ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

CHALLENGES OF PRE-SERVICE SCIENCE TEACHERS DURING TEACHING PRACTICE: BASIS FOR TEACHING PRACTICE ENHANCEMENT

[1]MUSA MOHAMMED AND [2]MAHADI G. DOKA
[1&2]DEPARTMENT OF CHEMISTRY, FEDERAL COLLEGE OF EDUCATION (TECH.), BICHI KANO NIGERIA

ABSTRACT

The study assessed the challenges of pre-service science teachers during teaching practice course. Lesson observation was conducted on the pre-service science teachers while teaching Basic science subject at Basic education levels. The study employed descriptive survey design and the result revealed 68.70%, 43.80% and 58.30% of the pre-service teachers have challenges in some teaching skills such as class control, use of activities to facilitate learning and time management respectively. However, 71.90% occasionally showed fairness and inclusiveness in their interactions. The study attributed the challenges to the inability of the preservice science teachers in relating theory lessons learnt to real classroom teaching and inadequate assistance from mentors in the classroom environment. Some suggestions such as pre-teaching workshop and more synergy between Colleges and mentors' school should be encouraged for better enhancement of teaching practice.

Keywords: Teaching practice, pre-service science teachers, teacher education, teaching skills.

INTRODUCTION

Science education is an essential training for attitudes, skills and knowledge for individual and societal development. In Nigeria, Colleges of education are among the teacher education institutions saddled with training of teachers. The mandate of the teacher training programme at the NCE level, which is the recognized minimum teaching qualification in Nigeria, is to produce quality teachers for the Basic Education level.

Teacher quality concerns the inputs that teachers bring to school including aptitude, professional preparation and prior professional work experiences (Tok, 2010). Teaching quality refers to what teachers do to promote students learning inside the classroom. It includes creating a positive learning environment, selecting appropriate instructional goals, and assessments, using the curriculum effectively, and employing varied instructional behaviors that help all students learn at higher levels.

The quality of teachers depends on the knowledge and skills acquired during the teacher education programmes. Nurcan & Mustafa (2015) emphasized that what student (pre-service teacher) learn in schools is directly connected to what and how teachers teach, which in turn depends on the knowledge and skills gained during teacher education programmes, and one of such essential programmes is teaching practice.

Teaching practice is an indispensable component of teacher education programmes, in which final year students of Colleges of education observe mentor teachers in real classroom. This is where student teachers experience actual teaching and culminate experience, which allow them to link theoretical knowledge and practical skills or the art of teaching (Gonca & Burcak, 2016; Tok, 2010). It helps pre-service teacher to integrate into teaching theoretical knowledge and skills gained during the teacher

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

education course. Evidence in the literature (Nurcan & Mustafa, 2015) have shown that success of teachers does not only depends on theoretical knowledge, but also on practical experiences. This informed the focus on classroom practice where practical experiences take place, to study the challenges of pre-service science teachers in real classroom environment during teaching practice.

OBJECTIVE OF THE STUDY

The main objective of the study is to investigate empirically the challenges preservice science teachers are facing in classroom interactions during teaching practice in some selected junior secondary schools in Bichi Local Government Area of Kano State, Nigeria.

RESEARCH QUESTION

Specifically the following research question was raised to guide the study; "What challenges are pre-service science teachers facing in the classroom interactions during teaching practice?"

RESEARCH DESIGN

The study employed a descriptive survey research design which dealt with the personal characteristics and qualities related to teaching skills. The research instruments are modified lesson observation questionnaire and preservice science teacher's lesson plans. The lesson observation instrument was developed by NCCE/TDP (2016) for assessing student teachers qualities/skills in teaching. The instrument consist of teaching qualities/behaviors determined by four points scale ranging from frequently observed (i. e. Behavior observed more than four times) **=1**, occasionally observed (i. e. Behavior observed three or four times) **= 2**, rarely observed (Behavior observed once or twice) **= 3** and **4 =** Behavior not observed. The instrument was validated by two experts' contributions. The study also used the preservice teachers' lesson plans as a source of data. The data were analyzed using frequency counts percentage.

