Multidisciplinary Research and Development Journal Int'l
https://mdrdji.org
Vol 5 Issue 1. May 2024

TREND SKILLS NEEDED BY TEACHERS FOR EFFECTIVE TEACHING OF MATHEMATICS IN EBONYI STATE

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ABSTRACT

The study focused on trend skills needed by teachers for effective teaching of mathematics in Ebonyi State. Three research questions and two null hypotheses guided the study. The study adopted descriptive survey design. The population of the study was five hundred and seventy-five teachers of mathematics which was taken as sample because of the manageable size. Therefore, the sampling was purposive sampling technique. Structured questionnaire was developed and used for data collection. Three curriculum experts validated the instrument. Four hundred and two respondents returned the completed questionnaire. Cronbach alpha coefficient method was used to determine the internal consistency of the instrument which yielded a coefficient of 0.77. Three research assistances helped to administer the questionnaire. Weighted mean and standard deviation were used to answer the research questions while the t-test statistic was utilized to test the hypothesis at 0.05 level of significance. The findings of the study revealed that: lesson planning skills, lesson implementation skills and evaluation skills are skills needed by mathematics teachers for effective teaching of mathematics. It was recommended that Ebonyi State government should from time-to-time organized seminar and workshop to re-train mathematics teachers on skills for effective teaching of mathematics, and teachers of mathematics should always embark on in- services training in order to cope with current trend skills in teaching of mathematics.

Keywords: Skills, Teacher effectiveness, Teaching, Mathematics

Introduction

Skill is a quality of being functionally adequate or having sufficient knowledge, judgments, expertise or strength (as for a particular duty or in a particular respect). According to Olaitan (2017), to be competent means that the individual has acquired the knowledge, skills, attitude and judgments which are needed in other to perform successfully at a specified proficiency level in a given work. Skill is referred to as the capacity or potentiality to perform (Karakus and Turhan, 2013). Skills comprised knowledge, novelty and experience needed to perform a particular job or series of jobs (Penny, 2019). More so, skill is ability for someone to do something that is inherent or acquired effectively. Wikipedia (2018) defined skill as the learned capacity to carry out pre-determined results often with the minimum outlay of time, energy or both. To learn required someone to train the leaner, and the one who trains the learner is the teacher.

Teacher is the key to nation-building and development, the aspiration of any nation to transform into a great country can only be possible if there are skillful and dedicated teachers to impart the appropriate knowledge, attitude and expertise. The teacher remains the producer of all other professionals like lawyers, doctors, pharmacists, engineers and architects to mention but a few. Teachers play a major role in the society in the development of adequate manpower resources. Okwor in Awah (2017) opines that the most important single contribution of teacher to the development of any society is basically the development of adequate manpower resources. No one talks of manpower resources without the professionals produced by the teacher at the various stages of education. In line with the above, FRN (2013) made it clear that the aim of teacher education is to produce highly motivated, conscientious and efficient classroom teachers, and to enhance their commitment to the teaching profession. These teachers are trained to be skillful and professional in various subjects as English, Igbo, physics, Mathematics, among others.

A teacher of mathematics can be described as someone who is trained; who has acquired the right knowledge, ideas, skills, attitudes and concepts in mathematics as well as methodology of teaching the subject matter to the students. Teachers of mathematics are expected to possess the necessary skills needed for effective teaching in Nigeria as the achievement of the students is relied largely on teachers (Nwagbara & Edith 2014)

Effective teaching means, giving the right training through which the desired objectives may be achieved and students may learn with full understanding (Khan, 2017). It gets the students ready to connect previous knowledge with new

knowledge. It also aids the students to work in the changing environment as a result of knowledge acquired. Teaching of any school subject needs to be effective for learning to occur. This includes the teaching of mathematics.

Mathematics is a branch of science, which deals with numbers and their operation. The concept of mathematics has been historically developed through the use of abstraction and logical reasoning, from counting, calculation, measurement, and study of shapes and motion of physical objects (Roohi, 2017). It is one of the subject that challenge the learners reasoning and understanding abilities, among other subjects. It is a subject that demands the knowledge of the concept, procedure and a connection between previous and new knowledge. Any poor foundation of knowledge in mathematics can cause problems in the understanding and achievement in the subject. Moreover mathematics is universal in its application in every field of study. Hence, it required skilled teachers to make teaching of Mathematics effective since effective learning of mathematics in schools required effective teaching to accompany learners' effort (Nbina, 2012). Their skills must thus relate to academic and professional preparation, professional growth, classroom interaction and evaluation (Nbina, 2012).

