TEACHING PRACTICE CHALLENGES: THE EXPERIENCE OF PRE-SERVICE PHYSICS TEACHERS IN RIVERS STATE

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Abstract

The study investigated the teaching practice challenges experienced by pre-service physics teachers in Rivers State. Physics education undergraduates of four public tertiary institutions in Rivers state were involved in the study. Two research questions guided the study. The study had a descriptive survey design. Purposive sampling technique was used to select ninety-eight (98) physics education undergraduates in penultimate and final years in the four public tertiary institutions for this study. The research instrument was a validated researcher-developed questionnaire titled 'Teaching Practice Challenge Questionnaire' (TPCQ)with a reliability coefficient of 0.75 obtained using Cronbach alpha formula. The data obtained for the study was analyzed using frequency count, percentage, mean and standard deviation. The study revealed that the challenges experienced by Preservice Physics teachers during Teaching Practice are: short duration of Teaching Practice exercise, inadequate preparation of preservice physics teachers by their institutions before Teaching Practice exercise, supervisors not being in area of specialization of pre-service physics teachers, some unfriendly supervisors, lack of conducive environment and instructional facilities in most cooperating school. It was then recommended that enough time should be allotted to Teaching Practice exercise, institutions should properly prepare pre-service physics teachers by conducting micro teaching and proper orientations for them prior to Teaching Practice exercise, Supervisors in area of specialization of pre-service physics teachers should be posted to supervise them and they should be encouraged to be friendly and approachable to pre-service physics teachers while cooperating schools which have conducive learning environments should be involved in Teaching Practice exercise.

Keywords: Teaching practice, Challenges, Pre-service, Physics teachers.

Introduction

Teaching is a very important profession that touches other professions. Teaching is actually the mother of all professions. According to Federal Republic of Nigeria (2014), all teachers in educational institutions shall be professionally trained. Consequently, Teacher education in Nigeria programs are structured to provide teachers with the intellectual and professional background in order to equip them for effective performance of their duties. As part of the training for many professions in the world, the trainees are involved in a period of hands-on engagement in the practice of the course for which they are being trained under the guidance of experienced professionals in their field. Such is the period of Teaching Practice (TP) for students (Pre-service Teachers) being trained to become teachers.

Hamilton-Ekeke (2016) defines Teaching Practice (TP) as an exercise in which Pre-service Teachers (PTs)are guided to acquire practical skills and competences necessary for effective teaching after training. During TP exercise, PTs experience the real classroom (Davidson, 2005). It consists of the experiences to which PTs are exposed in schools (Marais & Meier, 2004). It is a period when PTs try the art of teaching before getting into the real world of teaching profession (Okobia, Ogumogu & Osagie, 2013). In the view of Nakpodia (2011), the aim of TP is to give the PTs the opportunity to acquire a first-hand knowledge of the

actual work of a teacher in typical classroom situations, correct common pedagogical errors and build confidence in the Preservice teacher.

In the training of teachers, Teaching Practice is a compulsory component of the curriculum which enables PTs to put into practice all the pedagogical principles they have been taught in theory, builds confidence in them and enables them gain expertise in the teaching profession thereby giving them the professional background needed to become a teacher. It is so crucial that even the Pre-service teachers recognize its importance. This is confirmed by the findings of the study conducted by Gujja, Naoreen, Saifi and Bajwa (2010) in which 87.6% of the prospective teachers (also known as Preservice Teachers) involved in the study agreed with the importance attached to Teaching Practice. It is a form of Ivory tower and industry partnership in the training of teachers.

On the gains of TP, Ozdemir and Yildirim (2012) discovered that PTs stated that acquisition of teaching experience, recognition of profession and development of communication skills are their major gains of TP. In the same vein, Koross (2016) found that TP enables PTs to gain experience in the teaching profession, gives opportunity to try out ideas and theories in practical classroom situation, develops interest in teaching, enables the mastering of professional skills, broadens knowledge on subject matter, gives opportunity to learn the planning preparation and presentation of lessons, teaches the use of instructional materials, gives opportunity to learn classroom management, enables acquisition of personality attributes associated with an outstanding teacher and helps to learn the correct use of reinforcement and assessment skills. Similarly, Gujja, Naoreen, Saifi and Bajwa (2010) found that TP enables PTs acquire experience and knowledge of delivering lessons, organizing classes and teaching skills. However, as important as TP exercise is in the training of PTs, it is bedeviled with challenges (on the part of every stakeholder involved in the exercise) which try to mar its essence and reduce its quality over time.