RESEARCH POPULATION

The population of the study was all the 320 pre-service science teachers of the school of secondary education (science), Federal college of education (Technical), Bichi who participated in teaching practice during the 2019/2020 academic year. The random sampling was used in selection of thirty two (32) pre-service science teachers posted to some junior secondary schools in Bichi local Government Area as the participants. The participants taught Basic science at their schools of teaching practice training. During the training, the participants (lesson observation) and their lesson plans were observed by the supervisors and one of the researchers.

DATA ANALYSIS AND RESULTS

The results of the lesson observation conducted are presented in Table 1 below under five categories of teaching behaviors/skills namely; Lesson planning, presentation and pedagogy, classroom management, relationship with learners and evaluation.

Table 1: Result (number and %)

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

S/N		**1**	**2**	**3**	**4**
	Lesson planning	**Frequently observed**	**Occasionally observed**	**Rarely observed**	**Not observed**
1	Teacher has prepared a lesson plan	3(9.40)	20(62.50)	6(18.70)	3(9.40)
2	Lesson objectives clearly and fully stated	3(9.40)	6(18.70)	4(12.5)	19(59.40)
3	Clear steps for lesson presentations	2(6.30)	5(15.60)	3(9,40)	22(68.70)
S/N	**Presentation and Pedagogy**	**1**	**2**	**3**	**4**
1	Teacher introduces and give a quick overview of the topic	6(18.70)	16(50.00)	10(31.30)	0.00
2	Teacher makes reference to the prepared lesson plan	4(12.50)	5(15.60)	9(28.10)	14(43.80)
3	Teacher uses variety instructional materials	19(62.50)	9(28.10)	3(9.40)	0.00
4	Teacher uses activities to facilitate learning	4(12.50)	6(18.70)	14(43.80)	8(18.70)
5	Teacher uses variety of instructional strategies	13(40.60)	12(37.50)	5(15.60)	2(6.30)
6	Teacher manage time well	9(28.10)	5(15.6)	0.00	18(58.30)
7	Teacher encourage pupils questions/participations	19(59.40)	10(31.30)	3(9.40)	0.00
8	Teacher talking to whole class	22(68.70)	6(18.70)	4(12.50)	0.00
9	Mastery of subject/topic content	10(31.30)	4(12.50)	18(56.30)	0.00
10	skillful use of teaching Board	20(62.50)	12(37.50)	0.00	0.00
S/N	**Classroom management**	**1**	**2**	**3**	**4**
1	interruption to lesson	0.00	22(68.70)	3(9.40)	7(21.90)
2	Reinforcement for				

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

	learners	26(81.10)	6(18.70)	0.00	0.00
3	use of cane/physical forces/threats	0.00	0.00	2(6.30)	30(93.70)
S/N	**Relationship with learners**	**1**	**2**	**3**	**4**
1	use of learners name	20(62.50)	12(37.50)	0.00	0.00
2	Fairness and inclusiveness in the interactions	9(28.10)	23(71.90)	0.00	0.00
3	Responds to individual learner	22(68.70)	10(31.30)	0.00	0.00
4	Role model behaviors in dressing and attitudes	17(53.10)	13(40.60)	2(6.30)	0.00
S/N	**Evaluation**	**1**	**2**	**3**	**4**
1	Teacher walks round the class checking understanding	9(28.10)	23(71.90)	0.00	0.00
2	Teacher uses variety of assessment techniques	3(9.40)	7(21.90)	22(68.70)	0.00
3	Teacher encourage learners to ask questions	2(6.30)	11(34.40)	19(59.40)	0.00
4	Teacher checks the achievement of lesson objectives	13(40.60)	19(59.4)	0.00	0.00
5	Teacher gives relevant task and assignment	10(31.3)	22(68.70)	0.00	0.00

DISCUSSION OF FINDINGS

Lesson planning: The results under lesson planning, showed higher percentage (62.50%) of the participants have good record of lesson plans, but the statement of lesson objectives and the steps for the lesson presentation of 59.40% and 68.70% of the pre-service teachers need improvement respectively. It was also observed from the lesson plans that, five to seventh weeks in to the teaching practice 59.40% of the pre-service teachers' lesson plans showed no comments or corrections made by either school mentors or college supervisors. This indicated the level of the treatments received by some preservice teachers during teaching practice. Thus, may be one of the reasons for the flaws found in the pre-service teachers lesson planning. Planning a lesson is what a teacher should do even before getting to the classroom. It guides what

