

TEACHERS' PERCEIVED UTILIZATION OF FIELD-TRIP IN TEACHING AND LEARNING SENIOR SECONDARY SCHOOL BIOLOGY IN RIVERS STATE, NIGERIA

By

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Abstract

The study examined teachers' perceptions of the utilization of field-trip in teaching and learning senior secondary school Biology in Rivers State, Nigeria. Three research questions were raised and answered. The study adopted descriptive survey research design. The population of the study comprised of 279 Biology teachers from 102 senior secondary schools in Rivers East Senatorial District. The simple random sampling technique was used to select 96 teachers from 39 schools. The instrument for the study was the Teachers' Perception on the Utilization of Field-trip in Teaching and Learning Biology (UFTLB) questionnaire. The reliability of the UFTLB instrument was established using Cronbach's Alpha statistic to obtain a reliability coefficient value of 0.88. Mean and standard deviation were used to analyse and answer the research questions. The findings of the study, among others, showed that teachers have a high and positive perception of, and positive attitude towards the utilization of field-trip in teaching and learning of senior secondary school Biology. Furthermore, teachers perceived lack of funds, difficulty in obtaining parental permission and following up with students, transportation problem, time constraints, lack of encouragement from school authority, and lack of standby school bus as some factors affecting the utilization of field-trip as an instructional strategy in the teaching and learning of Biology. It was therefore recommended that government and private school owners, and school managements should provide funds, school buses, materials and needed support for teachers and students to enable them participate meaningfully in educational field-trips.

KEYWORDS: Teachers' Perceptions, Field-trip, Teaching and Learning, Biology.

INTRODUCTION

Biology is a unique branch of natural science that is concerned with the search for in-depth understanding of natural phenomena and events, which deals with the study of living organisms. Hence, Arokoyu and **Chukwu** (2017) affirmed that science educators give special recognition to

Biology among the sciences because of its educational values, its close relation to man as a living organism, and its peculiar field of experimentation and inter-relationships with the other sciences. The important position Biology occupies in Science Education was also re-echoed by Osuafor and Okigbo (2013) as they affirmed that Biology is central to many science-related courses such as Medicine, Pharmacy, Nursing, Agriculture, Biochemistry, and Microbiology.

However, despite the significant role it plays and the importance attached to Biology in the field of Science Education, its teaching and learning in Nigeria secondary schools has been characterized by the adoption of the traditional instructional strategy that is teacher-centred. This method of instruction has been described by Etobro and Fabinu (2017) as discipline-centred, teacher-centred with student learning just passive and at the surface. This strategy does not take the needs, concerns and requirement of the students into consideration because the subject content is driven by and depends mainly on the disciplinary content that must be presented. It is disappointing to state that the continuous and persistent use of the traditional instructional strategy in the teaching and learning of Biology and other subjects in the Sciences have failed to transfer knowledge from the teacher to the students. Achor and Amadu (2015) stated that Biology classifies organisms and describes their functions and how species come into existence. Therefore, it can hardly be studied only in the classroom settings effectively as many species are found in their natural habitat outside the classroom. Biology involves a lot of concepts which cannot be learnt without active involvement of the learners. It is imperative that teachers apply appropriate teaching strategies to attain this goal. One of such teaching strategies is field-trip.

Field-trip in Biology can also be called "outdoor biology" or viewed as fieldwork. Therefore, field trips involve the learner travelling out or moving out of classroom situation, to see things in their nature (real forms) which is very important (Nnamonu, Anih, Nzewi, Ogbodo, Aleke, Kama & Ndukwe-Ani, 2016). Field-trip as field work is learning exercise undertaken by teachers and students in certain aspects of Biology so as to give the students the opportunity to acquire knowledge (Ajaja, 2010). Field-trip as excursion is one in which the students are exposed to people, events and opportunity to make connections with others (Ajitoni & Salako, 2013). Field-trip as fieldwork is an activity based method of teaching which helps to bring about an effective learning of Biology by students. Based on experiential learning that could empower teachers to forge stronger links between formal and informal science education, Behrendt and Franklin (2014) noted that field trips offer an opportunity to motivate and connect students to appreciate and understand classroom concepts, which increase a student knowledge foundation, promoting further learning and higher level thinking strategies. Educational field-trips give students the opportunity to learn in a natural environment and experience things first-hand and from primary resources rather than textbooks, and real objects rather than pictures or photos (Okwelle & Dokubo, 2018). A successful and quality field trip requires teacher perception, preparation and interaction with the environment before, during and after the field trip.