Concerning Institution-related challenges facing PTs during TP exercise, Gujja, Naoreen, Saifi and Bajwa (2010) discovered appropriate information not given in orientation about TP and short duration of TP. Azeem (2011) discovered lack of orientation for PTs before TP exercise and lack of training on use of instructional materials before TP exercise. Okobia, Ogumogu, and Osagie (2013) discovered short duration of TP, inadequate TP orientation for PTs before TP exercise and TP clashing with lectures on campus. Ekundayo, Alonge, Kolawole and Ekundayo (2014) discovered short duration of TP, inadequate preparation of students for TP, lack of micro teaching and supervisors do not discuss observation and comments with PTs. Mutlu (2014) discovered short duration of TP while Bichi and Musa (2017) discovered inadequate preparation of PTs by the Institution, lack of necessary facility and equipment to prepare PTs and short TP period. Azeem (2011) however discovered that 73% of PTs were given practical training for lesson planning before TP exercise.

Concerning Supervisor-related challenges facing PTs during TP exercise, Okonkwo and Chikwelu (n.d) discovered lack of cordial relationship between supervisors and PTs and lack of feedback from some supervisors to enable PTs make corrections. Ozdemir and Yildirim (2012) discovered that supervisors were lacking in the duty of supervision, they did not evaluate PTs systematically and did not provide feedback to PTs. Okobia, Ogumogu, and Osagie (2013) discovered poor relationship between PTs and supervisors while Koross (2016) discovered irregular supervision, and unfriendly supervisors. However, Okonkwo and Chikwelu (n.d) discovered that supervisors went through lesson notes and spent time to supervise. Gujja, Naoreen, Saifi and Bajwa (2010) discovered that supervision was well done. Azeem (2011) discovered that supervisors pointed out PTs' weaknesses and regularly

supervised lessons while Bichi and Musa (2017) discovered that PTs got sufficient guidance from supervisors.

Concerning cooperating school-related challenges facing PTs during TP exercise, Okonkwo and Chikwelu (n.d) discovered non-cooperative attitude of cooperating teachers with PTs, lack of facilities/ accommodation for PTs, overcrowded classrooms, poor facilities for teaching and learning and non-availability of relevant textbooks. Kiggundu and Nayimuli (2009) discovered that some PTs were not well integrated into school and unruly students. Gujja, Naoreen, Saifi and Bajwa (2010) discovered that choice of PTs not considered while allocating classes, no opportunity to discuss with cooperating teachers and get feedback, PTs described TP as unsatisfactory and lack of instructional materials. Azeem (2011) discovered PTs were not properly introduced nor properly integrated, non-attendance of Cooperating teachers at lessons and lack of guidance and encouragement from Cooperating teachers. Ozdemir and Yildirim (2012) discovered insufficient physical facilities, overcrowded classrooms and many PTs assigned to same cooperating school. Okobia, Ogumogu and Osagie (2013) discovered accommodation problem, lack of instructional materials, PTs were rejected at schools, PTs are given too much workload, lack of respect for PTs, poor learning environment and overcrowded classrooms. Ekundayo, Alonge, Kolawole and Ekundayo (2014) discovered accommodation problem, rejection of PTs, lack of instructional materials, unwilling attitude of school to integrate PTs into their schedule, poor learning environments, lack of mentorship by cooperating teachers, giving PTs subjects out of their area of specialization, uncooperating attitude towards PTs and posting to primary schools.

