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MATHEMATICS TEACHERS' IN-SERVICE TRAINING PROGRAMME TOWARDS ATITUDE TO WORK AND STUDENTS' INTEREST IN MATHEMATICS IN AKWA IBOM STATE, NIGERIA

Ekim, R. E. D (Ph.D)
Department of Educational Foundations, Guidance and Counseling,
Faculty of Education, University of Uyo
roseline2014godwinhf@gmail.com

Akpan, S. M. (Ph.D)
Department of Educational Foundations,
Faculty of Education, University of Calabar
drsam9akpan@yahoo.com

&

Dada Oluseyi Akintunde
Department of Special Education, Faculty of Education,
University of Calabar, Nigeria.
seyidada23@gmail.com

Abstract

This study investigated Mathematics teachers' in-service training programme towards attitude to work and students' interest in Mathematics in Akwa Ibom State. The study adopted a descriptive survey research design and employed multistage sampling techniques to select the 134 Mathematics teachers in the state from the 530 Upper Basic Mathematics teachers in Akwa Ibom State. Two research instruments were used: Mathematics Teachers' Attitude to Work Questionnaire (MTAWQ) and Students' Interest in Mathematics Questionnaire (SIMQ). The MTAWQ was used to assess the Mathematics teachers while SIMQ was used by the students to assess their Mathematics teachers. The instruments were content validated and have reliability coefficients of .89 and .90 respectively using the Cronbach- Alpha method. The data collected were analyzed using descriptive statistics and one-sample t-test statistics. The results revealed that the extent of mathematics teachers' in-service training programme towards their attitude and students' interest in the subject was high and there were statistically significant positive changes in teachers' attitude to work and learners' interest due to the training programme. It was concluded that, the in-service training programme organized for Mathematics teachers in Akwa

Ibom State was relevant to the teachers' attitude to work and the students' interest in mathematics. Based on the findings, it was recommended that the government should ensure regular in-service training programme for Mathematics teachers most especially the newly employed ones in the state.

Keywords: Mathematics teachers, attitude to work, students' interest.

Introduction

Mathematics is so connected to many other subjects and therefore it is a determinant of success to all kinds of profession. Thus, Mathematics as a vital subject enables the development of critical and logical thinking in learners. This implies that mathematics teachers should be creative, resourceful and competent in other to help develop students' interest in learning the subject. Mathematics by its concept, is a way of knowing, a means of achieving or ensuring certainty that relied on deductive proof from self-evident principles (Thomas, Good, Douglas & Grouws, 2007). Learners' success in mathematics requires effective teaching as such demands that mathematics teachers should acquire skills to bring about success. They should be able to possess some level of competences that will ensure quality standard in the teaching of Mathematic. Obanya (2014) and Asiyai (2015) stated that good quality of teachers will ultimately engender quality progress in the education industry.

However, one of the fundamental problems facing mathematics education is the lack of competent teachers in the field of mathematics. This to a great extent impedes on the ability of the students to understand and appreciate the subject even from the basis. This invariably means that, according to Azuka (2003), a teacher who have only a shallow understanding of mathematics cannot deliver effective teaching that would impart the necessary knowledge to the students, as a result there exist a gap between the contents and its application which invariably will affect student's knowledge of applicability. This deficiency constitutes a greater challenge to mathematics education in Nigeria. This perhaps is the reason among others, why the government

of Federal Republic of Nigeria usually embark on regular training of teachers, most especially mathematics teachers in collaboration with Strengthening Mathematics and Science Education (SMASE) Nigeria Project, National Teachers Institute (NTI), School Based Training (SBT), Mathematics Association of Nigeria (MAN) and many other educational agencies to help foster their professional competency in the teaching and learning processes. According to Anyang (2009), teachers' need periodic training and re-training programmes to enable them acquire the most recent advancement in knowledge, skills, attitudes and work habit that will enable them perform their tasks creditably.

Teachers' in-service training is the relevant courses and activities in which a serving teacher may participate to upgrade his professional knowledge, skills, and competencies in the teaching profession (Osamwonyi, 2016). He stated that teachers' in-service training programme is designed for the development of manpower in the school system and the educational enterprise as a whole. Furthermore, he said, if teachers are to perform their functions effectively and efficiently, it becomes imperative for them to require training new skills and modern methodology. The in-service training programme for mathematics teachers has a number of objectives which include to improve the overall quality of teaching and learning at the classroom level; sharpen the teachers' skills and methodology; improve the teachers' instructional skills and practices; empower the teachers to have a more positive impact in the classrooms and encourage the teachers to utilize effective methods and better lesson plan development skill (UBEC, 2004). Thus, in-service training programme for Mathematics teachers' may bring about a positive attitude to work and enhance students' interest in the subject which could in turn improve academic performance.

