates that for teacher to be effective in teaching, he or she must be conscious of time, plan his or her lesson in such a way that time created for the subject will be used effectively without the teacher rushing the lesson, in effect, the teacher should have good time management strategy. This will lead to efficient planning of the lesson for coherent and timely delivery. Emmer, Everton and Worsham (2003) observed that an effective teacher nurtures a positive climate. This attribute contributes in making the students more comfortable and allows better assimilation with less distraction. Effective communication and good relationship between the teacher and students is another way of identifying an effective teacher. Good communication flow is very essential as it makes the teacher to determine academic level

of the students and know where to emphasize more in the teaching. This was emphasized by Aina (2013) when she faulted lack of adequate interaction between teacher and students as one of the reasons students do not perform well academically.

These qualities of teacher effectiveness should be seen in every aspect of teaching and learning, all geared towards quality delivery. Anambra state "on-air" and "online" teaching presently anchors on utilization of radio, television and cell phones. It is on this background that the researcher intends to investigate teachers' effectiveness in "on-air" and "online" teaching of secondary school students in Anambra state during COVID-19 pandemic.

## **2. Statement of problem**

"On-Air" and "online" teaching were established by Anambra state government to reduce the rate of COVID-19 spread; it was also instituted to help stand in the gap for normal classroom situations truncated by the COVID-19 pandemic. This will help prepare the students for external examinations like West African Examination Council and National Examination Council. However, this on-air and online teaching seem not to have expected impact on the students as most students are losing interest in the program. Some of the challenges that may hinder these programs include; limited time allocation for the teaching, poor electricity supply, data affordability and turnaround time for submission and grading of assignment. It is in view of this that this study intends to investigate teachers' effectiveness in "on-air" and "online" teaching of secondary school students in Anambra state during COVID-19 pandemic.

### **2.1 Purpose of the study**

The purpose of this study was to investigate the teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic. Specifically, the study sought to:

- 1) Assess the extent of teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic.
- 2) Determine the challenges that hinder teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic.

### **2.2 Research questions**

The following research questions guided the study.

- 1) To what extent are teachers' effective in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic?
- 2) What are the challenges that hinder teachers' effectiveness in "on-air" and "online" teaching in Anambra state secondary schools during COVID-19 pandemic?

### 2.3 Hypothesis

One hypothesis was formulated for the study and was tested at .05 level of significance.

**Ho1:** there is no significant difference between the mean ratings of principals and teachers on the extent of teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic.

### 3. Methodology

The study adopted descriptive survey design. The study was carried out in Anambra state, Nigeria. The population of the study was 261 principals and 5, 827 teachers in 261 secondary schools in Anambra state (Planning, Research and Statistics Department, Post Primary School Commission Headquarters, Awka, 2020). Anambra state has six education zones which are Onitsha, Awka, Otuocha, Aguata, Ogidi and Nnewi education zones. All the principals were used because of their size. The researcher purposively sampled 14% of teachers which was 812 teachers for the study. This shows that the study was made up of 1073 respondents. The percentage rate is in line with Uzoagulu (2011) who state that if the population for the study is known and it is made up of different groups each group receives allocation based on its proportion to the population. Proportionate stratified sampling technique was adopted to select 174 teachers each from Onitsha and Awka education zones and 116 teachers each from Otuocha, Nnewi, Ogidi and Aguata education zones. Proportionate stratified sampling was utilized because the population in the zones are not equal. Teachers and principals were considered for the study based on their established experience and long duration of teaching.

The instrument for data collection was a researcher structured questionnaire titled "Teachers Effectiveness in On-Air and Online Teaching Questionnaire" (TEOOTQ). This instrument consisted of two sections, section A and B. Section A was on personal data of the respondents while section B elicited information on the two research questions. Three experts validated the instrument, two experts from education management unit and one expert from measurement and evaluation unit, faculty of Education from Chukwuemeka Odumegwu Ojukwu University, Igbariam. The rating scale consisted of Very High Extent (VHE)/Strongly Agreed (SA)=4 points, High Extent (HE)/Agree (A) = 3 points, Low Extent (LE)/Disagree (D) = 2 points and Very Low Extent (VLE)/Strongly Disagree (SD) = 1 point. The instrument was trial tested in Enugu state on 5 principals 20 teachers to ascertain its reliability. The choice of Enugu state was made because they also practice on-air and online teaching for secondary school students. The reliability coefficient of the instrument was determined using Cronbach Alpha method with over all reliability index of 0.85. The researcher administered the instrument with the help of five research assistants who were instructed on what to do. Finally, total of 1010 instruments were collected and used for the study, which is 94% return rate. The data were analyzed by using mean and standard deviation to respond to the research questions while null hypothesis was tested using t-test statistics.

