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ATTITUDE OF NTI RE-TRAINING PROGRAMME BENEFICIARIES TOWARDS TEACHING OF BASIC SCIENCE AND TECHNOLOGY AMONG PRIMARY SCHOOL TEACHERS IN OGUN STATE, NIGERIA

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ABSTRACT

This paper focused on the attitude of NTI retraining programme beneficiaries towards teaching basic science and technology among primary school teachers in Ogun state, Nigeria. This paper sought to establish the significant role of the NTI retraining programme towards the teaching of basic science and technology among primary school pupils. One hundred and seventy (170) teachers were sampled across ninety-seven (97) schools from four local government areas of Ogun state, Nigeria. The instruments used in collecting data were: the programme beneficiaries' attitude towards teaching BST questionnaire (PBATBSTQ). Data collected were analysed using descriptive statistics. The result revealed that the majority of the beneficiary teachers were female with 73.5% while 26.5% were male. It was equally observed that 40.6% of the beneficiaries were between ages 41-50 and 40% were between ages 31-40. The result also revealed that 97.7% of the beneficiaries ensure that pupils were actively involved in the process of teaching and learning basic science and technology, 93.5% gave attention to pupils' areas of difficulty, and 92.9% enjoy teaching basic science and technology. In conclusion, the results revealed that beneficiary teachers have a positive attitude towards teaching Basic Science and Technology after the retraining programme. This shows that the NTI retraining programme has a great impact on the attitude of the beneficiaries towards teaching basic science and technology among primary schools in Ogun State and the re training program should be continue for the teacher in the state and Nigeria at large.

Keywords: Attitude, NTI Re-Training, Programme, Beneficiaries, Teaching, Basic Science, Technology, Primary School, Teachers, Ogun State, Nigeria.

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INTRODUCTION

Acknowledging the position and the importance of a teacher in educational development, the Federal Government of Nigeria puts that no educational system can rise above the quality of the teacher (FRN, 2014). Therefore, the teacher is the most important factor in any educational process. This means that for any educational system to achieve its objectives, teachers have to be adequately prepared for the task of teaching. The adequate preparation of the teachers depends on certain qualities which are acquired through training and retraining such as workshops, seminars, conferences, etc. (Achimugu et al., 2023).

National Teachers' Institute is a body created to provide an opportunity for teachers in service to refresh and upgrade their teaching skills in the course of practising. They are saddled with the responsibility of; organizing workshops, seminars and conferences as well as formulating policies and initiating programmes that would lead to improvement in the quality and content of education in the country. In taking up the responsibility of training and re-training programmes for teachers, NTI introduced the Nigeria Certificate in Education (NCE) programme through a Distance Learning System (DLS) and Post Graduate Diploma Education (PGDE) programme. It equally provides training for the Pivotal Teachers Training Programme (PTTP) using a distance learning system which came to be in the year 2002 as a means of producing teachers to fill the gap in teacher supply for the Universal Basic Education (UBE) programme (National Teachers Institute, 2001).

To achieve quality education at the primary school level, NTI has embarked on teacher capacity building through annual re-training workshops over the years. These training and re-training programmes offer valuable opportunities for teachers at primary and junior secondary levels to enhance their teaching quality by acquiring new knowledge, innovative skills and attitudes towards teaching basic science and technology. Training and re-training is an important programme that increases the efficiency and productivity of an employee in delivering quality service. Investing in training and re-training programs is essential for improving employee performance, enhancing service quality, and ultimately driving the success of an organization. Equipping teachers with the necessary skills, knowledge, and confidence, primary schools will be sure that they are well-positioned to meet their objectives (McDowall & Saunders, 2010).

Basic Science and Technology have been identified as the core subjects that require training and re-training (Fasasi et al., 2014). The need for quality teaching and learning of Basic Science and Technology in primary schools is of paramount importance to any nation's development in the 21st century and teachers are the key player in achieving this noble objective. NTI's human capacity formation programme in the area of basic science and technology is meant to improve the quality of education at the primary and junior secondary school levels in the context of emerging global challenges. In enhancing teachers' knowledge base, skills and competencies, continuous and appropriate training or re-training of teachers must be encouraged and the provision of necessary resources, materials and infrastructure that will foster sustainable teacher commitment to effective teaching and learning to achieve successful implementation of the National Policy on Education objectives (FRN, 2014).