Attitude as a concept is concerned with an individual way of thinking, acting and behaving (Arinde, 2010). It has very serious implication for the learner, the teacher, the immediate social group with which the individual learner relates and the entire school system. Attitudes are formed as a result of some kinds of learning experiences. They may also be learned simply by following the example or opinion of parent, teacher or friend. This mimicry or imitation also has a role to play in the course of teaching and learning. In this respect, the learner draws from his teachers' disposition to form his own attitudes, which may likely affect his learning outcomes. According to Gourmeanu (2010), attitude deals with empathy and it helps in understanding learners. However, unfortunately many teachers hardly recognize the fact that, the way they teach, interact or behave with their students may be more important than the lesson itself. On the whole, about 43% or more of teachers' attitude which may be influenced by their culture may directly or indirectly affect the students' attitude. In this vein, teachers' attitudes towards their students must be favorable enough in order to carry their students along. When learners exhibit the expanded behavior or response, the value attached determines very significantly the effectiveness of the learning processes in any aspect of education.

Interest is a personality factor that can be defined as a variable which could predict the level of learning difficulty of a student in a certain area of study. According to Bolarin as cited in Adodo (2013), Interest is more than a discipline and is a key to education success. He further ascertained that, learners will learn better in subjects or course if they have some degree of likeliness for such subjects. In support of this, Adodo (2012) added that learners will fail to learn or learn little if they do not like the subjects. Hervie and Winful (2018) mentioned that teachers are sources of encouragement to their students. Peters (2011) stated that students' interest can be enhanced by the teachers' enthusiasm, resourcefulness and helpful behavior, thorough knowledge of the

subject matter and the making of Mathematics interesting. Therefore, interest at a higher stage become a subjective feeling of value which is experienced when striving. Interest brings about devotion and thereby a successful outcome.

In view of the vital nature of learning interest and teachers' attitude in education industry the works of few researchers among others were reviewed; Udofia and Ikpe (2012) designed a study to investigate the influence of administration of in-service training teachers' attitude to work in private secondary schools in Cross River State of Nigeria. The findings show that the administration of in-service training programme was a good one since it significantly influences teachers' attitude to work. Paul, Eric, Hamshek, Sarah, Glewwe, Humpage and Ravina (2013) jointly investigate which specific school and teacher character, appears to have strong positive impacts on learning. Using the studies published between1990-2010, in both education literature and economics literature the study revealed that the estimated impacts on learning of most schools and teachers' characteristics are statistically insignificant however few variables such as teacher absence, teacher knowledge of the subjects have significant effects. In the same vein, Onuoha (2011) reported in one of his findings that teachers' attitude towards science is a significant predictor of science pupils' achievement alongside with their attitude. Secondly, that teachers' attitude towards the teaching of Mathematics play a significant role in shaping the students' attitude towards the learning of Mathematics.

Whereas the in-service training programme for Mathematics teachers has been on for some years in Akwa Ibom State, the information on how well the programme has achieved its expected objective is scarce. Oyakegha (2011) argues that, an integral part of a training is to assess the impact of the programme to ensure that the expectation of the training has positive impact on its beneficiaries. In view of this, the present study is designed to investigate Mathematics teachers'

in-service training programme towards mathematics teachers' attitude to work and in the development of student interest in mathematics.

Research Questions

The following research questions guided the study

1. What is the extent of Mathematics teachers' in- service training programme towards their attitude to work in Akwa Ibom State?
2. What is the extent of Mathematics teachers' in- service training programme towards students' interest in Mathematics in Akwa Ibom State?

Hypotheses

The null hypotheses formulated and tested in this study are

1. Mathematics teachers' in-service training programme towards their attitude to work in Akwa Ibom State is not significant.
2. Mathematics teachers' in-service training programme towards students' interest in Mathematics in Akwa Ibom State is not signif

Method

The descriptive survey research design was employed in this study. The target population of this study was 530 Upper Basic Mathematics teachers in Akwa Ibom State Mathematics teachers from the 25 Local Education Committees (LECs) present in Akwa Ibom State. A sample size of 134 Mathematics teachers sampled from 18 LECs in the state participated in the study. This was selected through stratified and simple random sampling techniques. The researchers first used stratified sampling technique to select 18 LECs out of the 25. This was followed by simple random sampling technique which was used to select thirty (30) per-cent of Mathematics teachers and students from the selected LECs thereby, giving a total of 134

Mathematics teachers and students sampled. Two instruments were used by the researcher to gather relevant data for this study, Mathematics Teachers' Attitude to Work Questionnaire (MTAWQ) and Students' Interest in Mathematics Questionnaire (SIMQ). The MTAWQ was used to assess the Mathematics teachers while SIMQ was used to assess students. Each of the instruments consists of twelve items of a likert scale format (Strongly Agree; Agree; Disagree and Strongly Disagree). The instruments were content validated by experts in Educational Measurement and Evaluation for their scrutiny.