Perception may be seen from two dimensions: the physical and psychological dimensions, which are responsible for our perceptual outcomes (Qiong, 2017). According to Qiong, the physical dimension of perception is mainly about the conversion of a stimulus (from the eyes, ears, and nose) into a usable form, and it functions in people's acquisition of information or knowledge about the outside world. On the other hand, the psychological dimension is explained in people's ability in interpersonal or intercultural communication based on their beliefs, values, needs, interests etc. to perceive and interpret the outside world. Consequently, it is students' and teachers' beliefs, values, attitudes or interests (the psychological dimension) rather than their sensory organs (the physical dimension) that determine what stimuli will attract students' and teachers' attention and hence meanings of the world of Biology outside the classroom. Hence, perception is the organization, identification and interpretation of sensory information in order to represent and understand the biological environment outside the classroom. Therefore, the teacher perception of field trip in the teaching and learning of Biology is a sequence of steps that begins with stimuli in field environment

and ends with the individual organisation and interpretation of the sensory impression to give meaning to school learning of Biology. To Adeyemi (2011), the perception of teachers' teaching, to a large extent, determines the level of understanding reached by his/her students as the teachers' perception is one of the most important educational inputs predicting students' achievement. Thus, the perceptions of Biology teachers about field-trip has an important role in conducting field-trips. Teachers' perception of field trip may influence their attitude towards the utilisation of field trip in teaching and learning of Biology in schools.

Attitude is perceived as an individual's prevailing tendency to respond favourably or unfavourably to an object, person or group of people, institutions or event (Morris & Maistro, 2005). Attitude is therefore a predisposition towards a particular cognitive, emotional or behavioural reaction to an object, individual, group, situation or action. In a teaching-learning context, an attitude of a teacher can be described as a general tendency or state of preparedness to behave in a particular way with regard to a teaching task or accept/apply a teaching strategy to a topic. Teachers' attitude towards the utilisation of field-trip in teaching secondary school Biology will positively or negatively influence students' learning experience in practical works in Biology and their subsequent performance in the subject. Therefore, knowledge of factors affecting the use of field-trip in teaching and learning Biology is a good way to elicit their perceptions.

Soyal (2018) identified factors affecting the use of field-trips in teaching and learning Biology to include: no enough time in school year to conduct/organize field-trips, high cost of transportation, lack of necessary equipment, resources or materials, students' safety being at risk, lack of knowledge about the process of planning and conducting field-trips, parents' disapproval of engaging in field-trips and discouragement from school administration. To this end, Soyal investigated Biology teachers' (N=39) perceptions about field trips and related pre-service preparation by collecting survey data from 10 public and four private schools in Ankara, Turkey. Significant findings from the study showed that as the years of teaching increased, the teachers perceived field-trips more challenging especially in providing student safety and being supported by school administration. Therefore, adding field-trip activities may be challenging to Biology teachers because of the responsibility on them to manage students' behaviour during field-trips and to ensure the safe and arrival of students back to their homes.

Reports on the impact of field-trip instructional strategy on students learning experience as identified by Nnamonu, Anih, Nzewi, Ogbodo, Aleke, Kama and Ndukwe-Ani (2016) are that field-trip helps students to carry out practical works in Biology; field-trip gives students the opportunity to have first-hand experiences and to explore their world; field-trip in Biology studies enables students to observe the natural phenomenon in the subject. However, Nnamonu et al. outlined factors that may affect the utilization of field trip in teaching and learning of Biology as lack of a school bus which often prevents students from having effective field-trip, and teachers/students being afraid of accident during field trips (security fears and concern), among others.

Michie in Ajaja (2010) indicated the following purposes as the driving force for conducting field-trips: providing first-hand experience; stimulating interest and motivation in science; giving meaning to learning and interrelationship; developing observation and perception skills; and personal social development. All these culminate in influencing student's attitude in the following ways: interest in hands-on real world experiences; positive attitude towards the subject; improvement of the socialization between students; and development of rapport between teachers and students.

