

DETERMINATION OF COMPETENCIES NEEDED BY SECONDARY SCHOOL PRINCIPALS TO ENHANCE MATHEMATICS TEACHERS' CLASSROOM TEACHING EFFECTIVENESS IN ANAMBRA STATE FOR SUSTAINABLE DEVELOPMENT

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Abstract

Principals' roles in promotion of education in the school system are highly important. This study is on determination of competencies needed by secondary school principals to enhance mathematics teachers' teaching effectiveness in Anambra State for sustainable development. The study was a descriptive survey research. The population of the study comprised 256 principals and 376 mathematics teachers in Anambra State owned secondary schools. The sample of the study was 250 respondents selected using stratified proportionate random sampling. The instrument for the study with title "Principals' Competency Needs" was of two clusters. The reliability of the instrument was estimated using Cronbach Alpha and was found to be 0.78 and 0.86. Data collected were analyzed with mean. The result obtained revealed that secondary school principals did not possess managerial and supervisory competencies needed to enhance mathematics teachers' classroom teaching effectiveness. This implies that secondary school principals need to be provided with these competencies they are lacking so as to enhance mathematics teachers' classroom teaching effectiveness and productivity as well as students' learning outcomes for sustainable development. Hence, the Ministries of Education should organize and conduct seminars and workshops for both newly recruited and old principals in the school system to equip them with the competencies required for human resource management and management principles for sustainable development.

Keywords: School principals, mathematics, teachers, teaching effectiveness, competence.

Introduction

Education is the tool for national development. Education is the most efficient and effective way through which a society can face the challenges of tomorrow and bring about national development (Nwaka, 2009). Mathematics education is one of the major tools for achieving national development. Chinweoke (2009), posits that Scientific and Technological development of any nations lies on the crop of qualitative and functional Science, Technology and Mathematics (STM) education. Mathematics education is the true way by which mathematics teachers are being produced for national sustainable development. Mathematics is the bedrock for the development of science and technology

as well as development of logical, rational and critical thinking in an individual. Iji (2008), described mathematics as a model of thinking which encourages learners to observe, reflect and reason logically about a problem and communicating ideas, making it the central intellectual discipline and a vital tool in science, commerce and technology. Mathematics and mathematics education are the driving forces for the production of mathematics teachers.

Teachers including mathematics teachers are nation builders. Teachers are the architect of other professions in other fields of life call it Doctors, Engineers, Pharmacists, Chemists, Architectures, Scientists, Technicians, etc. Ezenwaji (2012), states that teachers are the central pivot of manpower resource and development and hence of national development. Teachers obviously, determine the relevance, quality and sustainability of education as they are in-charge of the actual implementation of curriculum in the school system. Trained and effective teachers are the principal assets of any educational system (Mbonu, 2015). James (2013), states that teachers are one of the key elements in any school and effective teaching is one of the key propellers for school improvement. Teaching is an act of instructing which involves giving knowledge to someone (Omiko, 2013). Teaching is more or less the act of instructing or directing someone on what to do. So, teaching effectiveness is measured by the extent at which a learner masters what was taught. Okafor (1997), States that teaching effectiveness is measured by the extent to which the educational outcomes of the learner is achieved by the teacher performance in the classroom. In order to describe teaching as being effective, both teachers' classroom performance and students' learning outcomes should be high.

Classrooms teaching effectiveness are being challenged by many factors which hinders sustainable development. These problems are under school related, teacher related, student related and government related. The school related problems has to do with resource management and management principles. Onyewuotu & Ugbaja (2014), in enumerating factors affecting quality teaching and learning of science (mathematics inclusive) listed among others; lack of motivation of many science teachers, lack of vital instructional materials such as textbooks, teachers guide and audio-visuals. Mathematics teachers need to be highly motivated and provided with instructional materials to enable them teach effectively in the classrooms. Ejezie (2016), points out that the degree of teachers' involvement in the curricular and extracurricular activities towards the achievement of educational objectives depends on the supervision, monitoring and motivation of staff. He went further to state that supervision whether done internally or externally, should be carried out to sensitize and encourage staff to work hard, show initiative and assist students to achieve success in their studies. Mathematical knowledge and skills are highly essential for national developments which call for adequate motivation, monitoring and supervision of teachers for effective teaching and learning of mathematics in the classrooms to promote sustainable development. In order that effective teaching and learning should take place in the school system, school principals have great roles to play.

