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Teaching Practice Experiences of Science Student Teachers and Their Effectiveness (A Case Study of the Department Of Science Education, Faculty of Education, University Of Calabar, Calabar)

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Abstract
This study examined "Teaching Practice Experiences of Science Student Teachers and their Effectiveness" in the Department of Science Education, Faculty of Education, University of Calabar. To achieve the purpose of the study, four hypothesis were formulated to guide the study. The study utilized case study research design, no sampling technique was used since the total number of the sample was the same as the total number of the population. Data were collected using two instruments, one being constructed by the researcher titled "Questionnaire for research on teaching practice experience (QRTPE)" and students' results for effectiveness. Pearson Product Moment Correlation Coefficient was used in analyzing data at 0.05 level of significant with 198 degree of freedom. The results show that there was a significant relationship between proper orientation, financial support, teaching of subject of specialization and professional standard of mentors on teaching practice effectiveness. It was therefore recommended that the duration for teaching practice orientation should be increased, government should provide financial support to student teachers, science student teachers should not be asked to teach outside their subject of specialization and only professional teachers should be assigned to serve as mentors to the student teachers.

Keywords: Teaching practice, teachers, student's teachers, effectiveness

1. Introduction

The word education is derived from a Latin word "Educare" meaning to bring out". To educate means to bring out what is best in an individual. It is the manifestation of perfection already found in man. Education therefore, is the process which an individual acquires the ways, beliefs, habits, and standard of the study, into which he is born Asuquo, Inaja, David and Bassey (2005).

The most important role of our educational systems is to build a brighter future for our nation's students as professionals and as citizens, which hinges on its ability to providing students with the skills to which reformation of attitudes, formation of social personality, occupational placement, transmit the central heritage and complete the socialization process.. (Bharat Kumar 2010). Teaching practice is an important component of becoming a teacher, it grants student teachers experiences in the actual teaching and learning environment (Ngidi & Sibaya 2003, Marcu's & Meire 2004, Perry 2004).

Marcu's and Meirer (2004) assert that the term teaching practice represents the range of experiences to which student teachers are exposed when they work in classroom and schools. The National Universities Commission (NUC) in the benchmark mininium academic standards for undergraduate programs in Nigerian universities (April 2007) identify teaching practice with the course code "Edu 500". It proceeds to describe it simply as "practiced implementation of teaching/learning strategies in the classroom as applied to the subject area" (Aglazor, 2016).

Teaching practice provides the laboratory where a student practicalises what he/she had

learnt concerning effective teaching. Students teaching practice is an important factor in preparing students for future teaching assignments. According to National Teacher Institution, teaching practice manual (2005), the general objectives of teaching practice are to enable the student teacher.

Despite the fact that currently in all Nigerian universities, teaching practice is a compulsory course in the faculties of education which forms part of the prerequisites for graduation. However, observation have shown that there is a decline in the quality of teaching practice being offered in the universities now. It appears that teaching practice as being currently run in the universities is considered as inadequate. There seems to be a lot of problems facing the prospective teachers in the course of carrying out the teaching practice exercise that seem to affect the effectiveness of the student teachers.

For instance, Idowu (2002) remarked that the programs is best with a multiplicity of problems and a lot of difficulties confronting student teachers cooperating teachers as well as the cooperating schools and supervisor, he identified some of the problems to include psychological makeup of the trainees, pedagogical preparations, classroom adaption and mode and means of assessment. Jekayinfa, Yahaya, Yusuf, Ajidagba, Oniye, Ogiyangi and Ibrahim (2012) have commented on the quality of teaching practice. The authors lamented that the quality of the exercise as being currently run is inadequate.

Ogonor and Badmus (2006) submitted that student teachers are not often properly groomed to put into practice current pedagogy and interactive skills that has been theoretically learnt. Studies have also revealed some other problems that bedeviled the teaching practice exercise for example Ogonor and Badmus (2006) lamented that teachers of partnership schools did not provide specific aid to student teachers to improve their teaching skills and strategies. Nakpadia (2011) remarked that the period of twelve weeks is too short as it does not provide the student teacher the ample opportunity to effectively gain the experience which the exercise is intended to encourage. The author remarked that some supervisor do not even have time to sit down and discuss their observations and comment with the student teacher. The short discussion between the supervisor and the student teacher just after the lesson, supervisor which should afford the student teacher the opportunity to appreciate his strengths and weaknesses are often ignored because the supervisor is often in a haste to move to the next school.

Adekunle (2002) acclaimed that the unserious attitude of the secondary school student towards the exercise often results to the student teachers not gaining the skills, confidence and knowledge to cope with the classroom situations,

Bhargava (2009) remarked that student teachers often complain that they forget the content matter, fell nervous when their lecturers sit at the end of the classroom and observe. The author remarked that the behavior of student teacher changes, comfort level becomes low and they find themselves in an artificial situation where their main consideration remains how to get good remarks in record sites.

