

# **Influence of Area of Specialization and Years of Teaching Experience of Geography Teachers on Their Level of Competency Performance in Teaching Map Work in Secondary Schools in Kogi State**

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## **Abstract**

This study is focused on the influence of area of specialization and years of teaching experience of geography teachers on their competency performance in teaching mapwork in secondary schools in Kogi State. The study involved 130 geography teachers in all the 196 secondary schools in Idah, Dekina and Ankpa Education zones of Kogi State. It was guided by three research questions and two hypotheses. The findings of the study revealed that; (i) educational qualification influences the level of competency performance of geography teachers in teaching mapwork in secondary schools. (ii) Geography teachers area of specialization influences these level of competency performance in teaching mapwork in secondary schools. (iii) Geography teachers years of experience influence their level of competency performance in teaching mapwork. The results of the t-test revealed that: (i) there is significant influence of geography teachers area of specialization on their level of competencies in teaching mapwork in secondary schools. (ii) There is a significant difference between more experienced and less experienced geography teachers on their level of competencies in teaching mapwork in secondary schools. Discussion of result, conclusion and recommendations were also proffered in the study.

## **Introduction**

Geography is an essential field to every human being because it consists of knowledge of the world around us. The study of the distinctive characteristics of geography contributes to the balanced development of the individual. Harm (1999) opines that education that does not include geography will have a lot of social cost among which include: deprivation of young students of early awareness of spatial relationships; denial of students their early exposure to maps and their uses; and it engenders a geographic illiteracy that will last till adult hood among others. Knowledge of geography and the ability to think geographically aids the individual in understanding and interpreting the realities of the world.

Among the different components of secondary school geography, mapwork stands out very significantly. According to Sarah (2001), maps are not the whole of geography, but there can be no geography without them. Knowledge, skills and competencies acquired in map associated teaching/learning facilitate effective teaching and learning of other aspects of secondary school geography. Mapwork provides the basis for critical thinking in geography and facilitates quick understanding of changes that occur in space over time. It is equally with maps that spatial relation and spatial forms can best be seen and analysed. It also facilitates the understanding of Global Positioning Satellite (GPS) and Global Information System (GIS) based systems which are the modern navigational technologies that appear in our everyday life (Wigglesworth, 2003). Maps are therefore very important in senior secondary school Geography.

The increasing importance of mapwork in the society notwithstanding, the trend of performance in the mapwork aspect of geography in secondary school examinations conducted by the West African School Certificate Examination body is generally poor. The consistent poor achievement of candidates in the mapwork has been partly attributed to the low level of geography teachers' competence in teaching the mapwork among other factors. WAEC, (2004 and 2005) Chief examiners' reports observed that different categories of teachers with varying academic qualifications, areas of specialization, and teaching experience teach geography in secondary schools. The reports further indicate the candidates could perform better if they are well taught and guided by qualified geography teachers. This tends to suggest that students' performance in mapwork could be improved if competent teachers are involved in teaching the subject.

The proper implementation of any curriculum depends on the competence of the teachers. The saying that "no education can rise above the quality of its teachers" is very apt here (Fed. Min. of Edu. 2000), since the teacher is the most important of all inputs that go into educational provision. Aaronson, Barrow and Sander (2003) assert that education of the highest quality requires teachers of highest quality. This is true in respect of geography education as the quality of its teachers determine the outcome of the teaching in terms of students' performance.

In consideration of the competency performance among geography teachers, the influence of

professional qualification, years of teaching experience and area of specialization therefore, become important. Professional qualifications, area of specialization and years of teaching experience have been found to influence many outcomes including academic achievements (Koledoye, 2011; Nwachukwu, 1990; Agih, 2008). Could there influence be identified on the competency performance among teachers of geography mapwork?

### **Literature Review**

Inconsideration of competency gaps among geography mapwork teachers, the influence of professional qualification, area of specialization and years of teaching experience become important. From available literature, professional qualification, area of specialization and years of teaching experience have been found to influence many out comes including academic achievements of students in secondary schools.

### **Educational Qualification and Competency Performance.**

When examining recent studies on teacher competencies in literature, it is highlighted that qualification like getting a higher level of academic degree should be among what the teacher should strive to have (Laczok-kerr and Berliner (2002). In a study carried out by Gede (2001) on employees' characteristics and job performance of staff of Bayelsa State Ministry of Education, shows that there is a significant relationship between educational qualification and job performance of employee. This finding lend support to Rugai and Agih (2008) who found a significant relationship between the educational qualification and job performance of teachers in Bayelsa State. According to them, a plausible explanation for this is that a more knowledgeable and widely trained teacher performs better than less knowledgeable and less trained teachers.