From every one of the definitions, opinions and objectives stated above, Omeodu and Abara (2018) postulate that field-trips give the understudies the chance of getting science process abilities, for example, perception, control, distinguishing proof, characterization, estimation, recording, imparting, expectation, understanding, examination, speculation and reaching determinations which are an imperative for science. Ajaja (2010) opined that it is a common experience to find that the more familiar students are with a field site, the more likely they would make good observations, and collect

pertinent data. This is because they know the niches and locations of organisms in the habitat as Biology students. However, schools lacking the basic requirement could engage in industrial visitation through community resource persons to share their skills, knowledge and expertise. The inadequacy of these facilities in schools is a serious setback to the proper adoption of learner-centred instructional strategies like field trip.

Egwu and Okigbo (2021) examined the effect of field-trip teaching strategy on senior secondary school one(SS1) students' achievement in ecology in Nnewi Educational Zone of Anambra State, Nigeria. The study adopted a non-randomized quasi-experimental control group design. Two intact classes were randomly assigned to experimental and control groups. The experimental group was taught ecology using field-trip and control group was taught using conventional lecture method. The findings of the study showed, among others, that the use of field-trip is more effective in enhancing students' achievement in ecology than the conventional lecture method. The study recommended that curriculum planners should incorporate field-trip in teacher's activities of SS1 Biology curriculum to enable students gain first-hand information and provide opportunities for students to see, touch and possibly feel what they have heard about certain organisms, events and situations.

Tortop (2012) carried out a study to develop a scale for measuring teachers' attitude towards field trip. The teacher attitude scale towards the field trip was an inventory made up of 15 items and two dimensions (educational contribution and organizations difficulty). The findings obtained showed that the scale was valid and internal consistency was 0.75, therefore the reliability of the internal consistency was normal. Factor structures and loading of the 15 items revealed, among other factors, that field trips are important for students' better understanding of nature; field trips may be used as an effective method for increasing students' awareness of ecological issues; field trips meet educational goals that cannot be reached in the classroom; organizing field trips takes a lot of time, and parents' allowance for students' attendance of field trips is a serious problem. Notwithstanding the importance of field trip as stated by many researchers and teachers, many teachers hesitate to arrange for the event. This situation may be derived from teachers' attitudes. Therefore, field trip studies should be carried out to measure teachers' attitude towards the utilization of field trip in teaching and learning school Biology.

Arokoyu and Chukwu (2017) reported that as important as knowledge of Biology is to human beings, it appears students' academic performance in Biology at the secondary school level is becoming worse than the other science subjects. Performance of students has not been very impressive from the West African Examination Council (WAEC) and National Examination Council (NECO) in the science especially in Biology. The Chief Examiners' Report revealed that candidates' weaknesses in Biology indicate that students are not favourably disposed towards Biology practical (WAEC Chief Examiners' Report, 2018).

The yearning for quality and effective instruction delivery has been a long standing objective of science education. The emerging concern for the poor performance of students in school science and its resultant consequence on the production and development of future scientists, engineers and technologies had led to the search for instructional strategies that promote effective and improved science learning centred on interactive, minds-on and hands-on learning that may be through field trip teaching strategy. Several factors have been advanced as affecting students' achievement in Biology, and these include student factors, teacher factors, societal factors, governmental infrastructural problem, language of instructions, instructional strategies employed by the teachers (Ali & Chacko, 2013). The teacher factors may include their perception of and attitude towards the instructional strategies of teaching practical Biology. Investigation further revealed that there are few studies on field-trip instructional strategy in Biology and in the location considered for this study (Omeodu & Abara, 2018; Igwebuike & Atomatofa, 2013; Ajitoni & Salako, 2013). Therefore, the study set out to investigate teachers' perceptions on the utilization of field-trip as instructional strategy in teaching and learning of Biology in senior secondary schools in Rivers East Senatorial District of Rivers State.