1.2 Theoretical framework

Social Learning Theory – Albert Bandura (1963)

This theory was propounded by Albert Bandura in 1963. The theory propose that people learn through observing other behavior attitude and outcome of that behavior. Most human learn observationally through modeling from observing others one form an idea of how new behavior is performed and on later occasion, this coated informal serves as a guide for action. The theory explains human behavior in terms of continuous reciprocal interaction between cognitive behavioral and environmental influences.

The following steps are involved in the observation learning and modeling process.

Attention: In order to learn, you need to be paying attention. Anything that distracts your attention is going to have a negative effect on observation learning process.

Retention: The ability to store information is also an important part of the learning process, retention can be affected by a number of factors, but the ability to pull up information later and act is vital to learning.

Motivation: Finally, in order for observational learning to be successful, you have to be motivated. Reinforcement and punishment plays an important role in motivation, while experiencing these motivators can be highly effective, so can observing other experience some type of reinforcement or punishment.

The implication of this theory to this study is that, mentors, supervisors and co-coordinators of teaching practice play an important role in modeling of behaviours for teaching practice effectiveness.

2. 1 Research design

The research design employed for the study was the case study design. The design is considered most appropriate considering that the population of the study is finite, and it is characterized by efforts to learn as much as possible about the population. A sample size of 200 students was used for the study. Two instruments were used for the study; student's teaching practice result and the second being a questionnaire.

Results and Discussionl

Hypothesis one

There is no significant relationship between lack of proper orientation given to science student teachers and teaching practice effectiveness.

To test this hypothesis, Pearson, Product Moment Correlation Analysis was used for the analysis of data collected in respect to this hypothesis. The hypothesis was tested at 0.05 level of significant. The summary of the result is presented in Table 1.

Table 1: Result of Pearson Product Moment Correlation Analysis of relationship between proper orientation given to science student teachers and teaching practice effectiveness (N = 200)

Variables	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-cal
Proper orientation given to science students teachers	12941	5766.7592	17697.555	0.54
Teaching practice effectiveness	13629	18886.795		

$P < 0.05$, df = 189, r-critical = 0.

The result summarized in the Table 1 indicated that the calculated r-value of 0.54 was greater than the r-critical value of 0.159 at 0.05 level of significance with 198 degree of freedom. The null hypothesis which stated that there is no significant relationship between proper orientation given to science student's teachers and teaching practice effectiveness was rejected while the alternate hypothesis upheld. Hence, there is a significant relationship between proper orientation given to science student's teachers and teaching practice effectiveness.

Hypothesis two

There is no significant relationship between lack of financial support for science student teachers and teaching practice effectiveness. Pearson Moment Correlation Analysis was used to analyze the data collected in respect to this hypothesis. The hypothesis was tested at 0.05 level of significance. The summary of the result obtained from the analysis presented in Table 2.

Table 2 Results of Pearson Product Moment Correlation Analysis of relationship between financial support given to science students teachers and teaching practice effectiveness (N=200)

Variables	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-cal
Financial support given to science students teacher	13324	37665.12	19007.02	0.71
Teaching practice effectiveness	13629	18886.795		

P < 0.05, df = 189, r-critical = 0.159

The result summarized on the Table 2 indicated that the calculated r-value of 0.71 is greater than the r-critical value of 0.159 at 0.05 level of significance with 198 degree of freedom. The null hypothesis which stated that there is no significant relationship between lack of financial support given to science student's teachers and teaching practice effectiveness was rejected while the alternate hypothesis was upheld. Hence, there is a significant relationship between financial support given to science student's teachers and teaching practice effectiveness.

Hypothesis three

There is no significant relationship between the teaching of subject of specialization by science student's teachers and teaching practice effectiveness.

Table 3 Result of Pearson Moment Correlation Analysis of the relationship between the teaching of subject of specialization by science students teachers and teaching practice effective (N=200)

Variables	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-cal
Teaching of subject of specialization	13266	40828.22	19020.43	0.69
Teaching practice effectiveness	13629	18886.795		

P < 0.05, df = 189, r-critical = 0.159

The result as presented in Table 3, indicated that the calculated r-value of 0.69 is greater than the critical r-value of 0.159 at 0.05 level of significance with 198 degree of freedom. The null hypothesis was rejected while the alternate upheld. Hence, there is a significant relationship between the teaching of subject of specialization by science student's teachers and teaching practice effectiveness.

Hypothesis four

There is no significant relationship between the professional standard of mentors and teaching practice effectiveness. To test this hypothesis, Pearson Product Moment Correlation Analysis was used at 0.05 level of significance. The summary of the result is as presented in Table 4.