Koledoye (2011) carried out a study on the effect of teacher academic qualification on students' performance at secondary school level. The study aimed at identifying potential differences between the competence of qualified English language teachers and other teachers with formal education as regards teaching English Language at secondary school level. The result of the study shows that teachers with higher academic qualification have more knowledge of the subject matter, competence and skills of teaching and have more impact on the teaching learning process.

In a research conducted by Goldhaber and Brewer (1997), it was found that mathematics students who received lesson from a teacher with advanced or master's degree in mathematics achieved higher scores as compared to other students whose teachers had no advanced degree or degree in non-mathematics subjects.

Nwachukwu (1990) in his study on teachers' qualification and areas of specialization as predictors of students' performance in J.S.C. Integrated Science observes that students taught by qualified integrated science teachers performed better than those taught by unqualified ones.

All these have implication for effective teaching and learning of geography mapwork in secondary schools. Thus quality improvement in geography mapwork depends upon training of teachers. Geography mapwork teachers cannot be competent unless they are properly trained. This is because the relationship between teachers performance and students academic achievement scores are important in determining the competency of the teachers as stated by Koledye (2011) that great teachers are defined in terms of their impact on students achievement scores.

### **Area of Specialization and Competency Performance.**

According to ISBE (2002) a competent teacher is qualified in a given field of study and such a teacher demonstrates knowledge in the content area. He further states that such a teacher understands the central concepts, methods of inquiry and structure of the discipline. And that this enables the teacher to teach the content he needs in an advanced level of knowledge. Area of specialization enables the teacher to adequately address detailed higher order questions in the field of study thereby enabling the teacher to demonstrate a clear conceptual and systematic understanding of the course content.

Nwachukwu, (1990) in his study opines that areas of specialization of unqualified integrated science teachers affect students' performance. He observes that the more biologically biased a subject area, the greater the probability for integrated science students to perform better.

Koledoye (2011) in his study observes that English language teachers that have masters degree in English language or/and literature with teaching qualification perform better than their counterparts who are without a formal English language qualification or experts but teach English language in secondary schools. He opines that teachers knowledge about the subject affect their teaching attitude and eventually the performance of the students.

In a study conducted by Goldhaber and Brewer (1997), it was found that mathematics students that were taught by teachers with advanced degree in mathematics achieved higher scores as compared to those whose teachers had no advanced degree or degree in non mathematics subjects.

All these have implication for effective teaching and learning of geography mapwork in secondary schools. The quality of geography mapwork teacher in terms of area of specialization and professional

qualification will largely determine the teacher's mastery of the content and ability to initiate and innovate to make him efficient in teaching. In order to investigate whether the same relationship exists in geography mapwork, and to determine the competency gaps among geography mapwork teachers, this research has to be conducted.

### **Years of Teaching Experience and Competency Performance.**

Gede and Lawanson (2011) in their study show that there is a significant relationship between experience and job performance of employees. According to their findings this relationship exists probably due to the fact that the more experience the employee gathers as a result of long years of service, the higher the performance of the employee because he/she has to put into practice all the experiences he/she has acquired over the years. This is in support of the findings of Rugai and Agih (2008) who found a high relationship between teacher experience and their job performance. They explained that the longer a teacher works in a school, the greater probability that his productivity will be higher.

According to Jenifer (2010), teachers experience is one of the key factors in personal policies that affect employees. She further opines that experience promotes effectiveness of the teacher. In her study, she observes that teachers show the greatest productivity gains during their first few years of teaching after which their performance tends to diminish.

Multiple studies using data from Carolina and Florida show that average teacher with 1-2 years of experience are more effective than teachers with no experience (Clotfelter, Ladd and Vigdo, 2007a, 2007b; Harris and Sass, 2007).

Ladd (2008) in her studies on the value-added modeling of teachers credentials show that on average, teachers with more than 20 years of teaching experience are more effective than teachers with no experience; but that they are not much more effective than those with 5 years of teaching experience. All these have implications on the effective teaching and learning of geography mapwork in secondary schools. This is because according to Koledoye (2011), teaching is an act that can be refined by training and practice; and that the availability of competent teacher is very important in the reconstruction of educational system. It is therefore the desire of the researcher to carry out a similar work among geography mapwork teachers in secondary schools, hence this study.

