

## Teachers' Views on the use of Innovative Techniques and Media for Effective Teaching and Learning in Secondary Schools

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### Abstract

This study was carried to investigate teachers' views on utilization of innovative techniques and media for effective teaching and learning in secondary schools. The study is a cross sectional survey research. Four research questions were formulated to guide the study. The population of the study comprised 487 teachers in all the 16 public secondary schools in Ebonyi local government area of Ebonyi state, Nigeria. Simple random sampling technique was used to select 10 respondents each from the 16 public secondary schools. Instrument used to collect data was structured questionnaire. An internal consistency reliability of 0.78 was established for the instrument. Data collected were analyzed using mean and standard deviation. It was found among others that the individualized instruction, simulation/game, team teaching techniques, PowerPoint presentation and language laboratory instructional media enhance teaching and learning in post primary schools. The educational implications of the results include that more funds is required to provide the necessary facilities/equipment that could support the use of these instructional techniques and media in public secondary schools. Also training of teachers is critical for the use and sustenance of these innovative instructional techniques/media the schools.

**Keywords:** Innovative, Techniques, media, Teaching and Learning, Public secondary schools.

### INTRODUCTION

A technique is way of doing things. It is a systematic way through which a task is accomplished. A technique is called different names by many different scholars. Some refer the term to methods while others call it mode or skill. All these names refer to the procedures used in achieving a purpose.

In a teaching-learning situation, a technique is a skill, modality, or method a teacher adopts in delivering his/her lesson to achieve instructional objectives. Author (2016) defines instructional techniques/media as means or methods that a teacher uses in presenting the instructional content to students to achieve a set of specific instructional objectives. Innovation means a new development of invention to achieve better result. In the teaching and learning process, innovation involves deliberate application of information, imaginations and initiatives in deriving greater or different values from resources which often results when new ideas are applied to satisfy the needs and expectations of students (Author, 2013). Educational technology adopts and applies various innovative techniques/media to achieve instructional objectives, academic excellence, and life-long education. Innovative techniques/media in the teaching-learning process refer to new methods and means of teaching in an educational sector to achieve set instructional goals and objective. Some of the educational technology innovative techniques/media as considered in this study are: Individualized instruction, Simulation and game, team teaching, Language laboratory and PowerPoint presentation.

These techniques and media are popular and in use in western world, but reverse are the case in developing countries; hence, they are regarded as innovations here in Nigeria in the field of teaching and learning. Teaching is the activities that are designed carried out to bring about desired change in the learner's behavior. It is the process of imparting skills, ideas, and knowledge to learners to bring about desired behavioural change (Aja, 2013). In the teaching and learning process, teaching is a way that a teacher causes the learner to acquire the desired knowledge, skills, norms, and attitudes of a given society. Learning is acquiring of knowledge, norms, values, or information to be used at an appropriate time. Teaching and learning is the center of all educational activities no matter the grade level including post primary schools.

Post primary schools otherwise called secondary schools are institutions of learning for children who have finished their primary schools and before entering into tertiary institutions. At this level of education, children are prepared for useful living within the society and higher education. As a result, children at this stage should be exposed to instructional activities that will carry them throughout life.

Human beings differ in many ways so also the way they learn which calls for diversification of instructional programmes the individual uniqueness makes individualized instruction unavoidable. Realizing the differences in people's cognitive structures, interests, and needs scholars saw it necessary to design peculiar ways of meeting individual needs of learners in teaching-learning situations as no two persons are alike. The efforts to individualized instruction, according to Aggarwal (2007), started in the 1950s. Individualized instruction is learner's potentials to develop and produce a wholistic being. Nsofer and Ahmed (2015), the teacher must structure a variety of learning styles, interacts, and abilities using computer programme and instructions, computer assisted instructions and numerous types of multimedia resources that deliver text, audio, graphics, animation, narrations, sound and streaming video in order to achieve high with these techniques. This approach to instructional delivery helps moderate teacher-centered and group-oriented approaches in teaching-learning situations. Individualized instruction is an instructional technique that uses educational technology to aid student learning considering their ability on their own learning styles and at their own pace. For example, programmed textbook; 'workbooks and the use of computer for audio/video educational programmes and games that the student can use to study on his/her own are examples. The application of computers in education aid and promote individualized instruction in that some of the lesson content can be designed, programmed, and recorded in CD/DVD, or tapes packaged to address individual differences of the learner. In individualized instruction, the learner learns from simple to complex tasks in sequential bits. Individualized instruction makes teachers' work to be less as he/she does little talking.