The decision rule for the research questions was that, any mean score which is greater than or equal to 2.50 was agreed on or high extent while any mean score less than 2.50 was disagreed on or low extent. While hypothesis would be rejected when the t-calculated value is less than the t-tabulated, but rejected when the t-calculated value is greater than the t-tabulated.

#### 4. Result

**Table 1:** Mean rating of principals and teachers on the extent of teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic

S/N	To what extent are teachers effective in "on air" and "online" teaching?	Principals (N = 247)		Teachers (N = 763)		Decision
		X	SD	X	SD	
1	Effective communication between teacher and students.	2.15	0.99	2.13	0.97	LE
2	Teachers' knowledge of ICT program.	1.62	0.48	2.19	0.76	LE
3	Adequate feedback from the students.	2.30	0.92	2.20	0.99	LE
4	Time management by the teacher.	2.27	0.49	2.23	0.93	LE
5	Proper utilization of instructional material by the teacher.	1.62	0.59	2.23	0.93	LE
6	Teacher motivation of students.	2.35	0.49	2.08	0.99	LE
7	Good teaching and learning environment.	2.52	0.84	2.79	1.00	HE
8	Method of giving and submitting of assignment.	2.42	0.76	2.36	0.74	LE
9	Well prepared lesson plan.	2.56	0.54	2.94	0.67	HE
10	Adherence to syllabus.	2.88	0.50	2.66	1.04	HE
11	Effective utilization of questioning skill.	2.41	0.50	2.36	0.78	LE
12	Use of non-verbal cue.	2.05	0.50	1.93	0.76	LE
13	Stimulus variation.	2.28	0.49	2.26	0.75	LE
<b>Cluster mean</b>		<b>2.26</b>	<b>0.19</b>	<b>2.38</b>	<b>0.33</b>	<b>LE</b>

Table 1 presents the mean ratings and standard deviations of the respondents on the extent of teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic. The table shows that the mean responses of principals ranged from 1.62 to 2.88. For teachers, the mean response ranged from 1.93 to 2.94 for the items. The cluster mean value of the extent of teachers' effectiveness in "on-air" and "online" teaching of secondary schools was 2.26 and 2.38 for principals and teachers respectively. This indicated that principals and teachers generally agreed that teachers' effectiveness is at low extent in "on air" and "online" teaching in Anambra State during COVID 19 pandemic.

**Table 2:** Mean rating of principals and teachers on the challenges that hinder teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic

S/N	What are the challenges that hinder teachers' effectiveness in "on air" and "online" teaching?	Principals (N = 247)		Teachers (N = 763)		Decision
		X	SD	X	SD	
14	Inadequate communication between teacher and students.	3.51	0.50	3.36	0.77	A
15	Teachers lack of knowledge of ICT program.	2.73	0.91	2.95	0.96	A
16	Irregular feedback from the students.	2.62	0.82	2.81	0.94	A
17	Lack of appropriate time management by teachers.	2.59	0.88	2.51	0.68	A
18	Poor motivation of students by the teachers.	2.69	0.77	2.88	1.09	A
19	Unconducive teaching environment.	2.31	0.50	1.34	0.71	D
20	Incommensurate time slot for the "on-air" and "online" teaching.	2.72	0.83	3.14	1.01	A
21	Poor telephone, radio and television network.	3.55	0.49	3.48	0.67	A
22	Poor electricity supply.	2.76	0.84	3.07	0.96	A
23	Inadequate utilization of instructional materials by teachers.	2.52	0.59	2.70	0.95	A
24	Inadequate fund for purchase of data for sending WhatsApp and email reply by students.	2.66	0.81	2.81	0.97	A
25	Poor method of giving and submission of assignment	2.61	0.59	2.79	0.99	A
<b>Cluster mean</b>		<b>2.76</b>	<b>0.22</b>	<b>2.82</b>	<b>0.49</b>	<b>A</b>

Table 2 shows that principals had a mean rating of 2.76 and a standard deviation of 0.22 while teachers had a mean rating of 2.82 and a standard deviation of 0.49. the mean scores of both principals and teachers were above 2.50 the criterion mean. This implies that both the principals and teachers agreed that all the items except item 19 in table 2 are challenges that hinder teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic.

**Table 3:** t-test analysis of significant difference between the mean rating of principals and teachers on the extent of teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic

Group	N	X	SD	df	t-cal	Sig t-tab	Decision
Principals	247	2.26	0.19	1008	-7.02	0.05 1.96	Accepted
Teachers	763	2.38	0.34				

The mean scores of the two groups were subjected to t-test statistics. The result presented in table 3 showed that there is no significant difference between the mean ratings of the two groups. This is because the t-calculated (-7.02) is less than the t-tabulated of 1.96, degree of freedom 1008. Since the value of t-calculated is less than t-tabulated, the null hypothesis was accepted. This implies that there is no significant difference between the

mean score responses of principals and teachers on the extent of teachers' effectiveness in "on air" and "online" teaching in Anambra State during COVID 19 pandemic.