### **Research Questions**

The following research questions will guide the study:

1. What is the influence of educational qualification of geography teachers on their competency needed and possessed by them in the teaching of mapwork in secondary schools?
2. What is the influence of area of specialization of geography teachers on the competencies needed and possessed by them in the teaching of mapwork in secondary schools?
3. What is the influence of years of teaching experience of geography teachers on the competences needed and possessed by them in the teaching of mapwork in secondary schools?

### **Hypotheses**

These hypotheses are formulated to guide the study and will be tested at  $p < 0.05$  level of significance.

1. There is no significant difference in the mean responses of sepecialized and non specialized geography teachers on the competencies needed and possessed by them in teaching mapwork in secondary schools.
2. There is no significant difference in the means between more experienced and less experienced geography teachers on their level of competencies in teaching mapwork in secondary schools.

### **Design of the Study**

The design of the study is an evaluative design. Evaluative design according to Ali, (2006) uses sample of an investigation to explain what is in existence or non- existent on the present status of phenomena being investigated. The design is suitable for the study because the competencies needed and possessed by geography teachers are investigated to show competency gaps to be filled for effective teaching of geography mapwork in secondary schools.

### **Area of the Study**

The study was carried out in three Education Zones of Kogi State (Idah, Dekina and Ankpa Education Zones). In Idah Education Zone, there are four local government areas (Idah, Ibaji, Igalamela/Odolu and Ofu Local Government Areas). In Dekina Education Zone, there are two Local Government Areas (Dekina and Bassa Local Government Areas). And in Ankpa Education Zone there three Local Government Areas (Ankpa, Omala and Olamaboro Local Government Areas). The zones comprise of predominantly civil servants, majority of which are primary and secondary school teachers. The choice of the area of study is due to the recorded consistent poor

performances of students in geography mapwork in the WASC/NECO Examinations in the secondary schools in the zones.

### **Population of the Study**

The target population of the study is all the senior secondary school geography teachers in Idah, Dekina and Ankpa Education Zones of Kogi State. Available records show that there are 205 geography teachers in the Zones (Ministry of Education, Idah, Dekina and Ankpa Zonal Offices, 2012). The estimated population of students offering geography at the senior secondary school level is 3,590 students in the 195 secondary schools in the zones. The choice of geography teachers as the population of the study is the fact that they will provide the responses to the questionnaire in the area of competences possessed or not possessed by them.

### **Sample and Sampling Technique**

The representative sample of 120 geography teachers was randomly selected from the secondary schools in the study area. A stratified random sampling was used to select respondents from all the secondary schools in the study area.

### **Instrument for Data Collection**

The researcher developed instrument which was used in data collection. It is titled “Competency Possessed by Geography Teachers in Teaching Mapwork (CPGTM)” The instrument was developed by identifying the skills required in map reading and then constructing items that can indicate the teachers possession or non- possession of competencies in teaching the skills identified in literature. The teachers were required to indicate their competency/non-competency levels in imparting the stated mapwork skills on a 4-point likert type scale of Very Highly Possessed, Possessed, Not Possessed and Not Very Slightly Possessed with the corresponding value of 4, 3, 2 and 1 respectively. Also, the needed response category has a rating scale of Very Highly Needed (4 points), Needed (3 points), Not Needed (2 points) and Not Very Slightly Needed (1 point).

### **Validation of the Instrument**

The developed instrument was validated by three science education specialists in the Departments of Science Education and Social Science Education, University of Nigeria, Nsukka. Two of them are specialists in measurement and evaluation and one in geography education. The research topic, purpose of the study and research questions and the constructed instrument were given to them for scrutiny. They were required to examine the instrument in terms of level of language of expression, ambiguity, duplication of statement relevance of items to research purpose and research questions and the adequacy of the items among others. The comments and suggestions of the validates were used in producing the final copy of the instrument for data collection.

### **Reliability of the Instrument**

The reliability of the instrument was determined using Cronbach’s Coefficient alpha reliability method. Twenty copies of the instrument were administered on twenty geography teachers in Okene Education Zone of Kogi State which is outside the study area. Their scores on needed and possessed competencies were obtained. The differences in the needed and possessed competencies which were the competency gaps among the geography teachers were noted. The scores were split in to two equal half. The split half scores of the instrument were correlated to find the coefficient of internal consistency and a reliability coefficient of 0.98 was obtained.