Skill in education is described as a habitual and judicious use of knowledge, communication, technical skills, reasoning, values and reflection in daily practice for the benefit of the learners and the nation at large (Erdogdu and Kurt, 2012). They further stated that for meaningful teaching to take place, Teacher skill needs to be very high. The higher the skill of the teacher, the higher will be the students' learning and the retention of the learning. Skills to be considered in this contexts ranges from lesson planning skills, lesson implementation skills and lesson evaluation skills.

Lesson planning skills in mathematics involve creating a detailed and organized outline of what will be taught in a particular class or unit (Alnoor, Yuanxiang, Abudhuim, 2017). This includes determining learning objectives, selecting appropriate activities and resources, and sequencing contents in a logical order to ensure student understanding. Effective lesson planning also involves considering the diverse needs and abilities of students, incorporating different teaching strategies and methodologies to cater for various learning styles.

Lesson implementation skills in mathematics require the ability to effectively deliver the planned lesson in a way that engages students and promotes active learning (Aseeri, 2015). This may involve using a variety of instructional methods such

as lectures, group work, discussions, demonstrations, and hands-on activities to help students grasp mathematical concepts and skills. Teachers must also be able to adapt their teaching approach in real-time based on student responses and feedback to ensure maximum comprehension and retention of information.

Lesson evaluation skills in mathematics involve assessing student learning and progress towards meeting specific learning objectives. Having skill on test item generation, nature of the students to evaluate, scoring of the instrument and the technique of assessments. This may include using formative assessment techniques such as quizzes, homework, assignments, and class discussions to judge students understanding during the lesson. Teachers can also use summative assessments such as tests and projects to evaluate students' overall mastery of mathematical concepts and skills. Effective lesson evaluation in mathematics requires teachers to analyze assessment data, provide constructive feedback to students, and make instructional adjustments as needed to improve student learning outcomes.

When a teacher exhibits skill in his or her duties students performance will be affected positively (Nbina, 2012). It is the totality of the teacher that is reproduced in students (Atueyi, 2015). Nbina (2012) observed that students' performance in mathematics in external examinations such as WAEC, NECO, or UTME have not been encouraging probably due to the teacher's lack of expertise or skill which could result from the use of poor teaching method. Nimbra, (2015) stated that the way teachers handle classroom instructions has led to poor performance of students in senior certificate Examinations. This indicates that learning in not going on effectively in schools. The mathematics teacher is expected to posses certain skills such as engaging and supporting all learners, creating and maintaining an effective environment for students learning, understanding and organizing subject matter for students learning, planning instruction and designing learning experiences for all students and evaluating students learning (Erduga and Kurt, 2012). Other skills are using the appropriate methodologies of teaching mathematics and observing such principles as teaching from concrete to abstract, known to unknown, and from simple to complex while ethical skill is having the right attitude in teaching (Roxas, 2015). The mathematics teacher's success in the classroom depends very much on his or her preparedness for the instructional process. Qualified mathematics teachers are in the best position to give quality education to the student. Teacher skill also required ability to use technology to enhance students

learning, good communication skill, and maintaining effective and good working relationship with learners. Buket and Turhan (2018) also pointed out that as professionals; teachers are responsible for keeping themselves updated with educational trends and improving their skills throughout their career.

Teachers need to improve skills and knowledge to enhance, improve and investigate their teaching practices. The policy of education changes very quickly depending on the needs of the society thus, requiring more capability. These demands directly affect educational system. Teachers' skills must be reviewed in consonance with emerging issues in teacher education. Teachers are responsible for operating educational system and they need strong and efficient professional skills. Lack of teaching skills queries the attainment of optimal teachers' performance in mathematics. Assessing teaching skills of mathematics teachers is very important in ensuring quality learning and education of our students, to give them the needed knowledge and skills for life or further study. Therefore there is the need to determine professional skills needed by teachers for effective teaching of mathematics in senior secondary schools in Ebonyi State.

Statement of Problem

Failure of students to pass mathematics at credit levels in NECO or WASCE could be associated with inability of teachers to effectively teach students. Most mathematics teachers lacks the needed skills for effective teaching of mathematics and this has affected students performance both in the internal and external examinations. The knowledge of mathematics is indispensible owing to its relevance to every aspect of life. In addition, pursuit of higher studies also demands good knowledge and understanding of basic mathematics as it is relevant in research and statistics. At present the level of performance of students in mathematics at the senior secondary school level in the past few years in Ebonyi State is very poor and demands urgent attention to remedy the situation.