STATEMENT OF THE PROBLEM

Biology is central to many science-related courses such as Medicine, Pharmacy, Nursing, Agriculture, Biochemistry, Microbiology. Based on this, the importance of Biology in the field of science and especially education cannot be over-emphasized. However, it is sad to note that despite the significant role played by Biology as a subject especially in Science Education, its teaching and learning activities have been characterized by the adoption of the traditional teaching strategy as teachers probably lacked appropriate instructional strategies for teaching the subject in schools. Although, the traditional instructional strategy has been applauded for being able to discharge large content within a short period of time, it may have failed in the transfer and application of classroom knowledge to real life practical situations from the teacher to the student in the teaching and learning of Biology (Mirko & Jossip, 2014). Aina and Keith (2015) also stated that Science Education in Nigerian schools is faced with many challenges; one of such challenges is the out-of-field teaching. This daunting situation has manifested itself in the form of students' low academic achievement and students' inability in developing their self-efficacy through observation, analysis, reporting and evaluation of biological objects, events and situations in the immediate environments.

Although, investigation revealed that field-trip instructional strategy is student-centred and could have the prowess to improve Biology students' academic achievement and inquisitiveness in observing, analysing, reporting and evaluating their skills significantly, teachers seemed to have continually resisted its use in the teaching and learning of Biology. The questions are: Could this be as a result of teachers' perceived attitude towards use of field-trip? Is it as a result of lack of support from stakeholders on the use of field-trip strategy? It is on this note that the study set out to investigate teachers' perception on the utilization of Field-trip instructional strategy in teaching and learning Biology in Rivers East Senatorial District of Rivers State, Nigeria.

PURPOSE OF THE STUDY

The purpose of the study was to investigate teachers' perception of the Utilization of Field-trip in teaching and learning of Biology in senior secondary schools in Rivers East Senatorial District, Rivers State, Nigeria. Specifically, the study investigated:

1. the perception of teachers on the utilization of field-trip in teaching and learning of Biology in Senior Secondary Schools in Rivers East Senatorial District in Rivers State;
2. the attitudes of teachers towards the utilization of field-trip in teaching and learning of Biology in Senior Secondary Schools in Rivers East Senatorial District in Rivers State;
3. the factors affecting the use of field-trip in teaching and learning of Biology in Rivers East Senatorial District in Rivers State.

RESEARCH QUESTIONS

The following research questions were raised to guide the study:

1. What is the perception of teachers on the utilization of field-trip in the teaching and learning of Biology in Senior Secondary Schools in Rivers East Senatorial District in Rivers State?
2. What is the attitude of teachers towards the utilization of field-trip in teaching and learning of Biology in Senior Secondary Schools in Rivers East Senatorial District in Rivers State?
3. What are the factors affecting the use of field-trip in teaching and learning of Biology in Senior Secondary Schools in Rivers East Senatorial District in Rivers State?

METHODOLOGY

Survey research design was adopted for the study. The population for the study consisted of 279 Biology teachers both male and female in all the 102 senior secondary schools in the eight Local Government Areas of Rivers East Senatorial District. The simple random sampling technique was used in selecting four out of the eight Local Government Areas in the Senatorial District. The four

Local Government areas sampled have 75 senior secondary schools. These 75 senior secondary schools have a total of 222 Biology teachers. Thirty-nine senior secondary schools in the four Local Government Areas had a total number of 103 Biology teachers were randomly sampled.

The instrument for data collection was a questionnaire titled Teachers' Perception and Utilization of Field-trip in Teaching and Learning Biology (TPUFTLB). The instrument was developed to seek information from Biology teachers on their perception and utilization of Field-trip in teaching and learning Biology. The TPUFTLB instrument consisted of two sections, A and B. Section A contained four items which elicited the demographic information of the respondents which included name of school, gender, teachers' years of teaching experience, and school location. Section B, contains three parts to elicit teachers' perception offield-trip in teaching Biology as an instructional strategy; teachers' attitude towards the utilization of field-trip in teaching Biology, and teachers' perceived factors affecting the use of field-trip in teaching Biology in senior secondary schools. The first part contained seven items, the second part contained six items, while third part contained eight items respectively, making a total of 21 items in section B. The questionnaire was structured on a four-point Likert Scale response format (Strongly Agree, Agree, Disagree and Strongly Disagree). The Cronbach's Alpha statistics was used to obtain a reliability coefficient of 0.81.