Correction made were implemented in the final version of the instruments. The Cronbach Alpha method was used establish the reliability, which gave coefficient of 0.89 and 0.90 for MTAWQ and SIMQ respectively. Data collected were analyzed using mean and standard deviation for the research questions and one sample t- test for the hypotheses at .05 level of significance and the population mean of (15.00). This implies that the in-service training had impact with respect to the variables under investigation on.

Results

The results were also presented and interpreted against each research question and hypothesis

Table 1: Descriptive Statistics of Mathematics Teachers' In-service Training Programme towards Teachers' Attitude to work.

Variable	N	Mean	Std. Dev.	Theoretical Mean	Decision
In-service training programme towards teachers' attitude to work	134	32.16	2.08	25.00	High Extent

Table 1 shows a total of 134 respondents having a mean value of 32.16 and a standard deviation of 2.08, and a theoretical mean 25.00. Comparing the theoretical mean with the mean

value, the mean is greater, hence Mathematics teachers' in-service training programme towards teachers' attitude to work have a high extent.

Table 2: One Sample T- test Statistics of Mathematics Teachers' In-service Training Programme towards Teachers' Attitude to work.

Variable	N	Mean	Std. Dev.	t- cal	p-value (Sig. 2-tailed)
In-service training programme towards students' interest in mathematics	134	32. 16	2.08	88.93	.000

*test value = 25; significant at 0.05 level; df = 133; critical t-value = 1.98

Table 2 shows t- value of 88.93 significant at .000, comparing the p- value and the alpha value, the p- value is less than ($p< 0.05$) the alpha value. Therefore, the null hypothesis is rejected. This implies that, the Mathematics teachers in-service training programme has significantly improved teachers' attitude to work in Akwa Ibom State.

Table 3: Descriptive Statistics of Mathematics Teachers' In-service Training Programme towards Students' Interest in Mathematics.

Variable	N	Mean	Std. Dev.	Theoretical Mean	Decision
In-service training programme towards students' interest in mathematics	134	34.54	1.63	25.00	High Extent

Table 3 shows a total of 134 respondents having a mean value of 34.54 and a standard deviation of 1.63, and a theoretical mean 25.00. Comparing the theoretical mean with the mean value, the

mean is greater, hence Mathematics teachers' in-service training programme towards students' interest in mathematics have a high extent.

Table 4: One Sample T- test Statistics of Mathematics Teachers' In-service Training Programme towards Students' Interest in Mathematics.

Variable	N	Mean	Std. Dev.	t- cal	p-value (Sig. 2-tailed)
In-service training programme towards students' interest in mathematics	134	34. 54	1.63	121.72	.000

***** test value = 25; significant at 0.05 level; df = 133; critical t-value = 1.98

Table 4 shows t- value of 121.72 significant at .000, comparing the p- value and the alpha value, the p- value is less than ($p< 0.05$) the alpha value. Therefore, the null hypothesis is rejected. The result implies that, the Mathematics teachers' in-service training programme has significantly improved their students' interest in Mathematics in Akwa Ibom State.

Discussions

The analysis of the result in the Table 1 revealed that mathematics teachers' in-service training programme towards teachers' attitude to work is impactful at a high extent since the theoretical mean (25.00) > the mean value (15.00). As recorded in Table 2, t- value of 88.93 is significant at .000 and it can be seen that the p-value < alpha value, ($p<0.05$). Thus, the null hypothesis is rejected. This result also indicates that mathematics teachers' in-service training programme has significantly improved teachers' attitude to work in Akwa Ibom State.

The findings above are in consonant with the finding of Onuoha (2011) who revealed that teachers' attitude towards the teaching of Mathematics plays a significant role in shaping the attitude of students towards the learning of Mathematics. Similarly, the result of the study is in line with Udofia and Ikpe (2012) whose finding revealed that the administration of in-service training programme was a good one since it significantly influences teachers' attitude to work in Private Secondary School. In the same vein, the study findings agree with Paul et al. (2013) whose research findings revealed that the estimated impacts on learning of most schools and teachers' characteristics are statistically insignificant however few variables such as teacher absence, teacher knowledge of the subjects have significant effects.