Poor performance in mathematics can be attributed to many factors of which effective teaching is one of them. Effective teaching is carried out by teachers skilled in pedagogy and technical knowhow. This calls for teachers' reorientation to enhance effective teaching. This cannot be achieved without proper overhaul of teacher skill. Pre-service education and training giving to teachers while in school is subject to change with changes in curriculum reforms, technology and methodology of teaching. Changes arising from technology and methodology of teaching demand that teachers need to update their knowledge and pedagogical skills to enable them to impact the intended learning skills effectively. Teachers' development has not been given the

required attention resulting to the dwindling state of education sector as experienced in student performance in mathematics. Failure of teachers to update themselves makes them out-dated and uninformed of modern knowledge, ideas and technologies in teaching, thus rendering them ineffective and irrelevant in the teaching of mathematics. As such, leads to failure of students to pass mathematics at credit levels in NECO or WASCE. In order to ensure that teachers remain technical and pedagogical updated there is the need to determine the trend skills needed by teacher for effective service delivery of mathematics in secondary schools, hence this study.

Purpose of the Study

The main purpose of this study is to determine trend skills needed by teach for effective teaching of mathematics in Ebonyi State. Specifically, the study sought to determine the:

1. Lesson planning skills needed by teachers for effective teaching of mathematics in senior secondary schools
2. Lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools
3. Lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools

Research Questions

The following research questions were answered by the study:

1. What are the lessons planning skills needed by teachers for effective teaching of mathematics in senior secondary schools?
2. What are the lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools?
3. What are the lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools?

Research Hypothesis

The following hypotheses were formulated and were tested at 0.05 alpha level of

1. There is no significant difference in the mean ratings of urban and rural on mathematics teachers on lesson planning skills needed by teachers for effective teaching of mathematics in senior secondary schools.
2. There is no significant difference between the mean ratings of urban and rural mathematics teachers on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools.
3. There is no significant difference between the mean ratings of urban and rural mathematics teachers on lesson evaluation skills needed by teachers for effective

teaching of mathematics in senior secondary schools.

Methodology

The study adopted a survey research design. A survey design in the opinion of Orodho and Kombo (2006) described the existing research concern by asking individuals about their perception, attitudes or value or through observation. This study embarked on finding out practicing teachers' perspectives on the skills needed by teachers for effective teaching of mathematics in senior secondary schools. Research problem under investigation was descriptive as such survey research design was considered appropriate for collection, analysis and presenting the data using a sample of individual representative of the population.

Area of the Study:

The study was conducted in Ebonyi state which consists of three education zones of Ebonyi South, Ebonyi North and Ebonyi Central. The choice of the area was made because Ebonyi state was regarded as one of educationally disadvantaged states in the country.

Population and Sample:

The population of study was 575 Teachers of mathematics in senior secondary schools in Ebonyi state. The information on the number of mathematics teachers was obtained from Ebonyi State Secondary Education Board (SEB) headquarters Abakaliki. The population of teachers was considered relatively small. Hence the entire population was used as sample.

Method of data Collection:

Structured questionnaire items for teachers of mathematics was developed from reviewed literature and used for data collection and only 402 teachers participated in the study. Each item was assigned 4 response option scale with corresponding numerical Values as follows highly Needed (HN) =4; Moderately Needed (MN)=3; low Needed (LN)=2; and Not Needed(NN)=I.

Validation of the Instrument:

The face and content validity of the instrument was ascertained by 3curriculum experts: two from the department of Education foundation and one from science education Ebonyi state university, Abakaliki. Each validator was given a copy of the questionnaire to determine the relevance and content coverage of the items. Based on their suggestions, the final questionnaire for collecting data for the study was developed. Cronbach Alpha Coefficient method was used. A pilot study of 10 teachers (5from urban and 5 Rural) senior secondary school in the study area was used to establish the reliability of the questionnaire item. These respondent used in the pilot study were however, not used as sample for the study. The data obtained from the administration of the questionnaire was analyzed by finding the

variance of each item in the questionnaire and the variance of the total number of items in each section of the questionnaire which gave a coefficient of 0.77. This value represented the reliability coefficient of the questionnaire. Five hundred and seventy two (572) copies of questionnaire were delivered to the teachers of mathematics with the help of three (3) research assistance from each of the three educational zones of the state. The researcher also explains the purpose of the data collection to the research assistance so that if someone asks them about the purpose of questionnaire, they must be able to explain the purpose of the study. The researcher retrieved 402 copies of questionnaire from research assistance after one week at a designated place.