Language is means of communication among individuals as social beings. To gain proficiency in a language demands a lot from the teacher, learner or the channel that supplies the necessary information and skills. To this effect, language laboratory came into existence as innovative technique in teaching and learning process. Language laboratory is platform for the development of essential proficiency in the leading of a new language. Language laboratory is uncommon in our schools which qualifies it to be a modern innovation in the instructional system for language proficiency. Language laboratory originated from the United State of America (USA) (Aggarwal, 2007). It enables the learner to hear the language spoken from recorded tapes and to practice speaking and acting in the same way. This leads to the development of skills, competences, correct pronunciation, intonation, accent, usage of words as the learner hears the language spoken by a native and experts (Aggarwal, 2007 and Okwo, 1996). Mangal and Mangal (2014) identifies five types and levels of operation of language laboratories; they are: level I: a type (audio system); level II: AA type (Audio- active system); level III: AAC (audio-active comparative system); level IV: AACC (audio-active comparative communication system) and Level V: AAC1 (active computer-based interactive system). All these sub systems can be used singly or in combination to bring about the desired result in the learners.

The term "team" means a group of people who perform a particular task. Team is a group of people who work together on a particular job to achieve a common goal. Team teaching is an innovative teaching technique used in schools of learning. To Mangal and Mangal, team teaching signifies the teaching work and activities organized by a team of individuals comprising teachers, resource persons, clerical staff and other employees. This type of teaching technique involves two or more teachers teaching the same subject or related subjects to the same group of students to achieve common instructional objectives. This can be regarded as a cooperative teaching where group of teachers are involved in planning and implementation of the instructional contents as schedule in the scheme of work and or syllabus. According to Warwick cited in Aggarwal (2007), team teaching is a form of organization, in which individual teachers decide to pool resources, interests and expertise together in order to devise and implement scheme of work suitable to the needs of their pupils and the facilities of their school. Team teaching technique gives the students the opportunity to have contact with highly competent teachers who are specialist in their field of education. According to Mangal and Mangal (2014), team teaching is in various forms, they are: single disciplinary team teaching, interdisciplinary team teaching and inter-institutional team teaching. This technique is popular and had been in use in western world, but reverse is the case in developing countries like Nigeria where it could be regarded as an innovation in teaching and learning. It is

therefore within the scope of this study to find out how collective efforts of teachers can bring improvements in the process and products of teaching.

PowerPoint is an electronic micro-software slide used to display information on a projection screen to the target audience for better understanding of the concept in question (Nsofer & Ahmed, 2015). This implies that PowerPoint is a new reality that will have a tremendous impact on the instructional programme if properly harnessed. It is an innovation that will enhance the output of teachers. PowerPoint among other innovative media creates positive changes in teaching and learning for it is more of student centred approach as it supports the explanatory activities of the teacher in the classroom situation. To Ukpai and Ugah (2011), PowerPoint (PPT) is presentation software that enables a user to create powerful presentation. Presentations created with PPT can have audio and visual effects making them look professional or jazzy as the situation demand. PPT allows the user to include formatted texts, graphics, pictures, sounds and animations in the presentations. Aligning instructional programme with PowerPoint helps to appeal to the senses of the learner for easy understanding of the lesson. The flexibility and variety employed in PPT help to spice the teaching- learning process in order to reduce boredom in the learners (Author, 2016).

Simulation is a way of displaying or exposing real character of a given concept to provide problem-solving experiences. This is in line with Cruickshank cited in Nwoji (1996) that Simulation is the creation of realistic games to be played by participants in order to provide them with life-like problem-solving experience. For Guetzhaw cited in Nwoji (1996), simulation is an operating representation of central features of reality. Simulation as teaching technique exposes the real character of what it is representing. Simulation is close to game as both display real features of the concept in question. The difference is that in simulation, there is no winning or losing party while in game one party must win. Simulation and game has some advantages as it provides the learner with opportunity to learn by doing and to be at home with the learning experience.