This result in Table 3 shows that Mathematics teachers' in-service training programme towards students' interest in Mathematics have a high extent. While Table 4 revealed t-value of 121.72 which is significant at .000. Since the p-value is less than the alpha value ($p< 0.05$), the null hypothesis is rejected. This findings implies that the Mathematics teachers' in-service training programme has significantly improved their students' interest in Mathematics in Akwa Ibom State. This findings confirm the report of Peters (2011) who observed that students' interest can be enhanced by the teachers' enthusiasm, resourcefulness and helpful behavior, thorough knowledge of the subject matter and the making of Mathematics interesting. The findings showed that teachers are sources of encouragement to their students as mentioned by Hervie and Winful (2018). Students' interest towards an academic subject is a crucial factor in learning and achievement. When a learner have a strong likening or subjective feeling of value in mathematics, it boosts his motivation to acquire mathematical knowledge and thereby the learner's success.

Conclusion

The study was conducted to investigate Mathematics teachers' in-service training programme towards atitude to work and students' interest in Mathematics in Akwa Ibom state. Specifically to assess the extent of extent of teachers' in- service training programme towards their attitude to work and students' interest in the subject. Base on the findings it was concluded that the in-service training programme organized for Mathematics teachers in Akwa Ibom State was relevant to the teachers' attitude to work and the students' interest in Mathematics.

Recommendations

Base on the objectives and findings of this study the under listed recommendations were made:

1. The study strongly recommends regular practice of teachers' in-service training in all states of Nigeria as the training was found impactful towards learners' interest and motivation.
2. To enhance the effective training of teachers on their attitude and work performance, enough time is required. Thus, all levels of government and non-governmental organizations (NGO) should direct more effort towards training the Mathematics teachers on right attitude towards their work.

References

Adodo, S. O. & Gbore, L.O. (2012). Prediction of attitude and interest of science students of different ability on their academic performance in basic science. *International Journal of Psychology and Counselling, 4 (6), 68-72.*

Adodo, S. O. (2013). Effect of mind-mapping as self-regulated learning strategy on students' achievement in basic science and technology. *Mediterranean Journal of Social Sciences 4 (6),* 163-180.

Amadi, M. N. (2014). *In-service training and professional development of teachers in Nigeria: Through open and distance education*. Department of Educational Administration, University of Lagos: Eric.ed.gov/full text/Ed567172.

Arinde, M. R. (2010). *Educational services, teacher quality and students' academic performance in public senior secondary schools.* North Central Zone, Nigeria.

Azuka, B.F. (2003). The challenges of mathematics in Nigeria economic and technical development. Implication for tertiary education. *ABACUS.* 28(1), 18-26.

Ayang, E. E. (2009). Evaluation of engineering education programme in Nigerian Universities in South-Eastern zone: A comparative analysis of state and federal universities. Unpublished Ph.D: Thesis. Faculty of Education, University of Calabar, Nigeria.

Balta, N., Duru, H., & Arslan, M. (2015). *The effect of in- service training courses on teacher achievement. A meta- analysis studies*. Retrieved from: https//www.reserachgate.net. (retrieved 23/7/18).

Hervie, D. M. & Winful, E. C. (2018). Enhancing teachers' performance through training and development in Ghana education service (A case study of Ebenezer senior high school). *Journal of Human Resource Management, 6* (1), 1-8.

Obanya, P. (2014). Educationeering. Ibadan, Nigeria: HEBN Publishers PLC.

Osamwonyi, E. F. (2016). In-service education of teachers: Overview, problems and the way forward. *Journal of Education and Practice* 7, (26), 83-87.

Oyakegba, J. A. (2011). Evaluation of the National Open University Education programmes in South-South Geopolitical Zone of Nigeria. *Unpublished Ph.D. Thesis,* Faculty of Education, University of Calabar, Calabar, Nigeria.

Peters, J. H (2012). Are they ready? Final year teacher education students' teachers' learning about managing student behavior. *Australian Journal of Teacher Education, 37* (9), 18-42. Retrieved from:https://doi.org/10.14221/ajte.2012v37v9.2.

Thomas, L. G. & Douglas, A. G. (2007). *Increasing teachers' understanding of Mathematical ideas through in-service training.* Retrieved from: http://www.jstor/stable/20403505?seq=Ipagescan-tab-content.

UBEC (2004). *Universal Basic Education Commission standard action plan: Based on the UBE Act.* Abuja: Universal Basic Education Commission.

Udofia, U. I. & Ikpe, U. N. (2012). Administration of in-service training and teachers' attitude to work in private secondary schools in Cross River State of Nigeria. *International Journal of Academic Research in Business and Social Sciences, 2* (10), 305-311