School principals are regarded as the officers in the school that manage human, material resources and finances in the school. They are seen as the instructional leaders that coordinate and supervise the implementation of the school curriculum (Umeano, 2010). Principals are the driving forces behind any school and the key to improving the quality of the learning process (Onuselogu & Uzoehina, 2016). Sokanu (2016), sees principal as someone who is the leader of the entire community within a school. He/she is responsible

for managing the major administrative tasks and supervising all students and teachers. School principals oversee the planning, organization, directive and coordination of the day to day educational and administrative aspects of the school including physical and material resources as well as setting up system to monitor and improve schools and students performances (Career Centre, 2016).

Derrick (2016), emphasizes that the role of the principals cover many different areas including leadership, teacher-evaluation, student-discipline and many others. He further states that the major component of principals' job is to improve teacher quality by which they naturally improve students' quality. Great Schools Staff (2015), stress that great principals play active role in planning and supporting instruction that is appropriate for their students and ensure that school time and resources are focused on student achievement, recruitment of good teachers to their schools. The Wallace Foundation (2016), posits that effective principals work relentlessly to improve achievement by focusing on the quality of instruction, help define and promote high expectation, attack teacher isolation and fragmentized effort and connect directly with teachers and the classrooms. Effective principals also encourage continual professional learning; emphasize research-based strategies to improve teaching and learning and initiate discussion about instructional approaches, both in team and with individual teachers. Okoye & Uge (2016), state that effective principal should be more task oriented as well as human resource oriented. In talking of the great and effective principals here, simply means principals who are competent in resource management and management principles in the school system. School principals are expected to be competent in performing their managerial and supervisory tasks in the school system.

Competency means ability to perform a task successfully and at the end achieve excellent result. So, for the School principals to enhance mathematics teachers' classroom teaching effectiveness for sustainable development, they need to be competent in the management and supervision of human and material resources in the school system. Mathematical knowledge and skills are highly essential for sustainable development (Chinweoke, 2014). This calls for principals' competence in managing, supervising, monitoring, motivating and creating enabling environment to promote effective teaching and learning of mathematics in the classrooms for sustainable development. The school principals in performing their managerial work effectively should be able to harness and channel the human and material resources available to the schools towards attainment of the goals of the school. Managerial effectiveness as regards education involves the processes under which the input by schools that is human and material resources and classroom dynamics, combine to produce educational output (Ughamadu, Edom & Eriamah, 2016).

Onuorah (2016), states that some principals do not appropriately employ leadership variables in the day to day running of schools and this may be a major reason why conflicts, anarchy and poor staff performance characterized most secondary schools. He went further to state that in some schools, principals and staff are known to be at conflict relationships that affect the quality of teaching and learning in the classrooms. Oyegote (2012), discovers that the behavior of the principals towards the teachers, students as well as the community was very much encouraging and participatory and this promotes learning environment that are learners friendly. This shows that any learning environment that is devoid of anarchy, bitterness, conflicts and other negative attitudes, enhances effective teaching and meaningful learning that brings about maximum productivity. Udebunu (2016), on the other hand points out that many secondary schools in Nigeria are

currently characterized by a lot of administrative lapses, where teachers' professional growth and efficiency are affected by the degree of teachers' redundancy, lateness to school and overt truancy (which are unchecked). He also identified principals' professional experiences as one of the constraints to internal supervision in the secondary schools.