## PROBLEM OF THE STUDY

Technique is a systematic way or method through which a task is attained. In teaching-learning situation, technique refers to a particular method or modality a teacher adopts in delivering his/her lesson. Media on the other hand are the means and ways through which information or message is transmitted to the recipients (learners). Innovative techniques and media are current/new ways a teacher applies in discharging the instructional content to students to achieve the set instructional objectives. It is obvious that the way a teacher delivers his/her lesson makes teaching-learning effective or

ineffective, meaningful or not, interesting or boring etc. As a professional teacher, experience has shown that most teachers no matter their levels ignore integrating new techniques and media such as individualized instruction, simulation and game, team teaching, PowerPoint and language laboratory to improve quality education and lifelong learning. Nigeria is one of the developing countries where these innovative techniques and media for teaching and learning are rarely used, and is expected that effort should be made in unraveling ways to expose the school children to the current trends in teaching and learning, rather than sticking to the old method of teaching which might somehow be obsolete. These calls for the study: Innovative techniques for effective teaching and learning in post primary schools in Nigeria. In this context, the techniques are regarded as innovative techniques in the sense that they are new in teaching and learning process.

## Scope of the Study

The study examined teachers' views on the innovative techniques/media for effective teaching and learning in public secondary schools in Ebonyi State, Nigeria. The study focused specifically on the use of individualized instruction, simulation and game, team teaching, language laboratory and PowerPoint to enhance teaching and learning.

## Purpose of the Study

The general purpose of this study was to ascertain the views of teachers on needed innovative techniques for effective teaching and learning in public secondary schools in Ebonyi State, Nigeria. Specifically, the study sought to:

1. Ascertain the views of teachers on the use of individualized instruction technique for effective teaching and learning in Ebonyi state public secondary schools.
2. Determine the views of teachers on the use of simulation and game technique for effective teaching and learning in Ebonyi state public secondary schools.
3. Examine the views of teachers on the use of team teaching technique for effective teaching and learning in Ebonyi state public secondary schools.
4. Find out the views of teachers on the use of language laboratory media for effective teaching and learning in Ebonyi state public secondary schools.
5. Ascertain the views of teachers on the use of PowerPoint media for effective teaching and learning in Ebonyi state public secondary schools.

## Research Questions

The following research questions guided the study:

1. What are the views of teachers on the use of individualized instruction technique for effective teaching and learning in Ebonyi state public secondary schools?
2. What are the views of teachers on the use of simulation and game technique for effective teaching and learning in Ebonyi state public secondary schools?
3. What are the views of teachers on the use of team teaching technique for effective teaching and learning in Ebonyi state public secondary schools?
4. What are the views of teachers on the use of language laboratory media for effective teaching and learning in Ebonyi state public secondary schools?
5. What are the views of teachers on the use of PowerPoint media for effective teaching and learning in Ebonyi state public secondary schools?

## METHODOLOGY

Design of the study was a cross sectional survey. According to Igwe (2006) cited in Obinwa (2015) cross-sectional survey requires selecting knowledgeable respondents across levels to constitute a sample. In this case, needed research data were collected from a sample drawn from a predetermined population. Nworgu in Obinwa (2015) noted that this approach makes it possible for many subjects to be studied at cheaper and quicker rate.

Population of the study comprised all the 487 secondary school teachers in 16 public secondary schools in Ebonyi local government area of Ebonyi State, Nigeria. (SEB-Secondary Education Board: Record/Statistics, Ebonyi State 2015). Secondary school teachers only were used for they study because they implement the curriculum at the secondary school level and also close to the students. Simple random sampling technique was used to select ten (10) teachers each from the sixteen (16) public secondary schools used for the study. This gave a total of one hundred and sixty (160) respondents as sample but 125 were responded for the study.

Area of the study is public secondary schools in Ebonyi State, Nigeria. The state was chosen because they are educationally disadvantaged and need to be exposed to the techniques that will make students at secondary school level sound and achieve very high academically. Ebonyi state is one of the thirty six states in Nigeria. It shares boundaries with Enugu, Abia, Cross River and Benue States. The inhabitants are mostly farmers/ artisans, and few public and civil servants. They speak Igbo and English language. Ebonyi state is

classified as educationally disadvantaged state in Nigeria. There are 1,060 public primary, 221 secondary and 5 tertiary institutions in the state.