Data collected were analysed using mean and standard deviation. The cut-off mean for taking decision was 2.50. Hence, any response mean that fell below 2.50 was regarded as low perception or negative attitude towards the utilization of field-trip in teaching and learning of Biology. Any mean score equal to or above 2.50 was regarded as high perception or positive attitude towards the utilization of field-trip in teaching and learning of Biology.

RESULTS

Research Question One

What is the perception of teachers on the utilization of field-trip in the teaching and learning of Biology in senior secondary schools in Rivers East Senatorial District in Rivers State?

Table 1: Mean and Standard Deviation of Teachers' Perception on the Utilization of Field-trip in the Teaching and Learning of Biology (N=96)

S/ N	Statement	N	SA	A	D	SD
1	There are available power points for lesson presentation	69	27 (39.18 %)	29 (56.5 %)	3 (4.3 %)	0 (0 %)
2	There are available Google classroom for classroom lessons	69	18 (26.1 %)	24 (34.8 %)	6 (8.7 %)	21 (30.4 %)
3	Whatsappplatform in available for online lesson	69	48 (69.6 %)	18 (26.1 %)	3 (4.3 %)	0 (0 %)
4	Zoom video conferencing inevitable for visual lesson	69	21 (30.4 %)	21 (30.4 %)	9 (13.0 %)	18 (26.1 %)
5	There is Google net application for classroom meetings	69	12 (17.4 %)	21 (30.4 %)	27 (39.18 %)	9 (13.0 %)
6	Electronic board for visibility	69	12 (17.4 %)	21 (30.4 %)	21 (30.4 %)	5 (21.9 %)
7	YouTube for fast information dissemination is available	69	24 (34.8 %)	45 (65.2 %)	0 (0 %)	0 (0 %)
8	Laptops/desktops and android Phones are available for class use	69	36 (52.2 %)	33 (47.8 %)	0 (0 %)	0 (0 %)
9	There is availability of internet services	69	24 (34.8 %)	39 (56.5 %)	6 (8.7 %)	0 (0 %)
Total		69	35.7 %	42.0 %	20.3 %	2.0 %

The results of the analysis from table 1 reveals that 35.7% of the respondents strongly agreed that ICT materials are available for the teaching and learning of Christian Religious Studies, 42.0% agreed, 20.3% disagreed while 2.0% strongly disagreed. The results show that most of the respondents agreed that ICT materials are available for teaching Christian Religious Studies in the secondary schools in the study area.

Research Question Two: What is the level of CRS teachers' awareness towards ICT in secondary schools in Plateau State?

Table 3: Results of the analysis on awareness to teachers on ICT in secondary schools

S/ N	Statement	N	SA	A	D	SD
1	Teachers are aware of power points presentation for lesson delivery	69	6(8.7%)	45(65.2%)	18(26.1%)	0(0%)
2.	Teachers are aware of electronic board for visibility	69	3(4.4%)	57(82.6%)	9(13.0%)	0(0%)
3.	Teachers are not aware of the use of ICT	69	6(8.7%)	33(47.8%)	30(43.5%)	0(0%)
4.	Teachers have never been trained in ICT application	69	6(8.7%)	39(56.5%)	9(13.0%)	15(21.7%)
5.	I have been trained but I am not confident	69	42(60.9%)	27(39.1%)	0(0%)	0(0%)
6.	I am aware of whatsapp platform for online lesson	69	18(26.1%)	27(39.1%)	3(4.3%)	21(30.4%)
7.	I am aware of video conferencing For online lesson	69	3(4.3%)	21(30.4%)	24(34.8%)	21(30.4%)
Total		6	17.4%	55.4%	20.1%	7.1%

The result of the analysis from table 2 shows that 17.4% of the respondents strongly agreed that Christian Religious Studies teachers are aware of ICT as a tool for teaching and learning of Christian Religious Studies, 55.4% agreed, 20.1% disagreed while 7.0% strongly disagreed that they are not aware. From the results, it is evident that Christian Religious Studies teachers are aware of ICT tools that can be used in teaching Christian Religious Studies in the secondary schools in the study area.