Furthermore, Mutlu (2014) discovered that the cooperating teachers were rude to PTs. Koross (2016) discovered rejection of PTs, unfriendly nature of cooperating teachers, hoarding of professional advice by cooperating teachers, accommodation problem, lack of instructional materials, PTs are given excess workload, rudely behaved students in cooperating schools and far distance. Bichi and Musa (2017) discovered class congestion (overpopulation of students), rejection of students by cooperating schools, difficulty to get to school, inaccessibility of some schools and PTs were burdened with much workload. Udogu, Enukora and Okonkwo (2018) discovered accommodation problem, lack of instructional materials, cooperating teachers unwilling to help, PTs are given too much workload and are not well motivated. However, Okonkwo and Chikwelu (n.d) discovered that PTs were involved in extra-curricular activities. Azeem (2011) discovered that 65% of PTs taught classes of their choice. Okobia, Ogumogu, and Osagie (2013) discovered that Cooperating teachers related well with PTs, there was no transport challenge and PTs were well received by cooperating schools while Bichi and Musa (2017) discovered that PTs got sufficient guidance from cooperating teachers.

Concerning Preservice teacher-related challenges facing PTs during TP exercise, Okonkwo and Chikwelu (n.d) discovered inability of PTs to master subject matter (poor content knowledge of subject), inability of PTs to improvise instructional materials, Nervousness and inability to properly manage the students (class management). Azeem (2011) discovered transportation challenge and lack of acceptance as teacher by students in cooperating schools. Ozdemir and Yildirim (2012) discovered PTs experienced humiliation, verbal insult, disregard, physical and verbal violence, classroom management problems and inability to communicate well in class. Okobia, Ogumogu and Osagie (2013) discovered classroom management problems and that TP was a stressful period for PTs. Ekundayo, Alonge, Kolawole and Ekundayo (2014) discovered nervous feeling and inability to use various teaching method. Mutlu (2014) discovered classroom management problems and inability of PTs to apply pedagogical principles learnt in real classroom situation while Koross (2016) discovered lack of respect for PTs and financial challenge.

However, Okonkwo and Chikwelu (n.d) discovered that PTs were able to utilize instructional materials properly, they were able to apply appropriate teaching skills and were able to write lesson notes. Okobia, Ogumogu and Osagie (2013) discovered that PTs had no difficulty in lesson note preparation while Ekundayo, Alonge, Kolawole and Ekundayo (2014) discovered that PTs were able to instill discipline in students, have good knowledge of lesson note preparation and are able to make good use of instructional materials. On the way forward, Udogu, Enukora and Okonkwo (2018) found that PTs wants cooperating schools to provide accommodation for them, give PTs enough time on the school's time table, provide PTs with instructional materials, should not give PTs excess workload, principals should monitor the relationship between PTs and students in cooperating schools and cooperating schools should provide adequate guidance for PTs.

Physics is a science subject which has been seen as abstract and difficult, but it is a necessary subject which has to be offered by students who are aspiring to become scientists, engineers, technologists, medical personnel, science teachers among other science and technology professions. This underscores the importance of the knowledge of physics in so many professions that touch human life on a daily basis. Some of the challenges which have been facing the teaching and learning of physics are poor teacher's knowledge of physics concepts and ineffective application of pedagogical principles in physics lessons. These subsequently reflect in the poor perception and performance of students in physics. Could these issues be linked to the experiences and challenges encountered by physics teachers during Teaching Practice? It is necessary to obtain feedback from physics PTs on their experiences during TP exercise. This is because if faced with overwhelming challenges, TP exercise will not produce the desired result of the preparation of sound physics teachers for effective physics teaching. A physics teacher who is not adequately prepared during TP will not be able to effectively teach physics concepts which have already be seen as abstract and difficult. This study therefore intends to investigate the challenges encountered by pre-service physics teachers during teaching practice exercise and ways of ameliorating the challenges.

Purpose of the study

The purpose of this study is to investigate the challenges encountered by pre-service physics teachers during teaching practice exercise.

Specifically, the objectives of the study are to:

(i) investigate the challenges encountered by pre-service physics teachers during teaching practice exercise.

(ii) ascertain ways of ameliorating the challenges experienced by pre-service physics teachers during teaching practice exercise.

Research Questions

The following research questions guided the study:

(i) What are the challenges encountered by pre-service physics teachers during teaching practice exercise?

(ii) What are the ways of ameliorating the challenges experienced by pre-service physics teachers during teaching practice exercise?