## Instrument for Data Collection

Teaching and Learning Researchers -structured questionnaire titled "Innovative Techniques/Media for Effective Teaching and learning Questionnaire" (ITMETLQ) was used as the instrument for data collection. The response option used is a four- point rating scale thus: Strongly Agree-4 points, Agree-3 points, Disagree-2 points and strongly disagree -1 point. The items of the instrument were developed based on the research questions. Each item statement addressed the research question. The items were arranged in clusters of 5 items on each table.

The instrument was validated by three experts; one each from educational technology, curriculum studies and educational measurement and evaluation respectively in the faculty of education University of Nigeria Nsukka. They were also requested to examine the face and content validity of the instrument. The corrections made by the experts led to the modification draft and production of the final questionnaire for the study.

In determining the reliability of the instruments for the study, a pilot study was carried out using public secondary school teachers in Abakaliki local government area of Ebonyi State, Nigeria who were not part of the respondents for the study. Their responses were subjected to reliability of analysis using Cronbach Alpha co-efficient to determine the internal consistency of the instrument. The reliability coefficient of all the clusters was obtained as 0.78. The reliability index was considered high enough for the study.

In collecting data for the study, the researchers employed two research assistants from who were trained on the mode of administration and collation of questionnaire. Specific days were mapped out for distribution of the questionnaire to all the sampled schools. The questionnaire was administered on the respondents and collected the same to ensure maximum return.

The data collected were analyzed using mean scores and standard deviation. Decision rule is that mean score of 2.5 and above is regarded as agree; while mean score below 2.5 is regarded as disagree.

## RESULTS

**Research question one:** What are the views of teachers on the use of individualized instruction technique for effective teaching and learning in public secondary schools?

**Table 1:** Mean response of teachers on the use of individualized instruction technique for teaching and learning in public secondary schools.

S/N	Item statement	SA	A	D	SD	$\bar{X}$	SD	Decision
1	Students reading their text books on their own after classroom lesson help them to understand the subject matter better.	7	75	–	–	3.5	0.50	Agree
2	Student learning on their own with the aid of programmed and recorded lesson in CD/DVD or tape helps to elevate the load of the classroom teacher repeating instructional content	60	75	–	15	3.4	0.66	Agree
3	Computer as an innovative media enhances student's private study and creative thinking as students can operate the computer and get the information they want.	45	105	–	–	3.7	0.46	Agree
4	Individualized instruction helps students to learn from simple to complex, known to unknown because they are in control of what they are learning.	60	75	15	–	3.3	0.90	Agree
5	Individualized instruction reduces the time the teacher should have spent in explaining the lesson content because the students can get more information on their own.	60	60	30	–	3.0	1.10	Agree
6	Individualized instruction takes care of individual student's learning styles because each student learn according to his/her ability.	15	135	–	–	3.9	0.30	Agree
7	Students engaging in individualized instruction promote lifelong learning in them as what a student finds out him/herself is difficult to forget.	30	105	15	–	3.5	0.92	Agree
<b>Grand Mean (x)</b>						<b>3.47</b>		

The result of the data analysis in table 1 show that the respondents agreed that the items 1-7 are benefits accruable when individualized instruction is used for instructional delivery in post primary schools. This is evident from the grand mean of 3.47 which indicates that the use of this technique will

greatly improve the process of teaching and learning in schools.

**Research Question two:** What are the views of teachers on the use of simulation and game technique for effective teaching and learning in post primary schools?

**Table 2:** Mean response of teachers on the use of simulation and game technique for effective teaching and learning in post primary schools.