Research Question Three: To what extent are Christian Religious Studies teachers using ICT to teach in the Central Senatorial Zone?

Table 4: Result of the analysis on extent to which Christian Religious Studies teachers are using ICT to teach in the Central Senatorial Zone.

S/ N	Statement	N	SA	A	D	SD
1.	I am certified in the use of ICT	69	15(21.7%)	33(47.8%)	6(8.7%)	5(21.7%)
2.	I learnt ICT on my own	69	12(17.4%)	27(39.1%)	12(17.4%)	8(26.1%)
3.	I can use most ICT tools	69	15(21.7%)	33(47.8%)	9(13.0%)	12(17.4%)
4.	I can only use few ICT tools	69	15(21.7%)	48(69.6%)	6(8.7%)	0(0%)
5.	I can use all ICT tools	69	0(0%)	6(8.7%)	42(60.2%)	21(30.4%)
6.	Teachers are competent in the use of ICT tools	69	0(0%)	3(4.3%)	24(34.8%)	42(60.2%)
7.	Teachers use ICT weekly	69	3(4.3%)	21(30.4%)	21(30.4%)	24(34.8%)
8.	Teachers have low level competency in ICT.	69	15(21.7%)	45(65.2%)	9(13.0%)	0(0%)
Total		69	7.7%	33.4%	34.3%	20.6%

The result of the analysis from table 3 shows that 7.7% of the respondents strongly agreed that Christian Religious Studies teachers are competent in using ICT to teach Christian Religious Studies, 37.4% agreed, 34.3% disagreed while 20.6% strongly disagreed. From the results, it is evident that most of the respondents agreed hence most of the Christian Religious Studies teachers are incompetent when it comes to the use of ICT in the teaching and learning of Christian Religious Studies.

DISCUSSION

The aim of the study was to investigate the teaching awareness and use of ICT in the teaching of Christian Religious Studies in secondary schools in Central Zone of Plateau State, Nigeria. Based on the objectives of the study, findings from research question one reveal that most of the respondents agreed that ICT tools are available for teaching of Christian Religious Studies in secondary schools, includes: whatsapp, power point and youtube. This is in disagreement with the findings by Adeyemi (2007) who found out that there were no ICT tools in schools for the teaching of Christian Religious Studies.

Findings from research question two show that Christian Religious Studies teachers are aware of ICT tools like electronic board for visibility and power point presentation that can be used in teaching Christian Religious Studies in secondary schools in the study area. This finding is in tandem with that at Akande (2013) who reported that English teachers were aware of ICT tools for teaching phonetics. This finding also shows that government and schools have not created opportunity for teachers to be trained in ICT application and the few that have been trained are not confident in using the ICT in teaching Christian Religious Studies.

The results of the analysis from research question three reveals that most of the respondents agreed that most of the teachers are incompetent when it comes to the use of ICT in the teaching and learning of Christian Religious Studies. This is also in accordance with the view of Adinu (2010) who reported that because of lack of training, most teachers find it difficult to use ICT coupled with lack of

electricity in schools. This finding also reveals that few of the teachers that can use ICT in teaching Christian Religious Studies learned it on their own using their personal resources and without any formal training for certification.

CONCLUSION

The study was designed to study teachers' awareness and use of ICT in teaching Christian Religious Studies in secondary schools. It was gathered from the study that though Christian Religious Studies teachers are aware of the ICT tools, they are incompetent in their use of the tools in teaching Christian Religious Studies. Furthermore, it was identified that unskilled teachers, cost of purchase, limited time for teaching and lack of motivation affect teaching in secondary schools. The study therefore, concludes that Christian Religious Studies teachers are yet to integrate completely the use of ICT in teaching and learning in secondary schools.

RECOMMENDATIONS

The following recommendations are made based on the findings of the study:

1. Government should ensure that ICT materials are available in schools, to ensure effective learning of Christian Religious Studies.
2. Schools should be deliberate in training their teachers for certification in ICT for effective integration in teaching and learning.
3. Government should organize workshop, seminars and other programmes for teachers on the need of incorporating ICT in the teaching of Christian Religious Studies in secondary schools.

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