## 5. Discussion of findings

The major findings of this study revealed that the aims of "on-air" and "online" teaching that was newly established in Anambra state because of COVID-19 pandemic has not been attained because of some challenges affecting teachers' effectiveness. This was seen from the mean scores of principals and teachers as their cluster mean scores were 2.26 and 2.38 respectively in table 1 which showed that there is inadequate communication between the teachers and students, poor time management by the teacher, inadequate feedback from the teacher and students, lack of teachers' knowledge of ICT etiquette, poor method of giving and submitting assignments, poor utilization of questioning skill, non-utilization of non-verbal cue and improper utilization of instructional materials. All these affect the teachers' effectiveness. This is in conformity with Singh (2019) when he emphasized that teachers should be prepared to facilitate, design and implement communication strategies appropriate for the new roles demanded of them. This is also in agreement with observation of Stronge (2011) when he maintained that effective teachers maximize their instructional time and make use of it very well. The finding of inadequate feedback agrees with submission of Hattie and Timperley (2007) who observed that effective teachers monitor students learning through the use of a variety of information and formal assessment and offer meaningful feedback to the students. The hypothesis tested in table 3 showed that there was no significant difference between the mean scores of principals and teachers on the extent of teachers' effectiveness in "on air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic. The researcher concluded that both the principals and teachers' opinions on the extent of teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic correspond.

Table 2 revealed the challenges that hinder teachers' effectiveness in "on-air" and "online" teaching in secondary schools in Anambra state during COVID-19 pandemic. The challenges include: in-commensurate time slot for the on-air and online teaching, data affordability and turn-around time for submission and grading of assignment. Evidently, observation confirmed that there is shortage of time for the program, students are rushed to ask questions and not enough time for teacher to revise what he or she taught towards the end. Poor method of submitting assignment contributes a lot as most students and their parents might not afford enough money for data in order to send the written assignment to the teacher through either WhatsApp or email. Limited time allocation for the teaching affects teacher effectiveness as the students most times do not have the opportunity to ask questions and teachers don't even have enough time for more explanation. This corroborates with Stronge (2011) when he reported that teachers' effectiveness include maximizing of instructional time and making use of it very well. Principals and teachers also noted that poor telephone, television and radio network,



poor electricity supply, poor motivation of students, ineffective communication and irregular feedback from students are among the challenges that hinder teachers effectiveness in "on-air" and "online" teaching. Poor network from radio, television and telephones hinders the smooth delivery of the lesson as there is intermittent brake in transmission. This agrees with Zakaria, Fordjour and Afriyie (2015) who identified poor network services and faulty mobile phones as major challenges that hamper students' usage of mobile phones to support their learning. Inadequate electricity supply cut off most of the students from participating, thereby keeping them away from the lesson. This is also in accordance with Edeh (2019) who noted that the usage of mobile phone for learning is often hindered by poor electricity supply to charge the batteries. On effective communication, the finding is in line with the view of Manafa (2018) who stated that improper use of communication skills creates impediments in teaching and learning process. The finding is also backed up by Ozochi who opined that poor mode of communication is a setback to effective achievement of educational goals in secondary schools. Also, most teachers do not have enough exposure of "ICT Program" like, using appropriate language, using good and eligible writing and working towards the time frame. These challenges negate teachers' effectiveness in "on-air" and "online" teaching.

## 6. Conclusion

"On-air" and "online" teaching and learning that are introduced in secondary schools in Anambra state during COVID-19 pandemic is a very good idea that comes at the right time. These teachings if well-handled will achieve the major aim which according to the commissioner for Basic Education, Prof. Kate Omenugha is to stand in the gap for normal classroom situation truncated by the COVID-19 induced closure of schools in Anambra state. Incidentally, the study showed that teachers' effectiveness during the "on-air" and "online" teaching is not attained. This is as a result of some challenges identified. Some of these challenges include: poor electricity supply, poor telephone, radio and television network among others. These challenges may serve as a deterrent in teachers' effectiveness. Some recommendations are proffered based on these findings.

## 7. Recommendations

Arising from the study the following recommendations are made:

1. State government should collaborate with Ministry of Basic Education to organize seminars, workshops, trainings and conferences for the teachers on "Information and Communication Technology etiquette" and e\_ learning tools as this will help improve the teachers' effectiveness in "on-air" and "online" teaching and learning.
2. Government should fund the Ministry of Basic Education as they are the body that anchors the on-air and online teaching and learning so as to buy enough time slot in radio and television.

3. Ministry of Basic Education with the radio and television management should supervise and inspect the "on-air and online" teaching and make necessary adjustment especially in technical issues.

### **Conflict of Interest**

The author declares no conflicting interests with regards to this research work.

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