### **Method of Data Collection**

The instrument was administered directly by the researcher and three research assistants to geography teachers in the area of study. The teachers from each school in the area of study were required to complete the questionnaire on the spot, and it was collected back from them by either the researcher or his research assistants. This ensured a high rate of return of the copies of the questionnaire.

### **Results:**

**Research Question One:** what is the influence of educational qualification of geography teachers on the competencies needed and possessed by them in the teaching of mapwork in secondary schools?

**Table 1:** mean analysis of the influence of educational qualification of geography teachers on the competencies needed and possessed

Qualification	N	Mean	Std. Deviation
NCE	43	2.7100	.31654
B.SC	4	2.7688	.63324
B.SC ED	29	3.4966	.19829
B.ED	16	2.1623	.66219
M.ED	5	3.8000	.13807
HND	5	2.1250	.26984
Total	102	2.8747	.63788

Table 1 analysis reveals that the mean and standard deviation of NCE geography teachers are 2.7100 and 0.31654 respectively. B.Sc geography teachers have theirs as 2.7688 and 0.63324 respectively, B.Sc Ed geography teachers have theirs as 3.4966 and 0.19829 respectively, B.Ed geography teachers have theirs as 2.1623 and 0.66219, M.Ed geography teachers have theirs as 3.800 and 0.13807 respectively while HND geography teachers have theirs as 2.1250 and 0.26984 respectively. The analysis shows that the geography teachers with M.Ed qualification have higher competencies than every other class of geography teachers followed by the geography teachers with B.Sc Ed and so on.

**Research Question Two:** What is the influence of area of specialization of geography teachers on the competencies needed and possessed by them in the teaching of mapwork in secondary schools?

**Table 2:** mean analysis of the influence of area of specialization of geography teachers on the competencies needed and possessed

Area of Specialization	N	Mean	Std. Deviation
Geography	93	3.0772	.48374
Non Geography	27	2.0065	.31246

Table 2 analysis indicates that the mean and standard deviation of the specialized geography teachers are 3.0772 and 0.48374 respectively, while those of the non specialized geography teachers are 2.0065 and 0.31246 respectively. This implies that the specialized geography teachers have higher mean of the competencies needed and possessed by the geography teachers than the non specialized geography teachers.

**Research Question Three:** What is the influence of years of teaching experience of geography teachers on the competencies needed and possessed by them in the teaching of mapwork in secondary schools?

**Table 3:** mean analysis of the influence of area of specialization of geography teachers on the competencies needed and possessed

Experience	N	Mean	Std. Deviation
More Experienced	36	3.4456	.49607
Less Experienced	84	2.8545	.60855

The analysis of data in Table 3 shows that the mean and standard deviation of the more experienced geography teachers are 3.4456 and 0.49607 respectively, while those of the less experienced geography teachers are 2.8545 and 0.60855 respectively. Thus, more experienced geography teachers have higher mean competencies needed and possessed by them for the teaching of geography mapwork.

**Hypothesis One:** There is no significance difference in the mean responses of specialized and non specialized geography teachers on the competencies needed and possessed by them in teaching mapwork in secondary schools.



**Table 4:** t test analysis of the influence of area of specialization of geography teachers on the competencies needed and possessed

Area of Specialization	Number	Mean	Std. Deviation	Df	t-cal	Sig. (2-tailed)
Geography	93	3.0772	.48374	118	10.844	.000
Non Geography	27	2.0065	.31246			

The analysis above shows that the probability value associated with the calculated value of t (10.844) is 0.000. Since the probability value of 0.000 is less than the 0.05 level of significance, the null hypothesis will not be accepted. Thus, there is a significant difference in the mean responses of specialized and non specialized geography teachers on the competencies needed and possessed by them for the teaching of geography mapwork.

**Hypothesis Two:** There is no significance difference in means between more experienced and less experienced geography teachers on their level of competencies in teaching mapwork in secondary schools.