Methodology

The study had a descriptive survey design. Purposive sampling technique was used to select ninety-eight (98) physics education undergraduates in penultimate and final years in the four public tertiary institutions for this study. The institutions are University of Port Harcourt and Federal College of Education (Technical) (which are Federal Government institutions) as well as Rivers State University and Ignatius Ajuru University of Education (which are Rivers

state Government institutions). Physics education undergraduates in only penultimate and final years were selected because they are the ones who have participated in Teaching Practice exercise. The research instrument was a validated researcher-developed, thirty-six (36) item questionnaire titled 'Teaching Practice Challenge Questionnaire' (TPCQ) with a reliability coefficient of 0.75 obtained using Cronbach alpha formula.

The instrument (TPCQ) has two sections. Section A was used to gather information on the respondents' bio-data. Section B contained twenty-four (24) items addressing challenges encountered by pre-service physics teachers during teaching practice exercise. Items 1 to 4 addressed Institution-related challenges, items 5 to 7 addressed Supervisor (Lecturer)-related challenges, items 8 to 15 addressed Cooperating School-related challenges, items 16 to 24 addressed Preservice teacher-related challenges. Section C contained twelve (12) items addressing ways of ameliorating challenges encountered by pre-service physics teachers during TP exercise. The responses were based on the modified 4 - point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) scored 4, 3, 2 and 1 respectively. The instrument (TPCQ) was administered to the ninety-eight (98) physics education undergraduates selected for this study and retrieved after their responses were given. Frequency count, mean, percentages and standard deviation were used to analyze the data obtained. A criterion mean value of 2.50 was used to make decisions to accept or reject the items. An item whose mean is greater than 2.50 is accepted while an item whose mean is less than 2.50 is rejected as a challenge or way of ameliorating a challenge.

Research Question one: What are the challenges encountered by pre-service physics teachers during teaching practice exercise?

Table 1: Frequency, mean, percentage and standard deviation of challenges encountered by pre-service physics teachers during TP exercise

S/N	ITEMS	SA	A	D	SD	Total score	Total Respondents	Mean	SD	Decision
1	Inconsistent calendar of institution	59 (60.20)	4 (4.08)	3 (3.06)	32 (32.65)	286	98	2.92	1.40	Accepted
2	Short duration of TP exercise	67 (68.37)	11 (11.22)	4 (4.08)	16 (16.33)	325	98	3.32	1.14	Accepted
3	Lack of proper orientation for preservice teachers prior to TP exercise	69 (70.41)	3 (3.06)	7 (7.14)	19 (19.39)	318	98	3.25	1.23	Accepted
4	Micro teaching is not always conducted	52 (53.06)	9 (9.18)	5 (5.10)	32 (32.65)	277	98	2.83	1.37	Accepted
5	Supervisors in area of specialization different from that of preservice teacher	66 (67.35)	8 (8.16)	4 (4.08)	20 (20.41)	316	98	3.22	1.22	Accepted
6	Hostile supervisors	61 (62.24)	10 (10.20)	1 (1.02)	26 (26.53)	302	98	3.08	1.31	Accepted
7	Sexual harassment from some supervisors	62 (63.27)	8 (8.16)	3 (3.06)	25 (25.51)	303	98	3.09	1.30	Accepted
8	Posting to far cooperating schools	82 (83.67)	8 (8.16)	1 (1.02)	7 (7.14)	361	98	3.68	0.82	Accepted
9	Posting to cooperating schools of lower level such as primary school	73 (74.49)	6 (6.12)	5 (5.10)	14 (14.28)	334	98	3.41	1.10	Accepted
10	Accommodation problem	82 (83.67)	2 (2.04)	1 (1.02)	13 (13.27)	349	98	3.56	1.04	Accepted