Education is taking another level due to the global technological changes advancing teaching and learning activities which have required teachers at primary school levels taking basic science and technology to have a re-training program to keep up with other nations of the world in discharging quality education to pupils in primary schools. The problem lies in understanding the specific attitudes of the NTI re-training program beneficiary towards teaching

basic science and technology which will affect the performance of the pupils in this subject area. More so, there is a dearth of empirical evidence on how NTI capacity-building workshops influence teachers' attitudes towards the teaching of Basic Science and Technology in Primary Schools.

The purpose of this research is to explore and investigate the beneficiary teachers' attitudes towards teaching and learning basic technology. One of the factors that affect the output of quality training and retraining programmes for teachers is their attitude. Attitudes can be considered a part of people's belief systems (Jones & Carter, 2013). However, attitude is a construct that has been difficult to define (Tytler, 2014). van Aalderen-Smeets et al. (2012) argued that many attitude studies fail to provide a sound definition for the construct of attitude. Positive attitudes can lead to positive behaviors because non-measurable attitudes can be expressed through behaviors (Ring et al., 2017). Teachers' attitudes can affect the effectiveness of NTI capacity-building implementation. This study investigated the attitude of NTI re-training programme beneficiaries towards teaching basic science and technology among primary school teachers in Ogun state, Nigeria.

van Aalderen-Smeets et al. (2012) defined attitude according to its constituent parts and differentiated it into personal attitudes and professional attitudes, and this aspect is not present in many previous studies. Personal attitude focuses on an individual's attitude toward science, whereas professional attitude focuses more on attitude toward the teaching of science (Ualesi & Ward, 2018). While recognizing that a person's professional attitude toward teaching science may be influenced by their attitude and vice versa (Asma et al., 2011), the current study emphasizes professional attitude, given that the research focused on attitudes toward teaching Basic Science and Technology. In studying the perception of teachers to training and retraining and their attitude to work, Akpan and Ntukidem (2008) noted a significant positive relationship. Obi-Anike and Ekwe (2014) in their study indicated that there is a positive relationship between training/retraining and organizational effectiveness and also increased interpersonal and teamwork.

The attitude of NTI re-training programme beneficiaries towards teaching basic science and technology among primary school teachers is likely to be influenced by factors such as their personal beliefs, professional goals, support systems, and the perceived impact of their efforts on educational outcomes. Beneficiaries may exhibit enthusiasm and eagerness to teach basic science and technology to primary school teachers. They might see it as an opportunity to contribute to the improvement of education standards in their communities, empower fellow teachers with new knowledge and skills, and ultimately enhance the quality of education for children.

The work of Onoshakpokaiye (2013) on the influence of teachers' attitudes on students' learning of mathematics in Nigerian secondary schools revealed that students draw from their teachers' disposition to form their attitude which eventually influences their learning outcomes. The author stressed that the attitude of teachers towards students must be positive to carry the students along. Mensah et al. (2013) observed that the role of the attitude of teachers of Mathematics has garnered the attention of educational researchers and Mathematics educators for a very long time. To study the relationship, Mensah et al. (2013) selected one hundred students (randomly) and four Mathematics teachers (purposely) making a total of one hundred and four respondents. The findings show that teachers' positive attitude radiated confidence in students, making them develop positive attitudes towards learning sciences.