**Table 5:** t test analysis of the influence of experience of geography teachers on the competencies needed and possessed

Experience	Number	Mean	Std. Deviation	Df	t-cal	Sig. (2-tailed)
More Experienced	36	3.4456	.49607	118	5.139	.000
Less Experienced	84	2.8545	.60855			

The analysis of data in Table 5 shows that the probability value associated with the calculated value of t (5.139) for the influence of experience on the competencies needed and possessed by geography teachers is 0.000. Since this value (0.000) is less than the 0.05 level of significance, the null hypothesis will not be accepted. Thus, there is a significant difference in means of more experienced and less experienced geography teachers on the competencies needed and possessed by them in teaching geography mapwork.

### Discussion of Results

The analysis of data to research question one in table 1 shows that there is significant influence of educational qualification of geography teachers on the competencies possessed by them in the teaching of mapwork in secondary schools. This finding lends support to Koledoye (2011) who found that teachers with higher academic qualification have more knowledge of the subject matter, competence and skills of teaching and have more impact on teaching learning process. Goldhaber and brewer (1997) have earlier found that teachers with advanced or master's degree in their subject areas have higher impact on their students compared to other teachers without advanced or master degree.

The research question two in table 2 shows that there is significant influence of area of specialization of geography teachers on the competencies possessed by them in the teaching of mapwork in secondary school. This finding lend support to ISBE,(2002); Koledoy (2011) who found that area of specialization enables the teacher to adequately address detail higher order question in the field of study there by enabling the teacher to demonstrate a clear competence and systematic understanding of the course content. The quality of geography mapwork teacher in terms of area of specialization will legally determine the teacher's mastery of the content and ability to initiate and innovate to make him efficient in teaching.

The research question three in table 3 shows the influence of years of teaching experience of geography teachers on the competencies needed and possessed by them in teaching mapwork in secondary schools. This finding lends support to Rugai and Agih (2008) who found a high relationship between teachers experience and job performance. They explained that the longer a teacher works in a school, the greater probability that his performance will be higher.

The analysis of the data to hypothesis 1 in table 4 shows there is a significant difference in mean responses of specialized and non specialized geography teachers on the competencies needed and possessed by them in teaching mapwork in secondary schools. This is because the quality of geography mapwork teacher in terms of area of specialization will determine the teacher's mastery of the content and ability to initiate to make him efficient in teaching. This finding lend support to ISBE(2002); Koledoye, (2011); Goldhaber and Brewer(1997) who among other things found that area of specialization enables the teacher to adequately address detailed higher order questions in the field of study thereby enabling the teacher to demonstrate a clear conceptual and systematic understanding of the course content.

The study also found that analysis of hypothesis 2 in table 5 there is significant difference between more experienced geography teachers on their level of competencies possessed in teaching mapwork in secondary schools. This is because experience promotes the effectiveness of the teachers. The more experience the geography teachers gathers as a result of long years of service, the higher the performance of the teacher. This finding lends support to the findings of Koledoye (2011) and Agih (2008) who found a high relationship between teachers experience and their job performance. They explained that the longer a teacher works in a school, the greater probability that his productivity will be higher. They also found that teaching is an act that can be refined by training and practice and that the availability of competent teacher is very important in the

reconstruction development of educational system.

### **Educational Implication**

The findings of the study have the following educational implications:

- 1) Because of the in competencies expresses by those who are not specialized in geography and the less experienced geography teachers that teach mapwork in secondary schools, it will stand to mean that professionally qualified and experienced geography teachers should be employed to teach geography mapwork in our secondary schools. And if for whatever reason the other categories of teachers have to be employed to teach geography (mapwork), they should be made to undergo regular training and re-training programmes in order to fill the competency gaps that exist among geography teachers for effective teaching of mapwork in secondary schools.
- 2) The ministry of education should use the competencies identified as needed by geography mapwork teachers in this study and develop them into an evaluation instrument from which teachers can be assessed while in class by school inspectors and supervisors. This will provide a means for determining those teachers to be recommended for in-service/re-training programmes.
- 3) The findings of the study also have implication for institutions training geography teachers. The institutions should be encouraged to develop the identified competencies into an evaluation instrument for evaluating pre-service teachers during teaching practice sessions. The student teachers should be made to perform satisfactorily in most, if not all the competencies in the instrument before being allowed to graduate.

### **Conclusion**

This study has identified the competencies needed and possessed by geography mapwork teachers. It has also identified the competency gaps among geography teachers in the teaching of mapwork in secondary schools. It is expected that adequately planned and implemented training and re-training programmes that is based on the findings of this study will equip geography teachers adequately to teach mapwork effectively in secondary schools. As a result students' achievement both in internal and external examination will improve.

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