11	Unconducive learning environment of cooperating school	78 (79.59)	2 (2.04)	1 (1.02)	17 (17.35)	337	98	3.44	1.15	Accepted
12	Overpopulation of students in cooperating schools	81 (82.65)	1 (1.02)	2 (2.04)	14 (14.28)	345	98	3.52	1.08	Accepted
13	Uncooperating attitude of students in cooperating schools	57 (58.16)	8 (8.16)	9 (9.18)	24 (24.49)	294	98	3.00	1.29	Accepted
14	Unwillingness of cooperating schools to integrate preservice teachers in their timetables	47 (47.96)	2 (2.04)	14 (14.29)	35 (35.71)	257	98	2.62	1.39	Accepted
15	Rejection of preservice teacher by cooperating schools	71 (72.45)	6 (6.12)	5 (5.10)	16 (16.33)	328	98	3.35	1.15	Accepted
16	Nervous feeling of preservice teacher in class	70 (71.43)	4 (4.08)	2 (2.04)	22 (22.45)	318	98	3.25	1.26	Accepted
17	Inability of preservice teacher to effectively communicate in class	58 (59.18)	11 (11.22)	8 (8.16)	21 (21.43)	302	98	3.08	1.24	Accepted
18	Poor classroom management by preservice teacher	62 (63.27)	4 (4.08)	6 (6.12)	26 (26.53)	298	98	3.04	1.33	Accepted
19	Preservice teachers' poor content knowledge of subject matter	53 (54.08)	5 (5.10)	10 (10.20)	30 (30.61)	277	98	2.83	1.36	Accepted
20	Little knowledge of pedagogical principles by preservice teacher	67 (68.37)	3 (3.06)	2 (2.04)	26 (26.53)	307	98	3.13	1.33	Accepted
21	Shallow knowledge of lesson plan preparation by preservice teacher	68 (69.39)	2 (2.04)	2 (2.04)	26 (26.53)	308	98	3.14	1.33	Accepted
22	Use of ineffective instructional strategies by preservice teachers	62 (63.27)	11 (11.22)	5 (5.10)	20 (20.41)	311	98	3.17	1.22	Accepted
23	Preservice teachers buy or construct instructional materials by themselves	62 (63.27)	7 (7.14)	4 (4.08)	25 (25.51)	302	98	3.08	1.31	Accepted
24	Use of inadequate instructional materials by preservice teachers	62 (63.27)	5 (5.10)	7 (7.14)	24 (24.29)	301	98	3.07	1.30	Accepted

(Figures in parentheses are percentages)

Table 1 is sub-divided as follows:

Items 1 to 4 addressed Institution-related challenges

64.28% of the pre-service physics teachers strongly agreed and agreed that their institution's calendar is inconsistent, 79.59% of them strongly agreed and agreed that the duration of TP exercise is short, 73.47%of them strongly agreed and agreed that they were not given proper orientation prior to TP exercise while 62.24%of them strongly agreed and agreed that micro teaching is not always conducted for them by their institution.

Items 5 to 7 addressed Supervisor (Lecturer)-related challenges
75.51%of the pre-service physics teachers had supervisors in area of specialization different from theirs, 72.44%of them had hostile supervisors while 71.43% of them strongly agreed and agreed that there was sexual harassment from some supervisors.

Items 8 to 15 addressed Cooperating School-related challenges
91.83%of the pre-service physics teachers were posted to far cooperating schools, 80.61%of them were posted to cooperating schools of lower level such as primary schools, 85.31%of them had accommodation problem, 81.63%of them were posted to cooperating schools which have unconducive learning environments, 83.67%of them were posted to cooperating schools with overpopulation of students, 66.32%of them experienced uncooperating attitude from students in schools where they had their TP, Cooperating schools were unwilling to integrate 50.00%of the pre-service physics teachers in their timetable while 78.57%of them were rejected by cooperating schools.

Items 16 to 24 addressed Preservice teacher-related challenges
75.51%of the pre-service physics teachers had nervous feeling in class, 70.40%of them were unable to effectively communicate in class, 67.35%of them had the challenge of class management, 59.18%of them had poor content knowledge of subject matter, 71.43%of them had little knowledge of pedagogical principles, 71.43%of them had shallow knowledge of lesson plan preparation, 74.49%of them used ineffective instructional strategies, 70.41%of them bought or constructed instructional materials by themselves while 68.37% of them used inadequate instructional materials by preservice teachers.

More than 50% of the Pre-service physics teachers strongly agreed and agreed that each of the item on Table 1 was a challenge they encountered during TP exercise. Similarly, the mean value of each the items is also greater than 2.50 the criterion mean. Thus, all the items are accepted as challenges encountered by pre-service physics teachers during Teaching Practice exercise.

Research Question two: What are the solutions to the challenges experienced by pre-service physics teachers?