Method of data analysis:

Mean, standard deviation and t-test statistics were employed to analyze the data obtained from the respondents. The mean and standard deviation were used to answer the research question. The internal scale of 0.05 was used to determine the upper and lower limits of the mean value. The arithmetic mean was determined through the summation of the values of the options and divided by the number as shown: $\frac{4+3+2+1}{4}$ = 2.50, The upper limit was 2. 50 +0.05 = 2.55. The lower limit was also 2.50-0.05 = 2.45. As a result of this, upper limit of 2.55 was used to make a decision on the mean of each skills needed for effective teaching. The upper limit of 2.55 was used because it disseminate better. As such, any skills item with a mean of 2. 55 and above was regarded as needed while any item with a mean response less than 2.55 was regarded as not needed.

Results

Research Question One:

What are the lessons planning skills needed by teachers for effective teaching of mathematics in senior secondary schools? Data for answering research question one are presented in table 1.

Table 1: Mean rating of the responses of mathematics teacher on lesson planning skills needed for effective teaching of mathematics. N=402

S/N	ITEM STATEMENT	X	SD	Remarks
1	check mathematics syllabus for senior secondary schools	3.84	0.11	Needed
2	Classify the objective of mathematics	3.55	0.51	Needed
3	Identify the fundamental knowledge and skills needed for the class involved	4.32	0.44	Needed
4	Develop objectives for each lesson	3.66	0.12	Needed
5	Identify materials or resources that are most suited for achieving the objective of the unit	3.11	0.44	Needed

6	Incorporate the activities that will endow students with the needed information and skills	2.89	0.56	Needed
7	Recognize occasions for learners to put the skill into practice	4.77	0.66	Needed
8	collect texts and instructional materials	3.42	0.71	Needed
	Grand Mean			**Needed**

In the above table 1 respondents agreed that mathematics teachers needed the lesson planning skills such as: consult mathematics curriculum for senior secondary schools, Identify the objective of mathematics, determine the basic knowledge and skills needed for the class involved, develop objectives for each lesson, identify materials or resources that are best suited for accomplishing the unit, include the activities that will equip students with the needed knowledge and skills, identify opportunity for learners to put the skill into practice and collect texts and instructional materials.

Research Question Two:

What are the lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools? Data for answering research question two are presented in table 2.

Table 2: Mean rating of the responses of mathematics teacher on lesson implementation skills needed for effective teaching of mathematics. N=402

S/N	ITEM STATEMENT	X	SD	Remarks
9	Give summary or revision of the previous lesson or assume knowledge to link it with the days lesson	2.84	0.31	Needed
10	Introduce the lesson	3.55	0.51	Needed
11	Present the lesson in a coherent manner	4.32	0.44	Needed
12	Manage the classroom to ensure absolute quietness for proper Understanding	3.66	1.12	Needed
13	Use teaching aid at the appropriate time during the lesson to enhance students understanding	3.11	0.54	Needed
14	Utilize different instructional approaches/strategies and materials	2.87	0.61	Needed
	Grand Mean			**Needed**

In the above table 2 respondents agreed that mathematics teachers needed the lesson implementation skills such as: Give summary or revision of the previous lesson or assume knowledge to link it with the days lesson, introduction of lesson, present the lesson in a coherent manner, manage the classroom to ensure absolute quietness for proper

understanding, use teaching aid at the appropriate time during the lesson to enhance students understanding and utilize different instructional approaches/strategies and materials

Research Question Three

What are the lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools? Data for answering research question three are presented in table 3.

