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PERCEPTION OF OUT-OF-FIELD SECONDARY SCHOOL BIOLOGY TEACHERS' ANXIETY ON CONTENT MASTERY IN NIGER STATE

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Abstract
This study examined the perception of out-of-field secondary school biology teachers' anxiety on content mastery in Niger state. The research design that was adopted for this study is descriptive survey. Three research questions and two null hypotheses guided the study. The population of this study was 666 out-of-field Biology teachers' in 543 public and private Senior Secondary Schools drawn from the seven educational zones in Niger State. The sample size for this study was 501 out-of-field Biology teachers' (private school= 246 & public school =255). Multi-stage sampling technique was adopted for this study; firstly, stratified sampling technique was used for selecting 226 senior secondary schools from 7 educational zones while simple random sampling technique was adopted in picking respondents from the schools. A researcher developed-questionnaire named Out-of-field Secondary School Biology Teachers' Anxiety on Content Mastery Questionnaire (OFBIOTACMQ) validated by two experts in science education and one psychologist was used to elicit responses from participants. The questionnaire had two sections (A and B). Section A was designed to collect demographic data of respondents, while section B had 15 content mastery statements using anxiety constructs. The reliability coefficient of the instrument was 0.85 through Cronbach Alpha formula. Data collected were analyzed using descriptive statistics such as Percentages (%), bar charts, Mean and Standard Deviation were used in answering the research questions raised while inferential statistics such as ANOVA and Scheffes post Hoc was used to analyze data for hypotheses testing at 0.05 level of significance. The findings revealed that the level of anxiety of out-of-field Biology teachers was within the mean range of highly anxious. There was significant difference between the Mean scores of out-of-field male and female Biology teachers at 0.05 level of significance. There was a significant difference in the out-of-field Biology teachers' anxiety on Content Mastery based on years of teaching experience. The study recommends among others that teaching in senior secondary schools should be 'strictly' professionalized in all respects and treated as such to remove quackery in its field of practice to ensure efficiency and efficacy.

Keywords: Anxiety, Biology, Out-of-field biology teachers, Content Mastery

Introduction

Anxiety has been a popular area of research for many years for psychologists and educators. Little is known about the anxieties out-of-field teachers experience during the actual teaching of biology in the classrooms. In line with this, individuals who are anxious experience intrusive worries that disrupt performance.In Niger State, there is a shortage of suitably qualified science and mathematics teachers. This shortage may be contributing to the low number of teachers in senior Secondary Schools. The result of this shortage of qualified teachers in Secondary Schools may have required teachers to teach outside their specialty areas, which is known as out-of-field teaching (Adeyemi, 2011;Hobbs,2012; Du Plessis, 2015; .Out-of-Field (OOF) teaching is a phrase referring to teaching in a subject area where the teacher does not possess the prerequisite academic and professional qualification, or the teacher has neither a major nor a minor tertiary teaching qualification. Ingersoll in ; and explained that, out-of-field teaching entails teachers teaching subjects for which they have little training or no certification

in or to teach subjects /year-levels outside their field of qualification or expertise. If a graduate of Chemistry Education is assigned to teach Biology or Physics at senior Secondary School, then such a teacher is regarded as OOF teacher. To a certain level, no school is spared in this menace, from public to private, from religions to secular schools and from urban to rural schools. Survey of teaching force of many nations has shown that, a very high percentage of teachers are assigned to teach out of their field of specializations (Sambe, 2015; Subair & Talabi, 2015).

This practice appears in schools as a result of managerial decision by the principals or proprietors, governmental recruitment, mis-assignment and shortage of qualified teachers. This problem is one of the major unrecognized administrative problems in our school system. Hence, Umoinyang *et al*. (2011) condemned this practice and described it as a 'hydra-headed monster' affecting teaching profession in Niger State and Nigeria at large. This comment only reflects their concerns for 'Out-of-field' teaching which has negatively affected the images and output of our school system. Several studies have illustrated that out-of-field teaching affects teachers' self-esteem, teachers' sense of identity and overall well-being (McConney & Price, 2009; Nixon & luft, 2015; Du Plessis, 2015). It equally affects the students who are the end receivers. As this practice contribute to decrease in student's achievement. This practice negatively impacts instruction, and adds to teachers' stress and burnout which affects their competence in the classroom (McConney & Price, 2009; Du Plessis, 2015). OOF, teachers who lack the expertise to teach in a content area experiences a "boundary-crossing event".