The Federal Republic of Nigeria (2004), states that before appointing teachers to be principals of schools, they should be properly screened to ensure that they have knowledge of human resource management and management principles. The school principals having knowledge of human resource management and management principles means they should be competent in both managerial and supervisory tasks within the school system. In order to ensure that they have these competencies, they should be in possession of the following skills: provision of instructional materials for teaching and learning, motivation of teachers and students, encourage teachers to attain professional development, care for teachers' welfare, regularly supervise instruction in the classrooms, mark teachers' lesson notes, offer constructive feedback to teachers, evaluate teachers grade books, etc. This follows the statement made by Singh (2013) that the headmaster or the principal of a school is the hub of the educational process and as a sound and educational leader, the success of a school system depends on his ability and skills. Based on the above facts, the purpose of this study is to determine the competencies needed by secondary school principals to enhance mathematics teachers' classroom teaching effectiveness in Anambra State for sustainable development.

Research Questions

- At what extent do secondary school principals possess managerial competency needed to enhance mathematics teachers' classroom teaching effectiveness?
- At what extent do secondary school principals possess supervisory competency needed to enhance mathematics teachers' classroom teaching effectiveness?

Method

The study was a descriptive survey research. The population of the study comprised 256 principals and 376 mathematics teachers in the 256 state owned secondary schools in Anambra State. The sample of the study consisted of 250 respondents comprising 100 principals and 150 mathematics teachers selected using stratified proportionate random sampling.

The instrument for the study titled "Principals' Competency Needs" (PCN) was developed by the researcher. The instrument was made up of two clusters; the managerial competency and the supervisory competency with 15 and 10 items respectively. The responses on the items were weighted on four-point scale of very high extent (4), high extent (3), low extent (2), and very low extent (1). The instrument was validated by three University lecturers, experts in item construction. The instrument after validation was trial tested in four state owned secondary schools in Enugu State. The reliability of the instrument was estimated using Cronbach Alpha and the coefficient of the correlation was found to be 0.78 and 0.86 for managerial and supervisory competencies respectively. Copies of the instrument were administered to the respondents with the help of research assistants.

Data collected were analyzed using mean. The mean of 2.50 and above was accepted to be high while the mean of 2.49 and below was taken to be low.

Results

Research Question 1

At what extent do secondary school principals possess managerial competency needed to enhance mathematics teachers’ classroom teaching effectiveness?

Table 1: Mean responses of Principals and Teachers on managerial competency needed by school principals to enhance mathematics teachers’ classroom teaching effectiveness

School Principals skills	Principals’ mean	Teachers’ mean	Mean average	Decision
1. Provide adequate resource materials for teaching/learning	2.50	2.00	2.25	LE
2. Motivate teachers to be committed and dedicated	2.40	2.00	2.20	LE
3. Encourage teachers to acquire professional development	2.50	2.10	2.30	LE
4. Reward hard working teachers	2.45	2.25	2.35	LE
5. Sponsor teachers to conferences & workshops	2.40	2.20	2.30	LE
6. Encourage teachers’ resourcefulness by providing materials for improvisation of resource materials	2.14	2.20	2.17	LE
7. Promote teachers’ initiatives & self development	2.30	2.18	2.24	LE
8. Care for teachers’ welfare	2.50	2.40	2.45	LE
9. Discipline students when they insult teachers	2.80	2.50	2.65	HE
10. Stimulate & nurture environment for cooperative & team work	2.40	2.36	2.38	LE
11. Make instructional materials available for teachers	2.30	2.15	2.23	LE
12. Maintain cordial relationship & good rapport with staff & students	2.80	2.56	2.68	HE
13. Use reinforcement to motivate teachers	2.55	1.38	1.97	LE
14. Inspire teachers & students to work hard	2.80	1.45	2.13	LE
15. Establish regular communication with teachers	3.00	2.68	2.84	HE
Grand mean	2.31	2.23	2.33	LE

From Table 1, only 3 items (Nos 9, 12 & 15) have their mean average above 2.50 while the rest of the items have their mean average below 2.50. The grand mean of 2.33 also indicates low extent meaning that the extent at which school principals possess

managerial competency was low. This shows that school principals did not possess this competence.

Research Question 2

At what extent do secondary school principals possess supervisory competency needed to enhance mathematics teachers’ classroom teaching effectiveness?

Table 2: Mean responses of Principals and Teachers on supervisory competency needed by school principals to enhance mathematics teachers’ classroom teaching effectiveness.