According to the Theory of Action Causes, attitudes influence an individual's behaviour. A teacher's attitude cannot be assessed but can be rendered into observable actions (Alkhateeb,

2018). Hence, beneficiary teachers who attended the NTI capacity-building programmes require confidence an optimistic attitude towards teaching basic science and technology. Therefore, basic science and technology teachers need to develop and maintain a good disposition towards teaching basic science and technology. Meanwhile, teachers of different genders have different attitudes toward the implementation of innovative strategies for teaching basic science and technology. Previous studies indicated that male teachers are more confident than female teachers in the adoption of innovative skills (Lee et al., 2019). Male teachers are also more interested in teaching technology (Shahali et al., 2016). Sciences subjects are often considered difficult resulting in the lack of confidence and interest among female teachers. Nevertheless, female teachers are found to have higher curiosity and awareness compared to male teachers (Akran & Asiroglu, 2018). Female teachers also show a positive attitude towards teaching science subjects. Different perspectives towards the implementation of innovative strategies for teaching science are influenced by their genders. These differences can have an impact on NTI capacity-building and studies need to be carried out to study the implications of this issue

Statement of the Problem

Education is taking another level due to the global technological changes advancing teaching and learning activities which have required teachers at primary school levels taking basic science and technology to have a re-training program to keep up with other nations of the world in discharging quality education to pupils in primary schools. The problem lies in understanding the specific attitudes of the NTI re-training program beneficiary towards teaching basic science and technology which will affect the performance of the pupils in this subject area. More so, there is a dearth of empirical evidence on how NTI capacity-building workshops influence teachers' attitudes towards the teaching of Basic Science and Technology in Primary Schools This study therefore investigated the attitude of the NTI re-training program beneficiaries towards the teaching of basic science and technology among primary school teachers in Ogun state, Nigeria.

Research Questions

Based on the stated problem, this study provided answers to the following questions:

- What is the profile of NTI re-training program beneficiaries in terms of their (i) Gender (ii) qualification (iii) teaching experience (iv) Age and (v) Area of Specialization?
- What is the attitude of the program beneficiaries towards the teaching of Basic Science and Technology after the re-training program?
- Are there significant differences in attitudes of program beneficiaries towards the teaching of Basic Science and Technology after the re-training program by gender?

METHODOLOGY

The study adopted an ex-post-facto design and survey research type. The researcher has no direct influence on the independent variable since it has already occurred. The population for this study comprises all primary school teachers who have participated in the NTI manpower retraining programmes (2006-2019) in Ogun State, Nigeria. A multistage sampling technique was used in

the selection of the participants for the study. There are twenty Local Government Areas each having one Educational Authorities in the three senatorial districts of Ogun State. Four local government areas were selected with simple random sampling from the three senatorial districts. Two LGAs were randomly selected from the East senatorial district being the largest. Simple random selection was used in selecting twenty-seven (27) schools in Ogun West, thirty-two (32) from Ogun Central, and thirty-eight (38) schools from Ogun East making a total of ninety-seven (97).

A purposive sampling technique was used in selecting one hundred and seventy (170) beneficiaries and one hundred and seventy (170) non-beneficiaries taking basic science and technology across the selected primary schools for the study. The instrument used for the study is the “Programme Beneficiaries’ Attitude Towards Teaching BST Questionnaire (PBATBSTQ)”. A section seeks the bio-data information of the participant and the other section consists of eighteen items rated on a 4-point Likert scale: Always True of Me (ATM), True of Me (TM), Fairly True of Me (FTM) and Not True of Me (NTM). The two major psychometric properties of the instrument were determined using the Ordinal Alpha which is a measure of the internal consistency and reliability of the instrument with a value of 0.86. In contrast, the content validity of the instrument was established using the Lawshe Content Validity Index (CVI), which gives a value of 0.77 respectively.

RESULTS

Research Question One: What is the profile of NTI re-training programme beneficiaries in terms of their (i) Gender, (ii) qualification, (iii) teaching experience, (iv) Age, and (v) Area of Specialization?

Table 1: Profile of NTI Re-training Programme Beneficiaries

S/N	Variable	Category	N = 170	Frequency(F)	Percentage (%)
1	Gender	Male		45	26.5
		Female		125	73.5
2	Age (years)	21-30yrs		14	8.2
		31-40yrs		51	30.0
		41-50yrs		69	40.6
		Above 50yrs		36	21.2
		Year of Teaching Experience			
3	Year of Teaching Experience	1-5yrs		8	4.7
		6-10yrs		26	15.3
		11-15yrs		48	28.2
		16-20yrs		31	18.2
		21-25yrs		33	19.4
		Above 25yrs		24	14.1
4	Educational Qualification	NCE		61	35.9
		B.SC/Ed		79	46.5
		M.Sc/M.Ed		30	17.6
5	Area Specialization	Primary Education		53	31.2
		Art/Languages		34	20.0
		Social/ Sciences		83	48.8
6	Number of times Participated	Once		116	68.2
		Twice		35	20.6
		Three Times		19	11.2