Table 3: Mean rating of the responses of mathematics teacher on lesson evaluation skills needed for effective teaching of mathematics. N=402

S/N	ITEM STATEMENT	X	SD	Remarks
15	Determine the assessment procedure	3.84	0.11	Needed
16	Provide opportunity for individual or slow learners consultation after lesson	3.55	0.51	Needed
17	Utilize a variety of formal or informal and summative assessment methods.	4.32	0.44	Needed
18	Assess students based on steps utilized in arriving at the right answer of any mathematics problem	3.66	0.12	Needed
19	Ability to revise the assignment given to students to enable them identify their weakness so as to make improvement	3.11	0.44	Needed
20	Assign grade to students	2.89	0.56	Needed
21	Use assessment result to evaluate students' interest in the content areas of mathematics			Needed
	Grand Mean			**Needed**

The data in the Table 3 showed that the mean values of the respondents responses ranged from 3.11 - 4.32 with corresponding SD values of the range 0.11- 0.56. This indicated that all the respondents agreed that the items, determine the assessment procedure, provide opportunity for individual or slow learners consultation after lesson, utilize a variety of formal or informal and summative assessment methods, assess students based on steps utilized in arriving at the right answer of any mathematics problem, revise the assignment given to students to enable them identify their weakness so as to make improvement, assign grade to students, and use assessment result to evaluate students' interest in the content areas of mathematics, are lesson evaluation skills needed for effective teaching of mathematics in senior secondary schools.

Hypotheses

$H0_1$: There is no significant difference in the mean ratings of urban and rural mathematics teachers on lesson planning skills needed by teachers for effective teaching of mathematics in senior secondary schools.

Table 4: t-test of difference in the mean responses of urban and rural teachers on lesson planning skills needed by teachers for effective teaching of mathematics in senior secondary schools.

Items	Category of respondents	N	Mean	SD	Df	t-cal	t-crt	Decision
1.	Urban	202	3.58	0.55	200	0.80	1.96	Not Significant
	Rural	200	3.50	0.59				
2.	Urban	202	3.22	0.86	200	0.99	1.96	Not Significant
	Rural	200	3.33	0.64				
3.	Urban	202	3.02	0.69	200	1.25	1.96	Not Significant
	Rural	200	3.17	0.64				
4.	Urban	202	2.55	0.93	200	1.12	1.96	Not Significant
	Rural	200	2.70	0.75				
5.	Urban	202	3.47	0.84	200	0.53	1.96	Not Significant
	Rural	200	3.40	0.74				
6.	Urban	202	3.44	0.55	200	0.38	1.96	Not Significant
	Rural	200	3.40	0.65				
7.	Urban	202	3.22	0.72	200	0.93	1.96	Not Significant
	Rural	200	3.32	0.63				
8.	Urban	202	3.05	1.09	200	1.95	1.96	Not Significant
	Rural	200	3.34	0.82				
	Average					**0.99**	**1.96**	**Not Significant**

Result on Table 4 revealed that the mean rating of urban and rural on mathematics teachers' lesson planning skills needed by teachers for effective teaching of mathematics in senior secondary schools was not significant, as the t-cal of 0.99 was less than the Alpha value of 1.96. This means that the urban and rural mathematic teachers were of the same opinion on the lesson planning skills s needed by teachers for effective teaching of mathematics in secondary schools

$H0_2$: There is no significant difference between the mean ratings of urban and rural mathematics teachers on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools.

Table 5:t-test of difference in the mean responses of Urban and rural on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools.

Items	Category of Respondents	N	Mean	SD	Df	t-cal	t-crt	Decision
9	Urban	202	3.52	0.60	200	0.41	1.96	Not Significant
	Rural	200	3.48	0.56				
10	Urban	202	3.30	0.62	200	1.35	1.96	Not Significant
	Rural	200	3.43	0.53				
11	Urban	202	3.52	0.60	200	1.18	1.96	Not Significant
	Rural	200	3.40	0.59				
12	Urban	202	2.69	1.00	200	2.8	1.96	Significant
	Rural	200	3.10	0.82				
13	Urban	202	3.05	0.62	200	0.38	1.96	Not Significant
	Rural	200	3.09	0.55				
14	Urban	202	3.05	0.62	200	0.38	1.96	Not Significant
	Rural	200	3.09	0.55				
	Average					**0.41**	**1.96**	**Not Significant**

Result on Table 5 revealed that the mean ratings of urban and rural mathematics teachers on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools was not significant, as the t-cal of 0.41 was less than t-critical of 1.96. This mean that both rural and urban mathematics teachers were of the same opinion on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools.

$H0_3$: There is no significant difference between the mean ratings of urban and rural mathematics teachers on lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools

Table 6: t-test of difference in the mean responses of urban and rural teachers on lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools.