Table 2: Frequency, mean, percentage and standard deviation of ways of ameliorating the challenges encountered by pre-service physics teachers during TP exercise

S/N	ITEMS	SA	A	D	SD	Total score	Total Respondents	Mean	SD	Decision
25	Duration of TP exercise should be extended	68 (69.39)	9 (9.18)	8 (8.16)	13 (13.27)	328	98	3.35	1.10	Accepted
26	TP exercise manual should be made available to preservice teachers	62 (63.27)	3 (3.06)	7 (7.14)	26 (26.53)	297	98	3.03	1.34	Accepted
27	Preservice teachers should be involved in Micro teaching prior to TP exercise	75 (76.53)	2 (2.04)	3 (3.06)	18 (18.37)	330	98	3.37	1.19	Accepted
28	Micro teaching Laboratory should be made available in Higher institutions	57 (58.16)	14 (14.28)	10 (10.20)	17 (17.35)	307	98	3.13	1.17	Accepted
29	Supervisor should be in subject area related to that of	64 (65.31)	9 (9.18)	1 (1.02)	24 (24.49)	309	98	3.15	1.28	Accepted

	preservice teacher									
30	Supervisors should be given frequent orientation on TP supervision	72 (73.47)	2 (2.04)	4 (4.08)	20 (20.41)	322	98	3.29	1.24	Accepted
31	Accommodation should be provided for preservice teachers on far posting	70 (71.43)	4 (4.08)	3 (3.06)	21 (21.43)	319	98	3.26	1.25	Accepted
32	Preservice teachers on far posting should be financially supported	66 (67.35)	6 (6.12)	3 (3.06)	23 (23.47)	311	98	3.17	1.28	Accepted
33	The need for preservice teachers should be established before preservice teachers are posted to cooperating schools	66 (67.35)	9 (9.18)	7 (7.14)	16 (16.33)	321	98	3.28	1.16	Accepted
34	Cooperating schools with conducive learning environments should be involved in TP exercise	65 (66.33)	18 (18.37)	1 (1.02)	14 (14.28)	330	98	3.37	1.06	Accepted
35	Preservice teachers should be properly guided on the use of instructional materials	71 (72.45)	4 (4.08)	3 (3.06)	20 (20.41)	322	98	3.29	1.23	Accepted
36	Preservice teachers should be given information about Supervisors' visit	39 (39.80)	1 (1.02)	5 (5.10)	53 (54.08)	222	98	2.27	1.45	Rejected

(Figures in parentheses are percentages)

Table 2 shows the expectation of the pre-service physics teachers as ways of ameliorating the challenges they encountered during TP exercise. 78.57% of the pre-service teachers strongly agreed and agreed that the duration of TP exercise should be extended, 66.33% of them strongly agreed and agreed that TP exercise manual should be made available to preservice teachers, 78.57% of them strongly agreed and agreed that preservice teachers should be involved in Micro teaching prior to TP exercise, 72.44% of them strongly agreed and agreed that Micro teaching laboratory should be made available in Higher institutions, 74.49% of them strongly agreed and agreed that Supervisor should be in subject area related to that of preservice teacher, 75.51% of them strongly agreed and agreed that Supervisors should be given frequent orientation on TP supervision, 75.51% of them strongly agreed and agreed that accommodation should be provided for preservice teachers on far posting, 73.47% of them strongly agreed and agreed that Preservice teachers on far posting should be financially supported, 76.53% of them strongly agreed and agreed that the need for preservice teachers should be established before preservice teachers are posted to Cooperating schools, 84.70% of them strongly agreed and agreed that Cooperating schools with conducive learning environments should be involved in TP exercise, 76.53% of them strongly agreed and agreed that Preservice teachers should be properly guided on the use of instructional materials while only 40.82%of them strongly agreed and agreed that Preservice teachers should be given information about Supervisors' visit. More than 50% of the Pre-service physics teachers strongly agreed and agreed that the items on Table 2 except item 36 are ways of ameliorating the challenges they encountered during TP exercise. Similarly, the mean value of each the items (except item

36) is also greater than 2.50 the criterion mean. Thus, in the view of the preservice physics teachers, all the items on Table 2 except item 36 are ways of ameliorating the challenges they encountered during teaching practice exercise.