Table.1 revealed that 73.5% of the beneficiary teachers were female while 26.5% of the beneficiaries were male. Thus, we had more female than male participants in this study. Also, on the age bracket of the beneficiary teachers, it was observed that 40.6% are between the ages of 41 -50 years of age, 40% between the ages of 31-40 years, 21.2% are above the age of 51 years while 8.2 falls between ages 21 to 30 years. A majority (28.2%) of the beneficiary teachers had 11-15 years of teaching experience, 19.4% had 21-25 years of teaching experience, 18.2% had 16-20 years of teaching experience, 14.1% of the beneficiary teachers had teaching experience above 25 years, 15.3% had 6-10 years' experience while 4.7% had 1-5 years' experience as teacher. On the area of specialization of the beneficiaries' teachers, it was observed that 48.8% specialized in social sciences, 20% in Arts/Languages and 31.2% specialized in primary education. Also, from the table, 68.2% of the teachers indicated that they once attended any capacity-building programme since they joined the teaching profession; 20.6% responded that they attended twice while 11.2% indicated that they attended three times.

Research Question Two: What is the attitude of the programme beneficiaries towards the teaching of basic science and technology after the re-training programme?

Table 2: Attitude of the programme beneficiaries towards the teaching of basic science and technology after the re-training programme

S/N	Teachers' Attitude to Pupils	ATM	TM	FTM	NTM
1	Ensure pupils are actively involved in the process of teaching and learning of Basic Science and technology	111 (65.3%)	55 (32.4%)	1 (.6%)	3 (1.8%)
2	Attention is given to pupils' areas of difficulty in Basic Science and technology	73 (42.9%)	86 (50.6%)	6 (3.5%)	5 (2.9%)
3	Supporting poor pupils is excluded from the teachers' work	30 (17.6%)	45 (26.5%)	23 (13.5%)	72 (42.4%)
4	Ensure that pupils interact with the instructional materials in basic science and technology.	88 (51.8%)	65 (38.2%)	12 (7.1%)	5 (2.9%)
5	Positive behaviour in pupils is praised	86 (50.6%)	67 (39.4%)	7 (4.1%)	10 (5.9%)
6	Pupils' hand writings discourage me from marking their works	24 (14.1%)	31 (18.2%)	38 (22.4%)	77 (45.3%)
Disposition to Teaching					
7	I enjoy the teaching of Basic Science and technology	75 (44.1%)	83 (48.8%)	5 (2.9%)	7 (4.1%)
8	I attend Basic Science and technology classes promptly	77 (45.3%)	79 (46.5%)	11 (6.5%)	3 (1.8%)
9	Making an effort to improve my knowledge of Basic Science and Technology is a priority for me	77 (45.3%)	77 (45.3%)	13 (7.6%)	3 (1.8%)
10	Attending workshops, and seminars in Basic Science and Technology make me feel delighted	79 (46.5%)	68 (40.0%)	15 (8.8%)	8 (4.7%)
11	I am eager to apply the knowledge gained in workshops and seminars	86 (50.6%)	66 (38.8%)	11 (6.5%)	7 (4.1%)
Use of Instructional Materials					
12	I use instructional materials to facilitate an understanding of Basic Science and Technology	102 (60.0%)	53 (31.2%)	9 (5.3%)	6 (3.5%)

Attitude to Teaching Techniques					
13	Innovative strategies that involve learner-learner interaction are difficult to achieve	36 (21.2%)	51 (30.0%)	40 (23.5%)	43 (25.3%)
14	I am eager to use modern innovative techniques in basic science and technology.	80 (47.1%)	75 (44.1%)	9 (5.3%)	6 (3.5%)
15	Improvising instructional materials to improve pupils' learning of Basic Science and Technology	82 (48.2%)	76 (44.7%)	8 (4.7%)	4 (2.4%)
16	I use innovative techniques to facilitate pupils' understanding of Basic Science and Technology	70 (41.2%)	87 (51.2%)	5 (2.9%)	8 (4.7%)
17	My school management contributes to my hatred for teaching.	27 (15.9%)	24 (14.1%)	21 (12.4%)	98 (57.6%)