School Principals skills	Principals’ mean	Teachers’ mean	Mean average	Decision
1.Regularly supervise classroom instructions	2.30	2.06	2.18	LE
2.Check school records to ensure attendance to school	2.80	3.00	2.90	HE
3.Check teachers attendance to classes	3.00	2.60	2.80	HE
4.Mark teachers’ lesson notes	3.00	2.80	2.90	HE
5.Conduct effective monitoring on teachers’ movement	2.45	2.45	2.45	LE
6.Monitor classroom Activities	2.41	2.30	2.35	LE
7.Offer constructive feedback to teachers	2.30	2.00	2.15	LE
8.Suggest to teachers ways to improve classroom teaching processes	2.60	2.15	2.37	LE
9.Ocasionally scrutinize students’ exercise books	2.15	2.10	2.13	LE
10.Evaluate teachers’ grade books & reward them accordingly	2.30	2.20	2.25	LE
Grand mean	2.23	2.37	2.45	LE

Table 2 reveals that out of 10 items only 3 items received mean average above 2.50, the rest was below 2.50. The grand mean of 2.45 was also below 2.50. This indicates that the extent at which secondary school principals possess supervisory competency was low showing that they lack supervisory competency needed to enhance mathematic teachers’ classroom teaching effectiveness.

Discussion of Results

The result of the study revealed that the secondary school principals lacked managerial competency needed to enhance mathematics teachers’ classroom teaching effectiveness in Anambra State for sustainable development. The school principal who is not able to motivate and encourage teachers to attend conferences & workshops and acquire professional growth and development in the subject they teach talk less of attending to teachers’ welfare, initiate and encourage self development in teachers and make teaching

materials available to teachers for effective teaching is an indication that the principal is not competent to manage human resources for effective teaching to take place in the classrooms. The result agrees with Udebunu (2016) who states that many secondary schools in Nigeria are currently characterized by a lot of administrative lapses. This is the case where new principals are recruited into the secondary school system. The result also agrees with that of Ejezie (2016) who discovered that maintaining cordial relationship and good rapport between staff and students have positive effect on teachers' effectiveness and students' achievement. The result of the study on the other hand disagrees with Oyegoke (2012) who discovered that the behavior of the principals towards the teachers, students as well as community was very much encouraging and participatory, thus promoting environment that are learners friendly.

The result of the study also revealed that secondary school principals did not possess the supervisory competency needed to enhance mathematics teachers' classroom teaching effectiveness. This is possible since school principals could possess only three skills out of 10 skills on supervision. The result agrees with that of Udebunu (2016) who discovered that professional experience of principals is one of the constraints to internal supervision in secondary schools; where teachers' professional growth and efficiency are affected by the degree of teachers' redundancy, lateness to school and overt truancy that are not monitored. The implication of these results is that secondary school principals need to be provided with these competencies they are found lacking in order to enhance mathematics teachers' classroom teaching effectiveness and thus promote maximal productivity and students learning outcomes for sustainable development.

Conclusion

Since the growth and success of any educational system is determined by the school principals' competencies and skills in management of human resources and other management principles; there is urgent need to provide secondary school principals with these competencies they are found lacking which they needed to possess to enhance mathematics teachers' classroom teaching effectiveness for sustainable development to be achieved in Anambra State and Nigeria in general. Therefore, in order that the secondary school principals should possess these competencies they need, the following recommendations are made.

Recommendations

- The secondary school principals should be properly trained and retrained by teacher educators to equip them with the knowledge, competencies and skills on human resource management and supervisory tasks.
- The secondary school principals should be sponsored by their employers to attend conferences and workshops organized by professional bodies to equip them with the required competencies/skills in managerial and supervisory tasks.
- The Ministries of Education and other educational stakeholders should conduct regular supervision exercises to schools to monitor the activities of the school principals for sustainable development.
- The Ministries of Education should regularly conduct capacity building workshops on leadership competencies/skills especially when there are newly recruited principals in the secondary school system.

- The Post Primary Schools Services commission should scrutinize teachers before appointing them as school principals to ensure that they are qualified for the post of principal ship.