S/N	ITEMS	SA	A	D	SD	$\bar{X}$	SD	Decision
8	Students exposed to simulation and games are opportune to see and learn the actual characters of real concepts it represents.	15	75	45	15	2.8	1.33	Agree
9	Simulation and games helps students to develop critical thinking because during the act students think on the next line of action.		150	–	–	4.0	0.00	Agree
10	Students thought with simulation and games develop the skill of problem solving because the technique is problem solving in nature.	45	105	–	–	3.7	0.46	Agree
11	Simulation and games helps students to retain what have been thought because they will be actively involved in the act.	30	120	–	–	3.8	0.40	Agree
12	Simulation and games promote transfer of knowledge because similar character of what the students have learnt might reoccur.	45	90	–	15	3.3	0.70	Agree
<b>Grand Mean (x)</b>						<b>3.52</b>		

The result of data in table 2 reveal that the respondents agreed with items 8-12 as contributions of simulation and game technique to instructional delivery process in post primary schools. The findings show that the respondents agreed with item: 8-12 as contributions of simulation and game technique to instructional delivery process in post primary schools. This is

evident from the high grand mean score of 3.52 as indicated in table two above.

**Research Question Three:** What the views of teachers on the use of team teaching for effective teaching and learning in public secondary schools?

**Table 3:** Mean response of teachers on use of team teaching technique for effective teaching and learning in public secondary schools.

S/N		SA	A	D	SD	$\bar{X}$	SD	Decision
13	Applying team teaching in instructional delivery helps students to enjoy expertise knowledge of individual teacher as more than one teacher teaches the students.	30	120	-	-	3.8	0.40	Agree
14	Team teaching helps in reducing the errors one teacher might have made on the process of teaching, because another teacher from the team might correct the error.	45	105	-	-	3.7	0.46	Agree
15	Team teaching expands the scope of the content of instruction as individual teacher goes extra mile to get information.	45	90	15	-	3.4	0.92	Agree
16	In team teaching, students are opportune to share in the effective and weakness of teachers because each member of the team teaches the students in his/her own way.	90	60	-	-	3.4	0.49	Agree
17	Team teaching technique promotes teacher-teacher relationship as they work for planning to evaluation of an instruction together.	75	60	15	-	3.2	0.87	Agree
<b>Grand mean (x)</b>						<b>3.5</b>		

The analysis of data in table 3 show that the respondents agreed in items 13-17 as advantages of the use of team teaching in instructional delivery in post primary schools which translate to the high grand mean score of 3.5 as indicated in the table 3

above.

**Research Question Four:** What are the views of teachers on the use of language laboratory media for effective teaching and learning in public secondary schools?

**Table 4:** Mean response of teachers on the use of language laboratory media in teaching and learning in public secondary Schools.

S/N		SA	A	D	SD	$\bar{X}$	SD	Decision
18	Teaching students in language helps Students to learn the accent of the original natives of the language as they hear from them directly.	30	60	30	30	2.8	1.17	Agree
19	Use of language laboratory in teaching- learning process increases students' listening skills and comprehension	45	105	-	-	3.7	0.46	Agree
20	Integrating language laboratory in language class promotes students' ability to pronounce the spoken language correctly as they listen to the original owners of the language.	60	75	15	-	3.3	0.90	Agree
21	Language laboratory helps the students to make appropriate use of the spoken language, because students are hearing directly from the original source.	30	90	15	15	3.3	0.90	Agree
22	Language laboratory creates room for students to learn at their own pace, as the content to be learned are programmed and taped.	45	105	-	-	3.7	0.46	Agree
23	Language laboratory reduces teacher's load of repeating words, because it is programmed and students learn from the taped.	30	90	30	-	3.2	1.66	Agree
<b>Grand mean (x)</b>						<b>3.33</b>		

The analysis of data in table 4 reveal that the respondents agreed that items 8-13 are the gains of using language laboratory in teaching and learning in post primary schools as can be seen from the grand mean of 3.33 shown on the table

four above.

**Research Question Four:** What are the views of teachers on the use of PowerPoint media for effective teaching and learning in public secondary schools?

**Table 4:** Mean response of teachers on the use of power point media for teaching and learning in public secondary schools.