Table 2 shows the attitude of the programme beneficiaries towards the teaching of basic science and technology after the re-training programme. The result reveals that 97.7% of the respondents ensure pupils are actively involved in the process of teaching and learning basic science and technology. 93.5% stated that attention is given to pupils' areas of difficulty in basic science and technology. Also, the majority indicated that they ensure that pupils interact with the instructional materials in basic science and technology and positive behaviour in pupils is praised. However, the majority had contrary views on 3 and 6. This implies that the respondents have positive attitude pupils.

On beneficiary teachers' disposition to teaching, the majority of the teachers (92.9%) enjoy the teaching of basic science and technology, and 91.8% indicated that they attend their classes promptly. 86.5% thought that attending workshops, and seminars in basic science and technology makes them feel delighted. It was also revealed from the table that 89.4% of the teachers indicated that they are eager to apply the knowledge gained in the workshop and seminar. This shows that the beneficiary teachers developed a good disposition towards teaching. The result further revealed the positive attitude of beneficiary teachers towards the use of instructional materials.

On beneficiary teachers' attitude to teaching techniques, 91.2% stated that they are eager to use modern innovative techniques in basic science and technology, and 92.7% further revealed that they improvised instructional materials to improve pupils' learning. On the school management contribution, it was revealed that hatred for teaching is not the effort of school management contribution while 30% show that their hatred for teaching is due to school management. Based on the observation and the direction of the result, it can be observed that beneficiary teachers have a positive attitude towards teaching basic science and technology after the re-training programme.

Research Question Three: Are there significant differences in attitudes of programme beneficiaries towards the teaching of basic science and technology after the re-training programme by gender?

Table 3: Difference in attitudes of programme beneficiaries towards the teaching of basic science and technology after the re-training programme by gender

Gender	N	Mean	SD.	df	T	Sig	P	Remark
Male	45	33.98	10.231	168	1.467	.321	.05	Not-significant
Female	125	35.25	11.113					

The result presented in Table 4 shows that $df(168) = -1.467$, $p = 0.321$ since the p-value of .321 is greater than .05 level of significance; this means that there is no significance difference in attitudes of programme beneficiaries towards the teaching of basic science and technology after the re-training programme by gender. Female beneficiary teachers ($\bar{x} = 35.25$, $SD = 11.113$) while the male beneficiary teachers' attitudes towards teaching basic science and technology ($\bar{x} = 33.98$, $SD = 10.231$). However, the mean difference was not statistically significant. Therefore, from the result of the analysis, the conclusion could be made that in attitudes of programme beneficiaries towards the teaching of basic science and technology after the re-training programme were not based on the beneficiary gender.

DISCUSSION OF FINDINGS

The main objective of this study was to examine the attitude of NTI re-training programme beneficiaries towards teaching basic science and technology among primary school teachers in Ogun State. The findings revealed that 73.5% of the beneficiary teachers were female while 26.5% of the beneficiaries were male. Also, on the age bracket of the beneficiary teachers, it was observed that 40.6% are between the ages of 41 -50 years of age, 40% between the ages of 31-40 years, 21.2% are above the age of 51 years while 8.2 falls between ages 21 to 30 years. A majority (28.2%) of the beneficiary teachers had 11-15 years of teaching experience, 19.4% had 21-25 years of teaching experience, 18.2% had 16-20 years of teaching experience, 14.1% of the beneficiary teachers had teaching experience above 25 years, 15.3% had 6-10 years' experience while 4.7% had 1-5 years' experience as teacher. Olalere (2005) asserted that a teacher's qualification, to a larger extent determines his capability, competence and ability to teach effectively. He added that the professional competence of the teacher is sharpened by the mastery of the curriculum contents, teaching skills and dynamic globalization of the subject matter. On the area of specialization of the beneficiaries' teachers, it was observed that 48.8% specialized in social sciences, 20% in Arts/Languages and 31.2% specialized in primary education.