Discussion

The study revealed that concerning the challenges encountered by physics preservice teachers during TP exercise, Institution-related challenges are: Institution's inconsistent calendar, short duration of TP exercise as well as lack proper orientation and micro teaching prior to TP exercise. These findings may be due to disruptions in academic calendar of public tertiary institutions due to the incessant industrial actions undertaken by staff of public tertiary institutions and the poor state of infrastructure and facilities in the institutions. These findings conform with the findings of Gujja, Naoreen, Saifi and Bajwa (2010); Okobia, Ogumogu, and Osagie (2013); Ekundayo, Alonge, Kolawole and Ekundayo (2014); Mutlu (2014) and Bichi and Musa (2017) who discovered that TP duration was short, there was lack of micro teaching and inadequate TP orientation for PTs before TP exercise. Azeem (2011) however in contrary discovered that PTs were given practical training on lesson planning before TP exercise.

Supervisor(Lecturer)-related challenges are: Pre-service physics teachers having supervisors in area of specialization different from theirs, hostile supervisors and sexual harassment from some supervisors. These findings conform with the findings of Chikwelu (n.d); Ozdemir and Yildirim (2012); Okobia, Ogumogu, and Osagie (2013) and Koross (2016) who discovered challenges of unfriendly supervisors, supervisors lacking in the duty of supervision, supervisors not evaluating PTs systematically and lack of feedback from some supervisors to enable PTs make corrections. However, the findings contradict the findings of Gujja, Naoreen, Saifi and Bajwa (2010) who discovered that supervision was well done, Azeem (2011) who discovered that supervisors pointed out PTs' weaknesses and regularly supervised lessons and Bichi and Musa (2017) who discovered that PTs got sufficient guidance from supervisors.

Cooperating School-related challenges are: Posting to far cooperating schools, posting to cooperating schools of lower level such as primary schools, accommodation problem, posting to cooperating schools which have unconducive learning environments, posting to cooperating schools with overpopulation of students, uncooperating attitude from students in schools, unwillingness of cooperating schools to integrate pre-service physics teachers in their timetable and rejection by cooperating schools. These findings conform with the findings of Chikwelu (n.d); Kiggundu and Nayimuli (2009); Gujja, Naoreen, Saifi and Bajwa (2010); Azeem (2011); Ozdemir and Yildirim (2012); Okobia, Ogumogu and Osagie (2013); Ekundayo, Alonge, Kolawole and Ekundayo (2014); Mutlu (2014); Koross (2016); Bichi and Musa (2017);Udogu, Enukora and Okonkwo (2018) who discovered the challenges of difficulty to get to school, inaccessibility of some schools, overcrowded classrooms, poor facilities for teaching and learning, non-availability of relevant textbooks, poor learning environment, rejection of PTs and unfriendly nature of cooperating teachers. The findings however contradict the findings of Okonkwo and Chikwelu (n.d) who discovered that PTs were involved in extra-curricular activities and Azeem (2011) who discovered that 65% of PTs taught classes of their choice. Similarly, the findings contradictthe findings of Okobia, Ogumogu, and Osagie (2013) who discovered that Cooperating teachers related well with PTs, there was no transportation challenge and PTs were well received by cooperating schools as well as Bichi and Musa (2017) who discovered that PTs got sufficient guidance from cooperating teachers.

Preservice teacher-related challenges are: Nervous feeling in class, inability to effectively communicate in class, challenge of class management, poor content knowledge of subject matter, little knowledge of pedagogical principles, shallow knowledge of lesson plan preparation, use ineffective instructional strategies, buying or construction of instructional materials, use of inadequate instructional materials. These findings conform with the findings of Chikwelu (n.d); Azeem (2011); Ozdemir and Yildirim (2012); Okobia, Ogumogu and Osagie (2013); Ekundayo, Alonge, Kolawole and Ekundayo (2014); Mutlu (2014) and Koross (2016) who the challenges of nervousness, inability to communicate well in class, classroom management problems, poor content knowledge of subject, in ability to improvise instructional materials and inability to apply pedagogical principles in real classroom situation. However, the findings are at variance with the findings of Okonkwo and Chikwelu (n.d) who discovered that PTs were able to utilize instructional materials properly, they were able to apply appropriate teaching skills and were able to write lesson notes. The findings also contradict the findings of Okobia, Ogumogu and Osagie (2013) who discovered that PTs had no difficulty in lesson note preparation and Ekundayo, Alonge, Kolawole and Ekundayo (2014) who discovered that PTs were able to instill discipline in students, have good knowledge of lesson note preparation and are able to make good use of instructional materials.