Items	Category of respondents	N	Mean	SD	Df	t-cal	t-crt	Decision
1.	Urban	202	3.22	0.86	200	0.65	1.96	Not Significant
	Rural	200	3.33	0.64				
2.	Urban	202	3.02	0.69	200	1.06	1.96	Not Significant
	Rural	200	3.17	0.64				
3.	Urban	202	2.55	0.93	200	1.52	1.96	Not Significant

	Rural	200	2.70	0.75				
4.	Urban	202	3.47	0.84	200	0.33	1.96	Not Significant
	Rural	200	3.40	0.74				
5.	Urban	202	3.44	0.55	200	0.38	1.96	Not Significant
	Rural	200	3.40	0.65				
6.	Urban	202	3.22	0.72	200	0.83	1.96	Not Significant
	Rural	200	3.32	0.63				
7.	Urban	202	3.05	1.09	200	1.55	1.96	Not Significant
	Rural	200	3.34	0.82				
	Average					**0.98**	**1.96**	**Not Significant**

Result on Table 6 revealed that the mean ratings of urban and rural mathematics teachers on lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools was not significant, as the t-cal of 0.65, 1.06, 1.52, 0.33,0.38, 0.83 and 1.55 was less than t-critical of 1.96. This mean that both rural and urban mathematics teachers were of the same opinion on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools.

Discussion of Findings

Based on analysis of the obtained data on research question one, respondents agreed that mathematics teachers needed the lesson planning skills such as: verify mathematics curriculum for senior secondary schools, Identify the objective of mathematics, determine the basic knowledge and skills needed for the class involved, develop objectives for each lesson, identify materials or resources that are best suited for accomplishing the unit, include the activities that will equip students with the needed knowledge and skills, identify opportunity for learners to put the skill into practice and gather texts and instructional materials. While hypothesis revealed that there is no significant difference in the mean ratings of urban and rural mathematics teachers on lesson planning skills needed by teachers for effective teaching of mathematics in senior secondary schools. The finding is in the consonant with the opinion of Turhan and Karakus (2018) who identify planning the lesson, preparation of materials, organizing extracurricular activities, diversifying education by taking into account individual differences, and time management as necessary skills for mathematics teaching.

In table 2 which is research question two, the results of the study revealed that respondents agreed that mathematics teachers needed the lesson implementation skills such as: Introduction of lesson, give summary or revision of the previous lesson or assume knowledge to link it with the days lesson,

present the lesson in a coherent manner, manage the classroom to ensure absolute quietness for proper understanding, use teaching aid at the appropriate time during the lesson to enhance students understanding and utilize different instructional approaches/strategies and materials, while the result of hypothesis revealed that there is no significant difference between the mean ratings of urban and rural mathematics teachers on lesson implementation skills needed by teachers for effective teaching of mathematics in senior secondary schools. This finding is in line with Erduga and Kurt (2012) who stated that engaging and supporting all students in learning through effective lesson plan implementation skills enhances students' performance in mathematics.

In table 3: Research question three, the respondents agreed that evaluation of lesson plan skills such as, determine the assessment procedure, provide opportunity for individual or slow learners consultation after lesson, utilize a variety of formal or informal and summative assessment methods, assess students based on steps utilized in arriving at the right answer of any mathematics problem, revise the assignment given to students to enable them identify their weakness so as to make improvement, assign grade to students, and use assessment result to evaluate students' interest in the content areas of mathematics, are lesson evaluation skills required by mathematics teachers for effective teaching of mathematics, while the result of hypothesis revealed that there is no significant difference between the mean ratings of urban and rural mathematics teachers on the lesson evaluation skills needed by teachers for effective teaching of mathematics in senior secondary schools. This finding is in line with the findings of Alnoor (2015) that identify preparation skills and planning the lesson, skill in carrying out the lesson, assessment skills, education means and equipment and personal skills as necessary skills for mathematics teaching.

Concl
usion

In conclusion, the study revealed many skills needed by mathematics teachers for effective teaching of mathematics in secondary schools. Based on data analyzed the study revealed that lesson planning skills, lesson implementation skills and lesson evaluation skills are needed skills by mathematics teachers in secondary schools for effective teaching of Mathematics.

Recommendations

The study recommended the following:

1. Ebonyi State government should from time-to-time organized seminar and workshop to train mathematics teachers on skills for effective teaching of mathematics.
2. Teachers of mathematics should always embark in services training

in order to cope with current trend skills in teaching of mathematics.

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