S/N	ITEMS	SA	A	D	SD	$\bar{X}$	SD	Decision
24	Students taught with PowerPoint understand the topic concepts better because the lesson has audio and visual effect.	45	85	15	07	3.11	0.758	Agree
25	Using PowerPoint in teaching arouses students' interest because the lesson is presented with pictures.	75	75	_	_	3.50	0.500	Agree
26	Presentation of lesson content with PowerPoint make teaching easy as slide design template can be used.	75	60	15	_	3.40	0.663	Agree
27	Presentation of lesson content with PowerPoint makes students to be attentive in the classroom during teaching and learning because of the sound/visual effect.	75	75	_	_	3.50	0.500	Agree
28	Students taught with the aid of PowerPoint retain longer what was taught because the lesson could be presented with animation.	15	105	30	_	3.00	0.632	Agree
29	Presentation of lesson with the aid of PowerPoint enhances teacher-students interaction because of the use of formatted texts.	30	90	30	_	3.00	0.632	Agree
30	Using PowerPoint in teaching sustains students' interest because of the use of graphics.	53	83	7	7	3.21	0.736	Agree
31	Students taught with the aid of PowerPoint make learning easy because of the use of auto content wizard.	45	75	30	_	3.10	0.700	Agree
<b>Grand mean</b>						<b>2.85</b>		

The result of data analysed on table 5, show that the respondents agreed in items 24-31. This implies that use of power point as an instructional medium enhances effective teaching and learning in secondary schools.

## DISCUSSION OF FINDINGS

### Views of teachers on the use of individualized instruction technique for effective teaching and learning in post primary school

Result in table 1 on views of teachers on the use of individualized instruction for effective teaching and learning in post primary schools revealed positive response in favour of the use of individualized instructional technique for effective teaching and learning in post primary schools.

### Views of teachers on the use of simulation and game technique for effective teaching and learning in public secondary schools

Result in table 2 on the use of simulation and game technique for effective teaching and learning in post primary schools showed that teachers responded in favour of the use of language laboratory for effective teaching and learning. This is in agreement with Heinkel (1970) cited in Abangwu and Nwofia (1999) that simulation produces desirable attitude which enhance teaching and learning. The positive achievement in favour of simulation might be attributed to the fact that simulation and game influence both affective, cognitive psycho-motor domains which increase retention achievement and confidence to apply the information taught in a similar situation. But this is contrary to the study of Umo (2001) that game strategy did not have any significant effect on the achievement of students in Igbo grammar though those exposed to games achieve a little higher than those exposed to

the conventional method. Most of the time resources required to improve instructional process might not be enough or not there at all which can also be obtainable in simulation and games technique. The shortage of either human and materials resources might hinder significant effect of simulation and game.

### Views of teachers on the use of team teaching technique for effective teaching and learning in public secondary schools

Result in table 3 on the opinions of teachers on the use of team teaching technique for effective teaching and learning in post primary schools revealed positive response in favour of the use of team teaching. This is in line with Carpenter, Crawford and Walden (2007) that not minding the insignificant difference in the achievement test scores for the two groups, the final grades was significantly higher among team taught students.

### Views of teachers on the use of language laboratory media for effective teaching and learning in public secondary schools.

Result in table 4 on opinions of teachers on the use of languages laboratory media indicate positive response to the credit of the use of language laboratory for effective teaching and learning in public secondary schools.

### Views of teachers on the use of PowerPoint for effective teaching and learning in public secondary schools

Result in table 5 on opinions of teachers for effective teaching and learning revealed positive response in favour of the use of PowerPoint for effective teaching and learning in public secondary schools.

## CONCLUSION

To enrich teaching-learning process in post primary schools, some techniques such as individualized instruction, language laboratory, team teaching, PowerPoint, simulation and game should form the integral part of teachers' mode of instructional delivery as they are more of students' centered approach to instruction. They promote students' mastery of concepts, active participation, critical thinking and retention.

## RECOMMENDATIONS

Based on the findings of study, the following recommendations were made:

1. Students' centred instructional techniques should be applied by teachers in delivering their instructional content to achieve lifelong learning in students.
2. Government and school management should supply enough and required facilities for language laboratory for promotion of language studies.
3. School management should endeavor to recruit qualified and enough teachers for each subject to encourage team teaching and to promote quality education.
4. As PowerPoint can have audio and visual effects which makes lesson concepts real thus, teachers should endeavor to use it in presenting their lessons.
5. Instructional simulation and games should be encouraged and promoted by the school management by providing designed instructional simulation/game course ware and soil ware as it enhances students active participation during lesson

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