Literature on boundary-crossing suggested that crossing boundaries are often challenging because it requires people to "enter into territory in which they are unfamiliar and, to some significant extent unqualified to act" (Suchman, 2003). They encounter challenges and difficulties while developing the content knowledge needed for teaching, especially difficult topics.

By virtue of this practice, out-of-field teachers are faced with huge knowledge gaps in the mastery of content and in pedagogy (skills delivery) which make them professionally incompetent and as such impede students' achievement. Therefore, inadequate knowledge of the teacher in the subject matter, alongside poor preparation coupled with feelings of inadequacy may manifest in form of anxiety. The consequence of this anxiety may cause the out-of-field biology teachers to teach biology in a perfunctory or careless manner.

Anxiety is an affective construct which is defined as "something felt by Freud, it is a kind of unpleasant emotional state or condition that includes feelings of uneasiness, worry and apprehension. Jenaabadi, Nastiezaie & Safarzaie (2016) attest that anxiety is a group of physical, behavioural and mental changes occurring in response to threat which results in ineffectiveness, wearing out, lack of energy and power, and an exhaustion of the inner resources of an individual due to unsatisfied needs. Teaching anxiety is the association between anxiousness and teaching which the out-of-field Biology teacher experiences during instruction from preparation to execution of classroom activities.

Anxiety is considered on a continuum from normal levels which can be helpful (facilitating), to excessive anxiety which can be detrimental (debilitating) and may negatively impede performance. George, Abisola, Sakirudeen and Sunday (2017) ranked anxiety from mild to moderate, to severe level and lastly to panic level of anxiety. Morteza & Morteza (2013) in a study of teachers' anxiety among practicing EFL teachers in Iran reported that EFL teachers, experience high rate of anxiety (57.62%) as a result of language proficiency. In another related study by Beckley (2011) on the wellbeing of New Zealand teachers, the relationship

between health, stress, job demands and teacher efficacy, asserted that over 39% of teachers considered teaching to be either very stressful or extremely stressful. This impliesthat most New Zealand teachers experience stress in their classroom instruction. Conversely, Abdul Hadi *et al.* (2009) examined the prevalence and factors associated with stress among secondary school teachers in Kota Bharu, Kelantan, Malaysia, and reported that the majority of teachers had a mild level of anxiety/stress (17.4%) towards the triggers of anxiety on content mastery.

Content Mastery (CM) as a variable is a phrase that describes the teacher's knowledge of a subject specific area which is obtained through formal training at the University or Colleges of Education. Content knowledge is foundational to effective teaching. Evens, Elen and Depaepe (2015) affirmed that Content Knowledge is the knowledge of subject or discipline per se and included substantive structures and syntactic structures. Olugbenga (2011) concurred that content mastery includes an understanding of the organization of content and which concepts or ideas are most central and relevant to a subject matter. Literature on teachers' knowledge posits that a deeper and coherent knowledge can be used for identifying relevant and accurate examples of concepts. However, nobody can teach what he does not understand, and as such, there is high correlation between what teachers know and what they teach (Ijeh, 2013). Njeroge (2015) assessed the prevalence of anxiety/stress and its levels among teachers in mixed day public primary schools in Nairobi county and revealed a significantly high level of stress of about 88.9% with a stress mean score of 3.36.

The evidence gained from different studies on Content Mastery is contradictory. Several studies show a positive relationship between teachers' preparation in the subject matter they later teach and anxiety, while others have less unequivocal results (Sharma, 2008; Lampadan, 2014; Evens, Elen & Depaepe, 2015).Most researchers have found that anxiety declines linearly as a function of mastery of the subject (Haciomeroglu, 2014; Christopher, *et al.*, 2018; Morteza & Morteza, 2013). Others have reported no statistically significant differences between levels of anxiety and content mastery of pre-service mathematics teachers. Additionally some previous studies also found that younger and newly employed teachers experienced higher levels of anxiety than older and experienced teachers (Du plessis, 2015; Nwimo, 2004) while other studies indicated that older and experienced teacher's exhibits higher anxiety than newly employed teachers.