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

to teach, how to teach and how to evaluate the lesson. It helps to enable the student teacher, the supervisor and the mentor teacher to assess whether the student teacher have realized their objectives. It also gives inexperience student teacher a feeling of self-confidence (Olaitan & Aguisobo, 1981). In this study, the cause of the observed challenge in planning may be related to the insufficient support received from the mentors and supervisors. Study by Gokce & Demirhen (2005) reported school mentors and College supervisors' inadequate support in developing lesson plans. Many educators concord on lack of time as their reasons for not attending pre-service teachers (Nurcan & Mustafa, 2015). Study by Tok (2010), reported that student teachers did not talk with their mentors about their lesson plans before their teaching.

Lesson presentation and pedagogy: The observations under the lesson presentation and pedagogical skills revealed the percentages (59.40, 68.70, 62.50 and 62.50 %) of the pre-service teachers frequently encouraged pupils' participations, talked to whole class, and skillfully used teaching board and instructional materials respectively. However, 43.80% of the teachers observed, rarely use activities to facilitate learning and also effective time management was not observed by the majority (58.30%) of the pre-service teachers. This indicated a challenge, which may be attributed to the pre-service teachers weaknesses in effective lesson planning observed. According to Tok (2010) making plans help student teachers to use time effectively. The study, observed the inefficiency of the pre-service teachers in time management from the lists of activities and tasks to accomplish, but time doesn't allow them to achieve. Also the rarely observed use of activities to facilitate learning, entails a challenge in qualities required for teaching science; encouraging activities teaching and learning instruction is the recommended skills in science instruction needed for a paradigm shift from the traditional method of instruction to the learner centeredness. Teaching using activities approach motivates pupils to learn and remember what is learnt when there is a recall. In agreement, Okeke, (2007) reported, that students achieve better in science when taught through activity based approaches. However, it requires appropriate space and physical resources for the exploration to take place and since most of the schools don't have such facilities, this makes teaching complicated and difficult. Probably the reasons for the rarely observed used of activities in the study.

Classroom control or management: In classroom control, the observation showed high percentage (68.70%) of the teachers have problems in classroom control due to the occasionally observed disruptive behaviors that occurred in their classes. The study attributed the occasionally disturbances observed to the inadequate experience of the pre-service teachers and the overcrowded nature of the classes. This goes with Morses's study (1994) that congested classroom increases the probability of disciplinary problems and leads teachers to follow a traditional methods of instructions.
However, despite the distractions in the classes, the study does not observe the use of cane, physical forces or threatening behaviors (100%) in controlling the challenges. This is encouraging due to the side effects of the use of cane or force on students, especially physical punishment, which prevents the emergence of various creativity, innovative thinking and achievements of learning (Mohammed, 2011). The imposition of punishment has presented a very little impact, and when the punishment is absent, the punished student returns to his first behavior, perhaps in stubbornness or in reaction

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

act of his punishment. In fact, the consequences of punishment by teachers in front of children always leave bad memories.

The ability of a teacher to organize classroom and manage the behavior of their students is critical to achieving positive educational outcomes (Tok, 2010). The study also attributed the effects to the inadequate preparations of lesson planning and professional development of the pre-service teachers. Planning helps teachers in time and class control effectively. Olaitan & Agusioba (1981) emphasized that planning produces a smoothly running of classroom with few discipline problems and fewer interruptions.

Relationship with learners: it can be observed from Table 1 that, 62.50% of the preservice teachers addressed their learners by names, 68.70% respond to individual learners frequently and 71.90% of their interactions were occasionally fairness and inclusiveness. This indicates supportive interaction and interestingly demonstrated some qualities of a role model teacher, which is not surprising from a student of teacher education programme. The behaviors agrees with the belief, that bias leads to lack of objectivity and fairness and Unbiased behaviors leads to friendship, love, trust and increases students' interactions with teachers and with each other. This agrees with Wayman (2002) who stated that, students' alienation from school is a major cause of dropping out and poor teacher – students' relationships.