Table 4 Result of Pearson Product Correlation Analysis of the relationship between professional standard of mentors and teaching practice effectiveness (N=200)

Variables	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum XY$	r-cal
Professional standard of mentors	13088	51425.28	19048.24	0.61
Teaching practice effectiveness	13629	18886.795		

P < 0.05, df = 189, r-critical = 0.159

The result as presented in Table 4, indicated that the calculated r-value of 0.61 is greater than the critical r-value of 0.159 at 0.05 level of significance with 198 degree of freedom. With this result, the null hypothesis was rejected while the alternate upheld. Hence, there is a significant relationship between the professional standard of mentors and teaching practice effectiveness.

Discussion of findings

The first hypothesis states that there is no significant relationship between proper orientation given to science student's teachers and teaching practice effectiveness. The null hypothesis was however rejected because the calculated r-value was found to be greater than the tabulated r-value. The implication of this result is that there is a significant relationship between proper orientation given to science student's teachers and teaching practice effectiveness.

The findings of this hypothesis is in accordance with Cohen & Brewer (2003) that orientation programs empowers student teachers with the knowledge, skills and abilities to access an array of resources that can help them to have a more successful experience. More specially, an orientation program can help to improve new student teachers self-esteem, which can be an important predictor of personel and academic achievement (Hickman, Bartholomew &

McHenry, 2000).

The second hypothesis states that there is no significant relationship between financial support given to science student's teachers and teaching practice effectiveness. The null hypothesis was however rejected because the calculated r-value was found to be greater than the critical value. The interpretation of this is that there is a significant relationship between financial support given to science student's teachers and teaching practice effectiveness.

The findings of this hypothesis is in accordance with global campaign for education report (2006) which noted that with increased funding and support, it is possible to increase the proportion of qualified teachers without lowering the length and quality of students teacher training. Ajuzie, (2001) adds that adequate financial input is crucial to the success of any system of education because provision of equipment, procurement of material and other need is dependent upon availability of fund.

The third hypothesis states that there is no significant relationship between the teaching of subject of specialization by science student's teachers and teaching practice effectiveness. The null hypothesis was however rejected on the ground that the calculated r-value was found to be greater than the critical r-value. By implication, there is a significant relationship between the teaching of subject of specialization by science student's teachers and teaching practice effectiveness.

The findings of this hypothesis is in accordance with Brower (1996) who says that the advantage of teaching the subject of specialization by a teacher cannot be over emphasis as this leads to quality lesson delivery, good communication skills, classroom management, effective use of instructional material, and attainment of the lesson specific objectives and evaluation. Scheffler (2003) writes that this kind of subject matter understanding strengthens teacher's powers and heightens the possibilities of his/her air.

The fourth hypothesis states, that there is no significant relationship between the professional standards of mentors and teaching practice effectiveness. The null hypothesis was however rejected because the calculated r-value was found to be greater than the critical r-value. The interpretation of this result is that there is a significant relationship between professional standard of mentors and teaching practice effectiveness.

The findings of this hypothesis is in consonant with Feiman-Nemser, 1996 cited in Mallinix, 2002 that mentors when not strategically selected, can serve to perpetuate stagnant educational approaches. In other to avoid this, Tillman (2000) say that criteria such as knowledge of content and professional interest must be used in selecting mentors, such criteria NFIE's Teachers Mentoring Symposium (1999) conclude may be organized into four general categories; attitudes and character, communication skills, interpersonal skills and professional competence and experiences.

Conclusion

From the outcome of this study, it was concluded that, the duration of the orientation exercise should be increased with its objectives attend, government should provide financial assistance to the student teachers to help in coping with some of their needs, science students teachers should not be asked by cooperating schools to teach subjects which are outside their area of specialization and only professional teachers should be assigned to serve as mentors to the student teachers.

Recommendations

Based on the result of the statistical analysis of data collected for this study and the conclusion made thereof, the recommendations are made thus;

1. The institutions should ensure that during students teachers orientation exercise, the objectives should be clearly spelt out, instructional materials to meet with the goals of the objectives is used in a clean and conducive environment.
2. The government should provide financial assistance for student teachers which will help them afford means of accommodation, instructional materials and transportation.
3. The science student teachers should be allowed to teach only subject of his/her area of specialization which will lead to mastering of the subject matter, effective utilization of instructional material and competency in lesson delivery.
4. Only professional teachers should be allowed to act or serve as a mentor to science student as only a professional practitioner possess the special knowledge and skills needed for the mentoring process.

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Science education to some extent depends on the degree of professional and pedagogical competence of teachers. BaranoviÄ‡ [8] said that there is really a need therefore to redefine teachersâ€™ professional development for sustainability. The general components of teacher competencies were presented by Selvi [7] as follows: field, research, curriculum, lifelong learning, social-cultural, emotional, and communication.Â In science teaching, an effective teacher must have high regard for scientific competencies rather than simple contents and topics.Â Hence, teacher professional development has been a constant priority of the education sector. It is believed that effectiveness of teachers can be achieved by the grounding professional development in actual classroom practice [17].