References

- Career Centre (2016). School principal.
www.careercentre.dtwd.wa.gov.au/occupation/
- Chinweoke, F.U. (2009). Evaluation of level of skills of Anambra State secondary school mathematics teachers in catering for students' individual learning differences. UNIZIK Journal of Science Education 10 (1), 54-59.
- Chinweoke, F.U. (2014). Challenges in training of mathematics teachers for sustainable national development. Implications for postgraduate students. COOU Interdisciplinary Research Journal 1 (1), 34-42.
- Derrick, M. (2016). The role of the principal in schools.
teaching.about.com/od/admin/ht
- Ejezie, O.M.(2016). Influence of supervision on secondary school teachers' productivity in Kwara State, Nigeria. COOU Journal of Educational Research and Development (COOUJERD), 2 (1) 275-283.
- Ezenwaji, I.O. (2012). Appraisal of the inspection of primary schools in South-East Zone of Nigeria. Unpublished Ph.D Thesis, University of Nigeria.
- Federal Republic of Nigeria (2004). National Policy on Education. Lagos, NERDC press.
- Grat Schools Staff (2015). What makes a great principal?
www.greatschools.org/Gk/articles
- Iji, C.O. (2008). Reforming school mathematics curriculum in line with the global challenges. Proceedings of Science Teachers Association of Nigeria of 49th Annual Conference, 226-230.
- Mbonu, O.A. (2015). ICT as an innovative instrument for improving the pedagogy of primary school teachers for quality teaching in Anambra, Nigeria. National journal of Educational Leadership, 2,118-126.
- Nwaka,N.G.(2009). Ensuring successful science education for qualitative

and functional education through effective school administration.
UNIZIK Journal of Science Education 10 (1), 45-53.

Okafor, J.(1997). The effective teacher in the Nigeria educational system.
effective Teaching: The Nigerian Perspective, 37-41.

Okoye, U.R. & Uge, W.I. (2016). The challenges of secondary school principals in
Onitsha Zone of Anambra state, Nigeria in the 21st century. COOU Journal of
Educational Research and Development (COOUJERD), 2 (1), 219-226.

Omiko, A. (2013). Perception of chemistry teachers on major determinants of
students' achievement in difficult chemistry concepts. Journal of Research and
Theory in Education, 5 (2), 50-59.

Onuorah, H. C. (2006). Relationship between principal leadership behavior and
staff relations in secondary schools in Onitsha Education Zone.
Interdisciplinary Education Journal (INTEJ) World council for Curriculum and
Development (WCCI), 7&8 234-242.

Onuselogu, A.P. & Uzoechina, G.O. (2015). Dynamic capacities of secondary
school principals in the service of leadership excellence. Spotecezeństwo
iRodzina nr 43 (2/2015) kwiecień-czerwiec, 44-56.

Onyewuotu, I.N. & Ugbaja, J.N. (2014). Quality teaching and learning of
science implications of the Millennium Development Goals (MDGs). Science,
Technology & the Challenges of Millennium Development Goals. School of
Sciences, Federal College of Education(Technical), Umunze, 214-221.

Oyegoke, S. A. (2012). Principals leadership style as a catalyst to effectiveness
of secondary school education in Ondo State, Nigeria. Academic Research
International, 3 (3).

Singh, J. (2013). Academic aspect: Inspection supervision in Ashtricks (2013).
weebly.com/academicaspect.

Sokanu (2016). What does a principal do? www.sokanu.com/careers/principal

The Wallace Foundation (2016). Five key responsibilities: The school principal as
leader guiding schools to better teaching and learning.
www.wallacefoundation.org/knowledge-centre.

Udebunu, M.I. (2016). Constraints to effective internal supervision of secondary
schools in Enugu State. COOU Journal of the Science and Allied Discipline
(COOUTOSEAD), 1 (1), 87-94.

Ughamadu, U., Edom, R.N. & Eriamah, O.C. (2016). Comparative study of

managerial effectiveness of principals of public and private secondary schools in Awka South Local Government Area of Anambra State. COOU Journal of Educational Research and Development (COOUJERD), 2 (1) 16-26.

Umeano, T. (2010). Education in Nigeria. Abuja-Nigeria Verity Niger Dimension.