Evaluation: Another challenging area observed was evaluation. Though 71.90% of the pre-service teachers were frequently observed checking understanding by walking round the classroom. However, 68.70% and 59.40% rarely uses variety of assessment techniques and checking achievements of lesson objectives respectively. This was also observed in the pre-service teachers' lesson notebooks, where class activities/works, assignments or home works were rarely indicated. Teacher educators insists that their preparation programmes teach classroom evaluation skills, but the indication is that such skills are not taught thoroughly or with adequate supervision in real classroom (Nurcan & Mustafa, 2015). Many teacher educators reported inadequate training of the pre-service teachers and little assistance from mentors and supervisors in establishing productive classroom environment (Baker, 2005). Thus, classroom practice where practical experiences takes place should not be underrated. Hence, all stake holders in education should consider ways of addressing teaching practice challenges for better enhancement.

CONCLUSION

Pre-service science teachers were observed (Lesson observation) during teaching practice course and the main areas of challenges identified include lesson planning, use of activities to facilitate learning, time management, classroom control and uses of variety of assessment techniques in lesson evaluation. Many of these challenges can be related to the pre-service science teachers' inability in relating theory lessons learnt to real classroom teaching and the inadequate assistance from mentors or supervisors in the classroom environment. Therefore, there is no doubt that experience in teaching is considered the most important element for a teachers, besides other elements such as preparation and use of teaching materials.

RECOMMENDATIONS

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

To enhance pre-service science teachers competencies in teaching the following suggestions are proffered for consideration;

1. More cooperation/ synergy between Colleges and mentors' school should be made to discuss thoroughly on the selection of mentors with teaching experience and who can provide the best mentoring to the pre-service teachers.
2. College/teaching practice coordinator should take into consideration the importance of teaching practice by providing all that is required for effective supervision on time and appropriate sanction should apply to supervision defaulters.
3. College/teaching practice coordinator together with the internship supervisors should take into consideration the observations/suggestions of cooperating teacher (mentor) in handling the next batches of the pre-service teachers in teaching practice.
4. Workshops should be conducted for pre-service teachers before teaching practice period to discuss some important criteria in teaching skills. This will increase performance and reduce pre-service teachers' anxiety in teaching.
5. It's vital for teacher education programmes to make connections between theoretical and methodological issues. 6. Study should be conducted on the student teachers' challenges in other schools and colleges, and involving other variables.

REFERENCES

Cochran – smith, M. (2004). The problem of teacher education. *Journal of teacher education*. 55(4): 294 – 299.

Gonca, Y. E. & Burcak, Y. Y. (2016). To be Anxiety or not: student – teachers in the practicum. *Universal journal of educational research* 4(6): 1332 – 1339.

Joseph, P., Valentina O., Isaac, A., & Johnson, K. (2018). Challenges faced by teachers in teaching integrated science in junior high schools in Aowin municipality-Ghana. *Journal of education and practice* 9(12): 65 – 68.

Mohammed S.A. (2011). The classroom problem faced teachers at the public schools in Tafila province, and proposed solutions. *International journal of edu. Scie*. 3(1): 37 – 48.

Morses, W. (1994). The role of caring in teaching children with behavior problems. *Journal of contemporary education.* 65: 32 – 46.

Mosaddaq, Y. B. (2016). A study of sources of EFL student teachers' Anxiety during their practicum experience. *European journal of research and reflection in educational sciences.* 4(1):

NCCE/TDP, (2016). A technical manual for managing incentive award for Colleges of Education.

Nurcan C. & Mustafa Cansiz (2015). The challenges faced by preservice science teachers during teaching practice. *The Eurasia proceedings of educational and social science* (EPESS) vol. 2: 40 – 42.

ISSN: 2335-3345. https://watarijournal.com. Email: bichisose@yahoo.com TETFund sponsored

Okeke, A. U.G. (2007). Effective teaching of periodic table using activity based approach. Effective methods of teaching difficult concepts in chemistry. STAN chemistry panel series 2 in Olayiwola M. A. & Walter S. Umoh edition; 35 – 41.

Olaitan, S. O. & Agusioba, O. N. (1981). Principles of practice teaching, New York: John Wiley & Sons.

Tok, Sukran (2010). The problems of teacher candidates about teaching skills during teaching practica. *Procedia social and behavioral sciences*. 2: 4142 – 4146.

Waymen, J. (2002). Student perceptions of teachers ethnics bias: a comparison of Mexican American and non- Latino white drop out. *Journal of high school journal*. 85(1): 27 – 37.