Also, from the table, 68.2% of the teachers indicated that they once attended any capacity-building programme since they joined the teaching profession; 20.6% responded that they attended twice while 11.2% indicated that they attended three times. Okureme (2003) indicated that achieving the goals of science education requires qualified and highly scientifically literate teachers. Effective teachers' develop positive attitude towards teaching (Dahar et al., 2011). This is because teachers' attitudes have a major effect on the behaviour in adopting different innovative skills that can enhance learners' achievement in Basic Science and Technology (Murcia & Pepper, 2018). Academically qualified teachers have more authentic knowledge about the relevant subject than the academically less qualified teachers have Nigerian Science Teachers. It may be provided at any time between joining the service and retirement.

The findings concerning research question two revealed that beneficiary teachers have a positive attitude towards teaching Basic Science and Technology after the retraining programme. The teachers considered NTI retraining/workshop as a way of improving their general professional well-being. Findings from the study show that 97.7% of the respondents ensure pupils are actively involved in the process of teaching and learning Basic Science and technology. 93.5% stated that attention is given to pupils' areas of difficulty in Basic Science and technology. Also, the majority indicated that they ensure that pupils interact with the instructional materials in Basic Science and Technology and positive behaviour in pupils is praised. This implies that the respondents have a positive attitude toward pupils. Also, the findings further revealed the positive attitude of beneficiary teachers towards the use of instructional materials. On beneficiary teachers' attitude to teaching techniques, 91.2% stated that they are eager to use modern innovative techniques in Basic Science and Technology.

Mukherjee and Maity (2019) reported that respondent teachers have a positive attitude toward the use of ICT resources and that the training had a more significant positive impact on the attitude toward teaching Basic sciences. 92.7% further revealed that they improvised instructional materials to improve pupils' learning. On the school management contribution, it was revealed that hatred for teaching is not the effort of school management contribution. It can be seen that teachers' opinions on re-training of teachers are commendable. Based on the observation and the direction of the result, it can then be inferred that beneficiary teachers have a positive attitude toward the programme beneficiaries towards teaching Basic Science and Technology after the re-training programme.

These findings are in agreement with the findings of Udey (2018), Nakpodia (2018) and Akinbode (2016). These researchers see in-service training for teachers as a process for continuously updating teachers' knowledge, skills and interest in their chosen profession. They concluded that teachers who had a low commitment to the profession before training became highly committed after they were allowed to go for in-service training. This in-service training served to boost teachers' morale and engendered a positive attitude to work. This finding in addition collaborated with the findings of Udofia and Ikpe (2012) that in-service training or retraining programmes had a significant influence on teachers' attitudes to work. Positive attitude as one of the ingredients of greatness in life must be induced in the classroom teachers for them to perform optimally.

The right attitude toward their work would impact positively their learners by getting them to appreciate and cultivate good values that can translate to societal greatness. In other words, a teacher must love being a teacher irrespective of gender and experience; it is by loving their job that their best can be tapped in a conducive environment. Therefore, one way to create a positive work attitude for the current crop of Nigerian teachers is through in-service training and re-training programmes to impact the right attitudes which would go a long way in bringing success to the Sustainable Development Goal (SDGs). In addition, findings reveal that the attitudes of programme beneficiaries towards the teaching of Basic Science and Technology after the re-training programme were not based on the beneficiary's gender. That also means that the gender of the beneficiary teachers does not significantly influence their attitude towards teaching Basic Science and Technology after the retraining programmes.

Conclusion/Recommendations

This study revealed that the NTI retraining program significantly impacted the beneficiary teachers as the programme increased their attitude towards pupils, disposition toward teaching, use of instructional materials and teaching techniques towards teaching basic science and technology. In addition, the retraining programme provides the teacher with ground to update their skills, and knowledge, and enhance their innovative teaching approaches. This school-based teachers' development (SBTD) approach for continuing the professional development of teachers at the basic (primary) education level should be adopted in providing teachers access to such training so as to improve their attitude towards teaching.

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