Furthermore, the study revealed that to ameliorate the challenges encountered by preservice physics teachers during teaching practice exercise, the duration of TP exercise should be extended, TP exercise manual should be made available to preservice physics teachers and they should be involved in Micro teaching prior to TP exercise. Furthermore, Micro teaching laboratory should be made available in the institutions, supervisor should be in the subject area of preservice physics teachers and supervisors should be given frequent orientation on TP supervision. The preservice physics teachers desire that accommodation should be provided for those on far posting and preservice teachers on far posting should be financially supported. The need for preservice teachers should be established before preservice teachers are posted to cooperating schools, cooperating schools with conducive learning environments should be involved in TP exercise and Preservice teachers should be properly guided on the use of instructional materials. However, preservice physics teachers were not of the view that they should be given information about their supervisors' visit.

These findings conform with the findings of Udogu, Enukora and Okonkwo (2018) who found that PTs wants cooperating schools to provide accommodation for them, give PTs enough time on the school's time table, provide PTs with instructional materials, should not give PTs excess workload, principals should monitor the relationship between PTs and students in cooperating schools, principals should monitor the relationship between PTs and cooperating teachers while cooperating teachers should provide adequate guidance for PTs. The finding that supervisors should be in Physics preservice teachers' area of specialization may be because as some of the PTs expressed, some of their supervisors are not in their area of specialization and so not conversant with physics concepts and as such could not properly correct and guide them. Similarly, the finding that supervisors should be given frequent orientation may be because as some of the PTs also expressed, different supervisors give different instructions that seem contradictory which end up confusing the PTs. This majorly occurs in some institutions where more than one supervisor is assigned to supervise one PT and this is worsened if one or both of the supervisors are not in their area of specialization.

Implication of findings

This study has revealed that TP exercise has been a challenging one for Pre-service Physics teachers. This study has also revealed the expectations of the Pre-service Physics teachers

as ways of ameliorating the challenges they encountered during TP exercise. If these solutions as expressed by Pre-service Physics teachers are implemented by all stakeholders involved, there will be a better TP experience for the Pre-service Physics teachers which will culminate in a wholistic teacher training and result in an effective physics teaching and learning process.

Conclusion

Teaching Practice exercise is a crucial component in the training of Physics teachers. This is because it is the opportunity for Pre-service Physics teachers to practicalize the pedagogical principles they have learnt to impact physics knowledge. TP exercise has however been a challenging period for Pre-service Physics teachers. Institutions who are saddled with the responsibility of training physics teachers should therefore step up their game, adequately prepare them for the exercise and see to their welfare during the exercise in other to make the exercise a rewarding one for them.

Recommendations

Consequent on the findings of this study, the following recommendations were made:

(i) Enough time should be allotted to TP exercise, so that pre-service physics teachers can have enough time for hands-on experience of teaching.
(ii) Institutions should properly prepare pre-service physics teachers by conducting micro teaching and proper orientations for them prior to TP exercise.
(iii) Supervisors should be encouraged to be friendly and approachable to pre-service physics teachers.
(iv) Supervisors in area of specialization of pre-service physics teachers should be posted to supervise them.
(v) Pre-service physics teachers should be allowed to choose cooperating schools that are close to where they live for TP exercise so as to take care of accommodation and transportation issues.
(vi) Cooperating schools which have conducive learning environments as well as adequate instructional materials/facilities should be involved in TP exercise.
(vii) Cooperating schools and who are willing to accept and fully integrate pre-service physics teachers in their schools should be involved in TP exercise.
(viii) Pre-service physics teachers should be helped and encouraged to develop confidence, acquire sound content knowledge of subject matter and pedagogical principles.
(ix) Pre-service physics teachers should be given sound training on lesson plan preparation as well as the use of effective instructional strategies and adequate instructional materials.

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