Nwimo, and Onwunaka (2015)studied thestress among Secondary School Teachers in Ebonyi State, Nigeria and showed that the secondary school teachers had a high level of stress and the difference in the level of stress reported by male and female teachers was significant with male teachers reporting higher level of stress than female teachers. The study adopted the cross-sectional survey design. Using a sample of 660 (male 259, female 401) teachers were randomly drawn from 33 secondary schools in Ebonyi State. The secondary schools were selected from two (Abakaliki and Afikpo) out of three education zones in Ebonyi State. In each school, 20 teachers were randomly selected using systematic random sampling technique. A self-developed instrument with a reliability coefficient of r = 0.72 was used data collection. The researchers personally collected the data which were analysed using mean, standard deviation, t-test, Pearson's correlation and Stepwise Multiple Regression. 614 (male 232, female 382) of the questionnaire, representing about 93% return rate, were used for analysis. Furthermore, Nisbet (2015) investigated the teaching experiences of six elementary pre-service teachers (EPTs), three with high mathematics anxiety and three with low mathematics anxiety, during their student teaching semester. The study revealed that EPTs exhibited high anxiety level among the teachers. Those with high mathematics anxiety were weaker with respect to content knowledge and pedagogical content knowledge. Sammephet and Wanphet (2013) found out that the pre-service teachers had low anxiety level when confronted with

complexity in implementing lesson plan. In a related study, Nwimo (2004) examined the health status, anxiety and stress of Secondary School teachers in Enugu State. The study revealed that male teachers had lower anxiety level than female teachers, no significant relationship was found in the mean anxiety of teachers when years of work experience was considered. Morteza and Morteza (2014) in a study of teachers' anxiety among practicing EFL teachers in Iran reported that EFL teachers, experience high rate of anxiety (57.62%) as a result of language proficiency. In addition, there was a weak and negative relationship between years of experience and the amount of tension experienced by these teachers. There was significant difference between gender and occupational anxiety. Aydin and Aynur (2013) investigated the anxiety level of novice and experienced EFL a case study of Aydin University revealed that there was no significant relationship between gender and anxiety and the level of anxiety experienced by teachers was lower.

Gender as a variable refers to masculinity and feminity found in an individual. In education, gender inequality has remained an issue of concern and interest to teachers, school administrators and stakeholders in the education sector. Gender differences have become critical issues of concern around the world most especially to educators and researchers. Awodun, Oni and Oyeniyi (2015) reported that there is no country in the world that has reached equality state between women and men in different critical areas such as in economic participation or in education. Some researchers believe that people react differently to anxiety based on their gender when put under same experiences, expectation and similar circumstance. This is so because they perceive the threatening situation differently as a result of their biological, psychological and emotional differences.

On the influence of anxiety on gender, findings from studies appeared to be inconclusive. Some previous studies have reported higher levels of anxiety in males than females. Sagir (2012) reported that there is a correlation between science anxiety and gender differences in teaching as females are more anxious than their male counterparts. A perusal of empirical educational literature reveals that there is significant noticeable difference in the proportion of male to female science teachers in the country. However, this phenomenon has been disturbing despite the clamour for gender equality treatment and advancement in teaching of science. Aftab (2016) stated that males display more occupational stress/ anxiety towards teaching than the females. Desouky and Allam (2017) reported gender difference in anxiety and depression in their study, as female teachers showed a higher rate of very severe anxiety and stress compared to their male counterpart. On the contrary, Uzoma (2019) stated that males and females secondary school teachers' level of stress/ anxiety is not significantly different. In the same vein, Akinsola (2014) reported that there was no significant difference between male and female pre-service teachers teaching anxiety in mathematics. Similarly, in studies conducted on pre- service teachers by Yayli and Gungor (2012) and Aynur and Aydin (2013) in Turkey found that there was no significant difference between anxiety of male and female English teacher as a foreign language (EFL) instructors towards teaching. Studies have indicated that teacher's experience irrespective of gender exerts a great influence on students' achievement.

The term teacher's experience denotes the number of years a teacher has been practicing the art of teaching. Experience, they say, is the best teacher. Teachers' experience is a unique quality for teaching effectiveness. Experienced teachers,described as teachers who spent above 10 years are great asset to novice or inexperienced teachers who spent 0-5years. They need advice, encouragement and continuous guidance. Okey (2012) stated that experience is directly related to teachers' ability to plan lessons, address divergent student responses, and reflect on their teaching effectiveness and their ability to stimulate student inquiry. Ameen,

Guffey and Jackson (2002) and Clayford (2010) commented that experience improves teaching skills while students learn better at the hand of teachers who have taught them continuously over a period of years. According to them the magnitude of the effect of teacher experience varies depending on the teacher's level of education and the subject area.

Research on teacher experience is sparse and the results are inconclusive, as there is a wide range of findings on the relationship between years of teaching experience and teachers' anxiety. Past studies on the effects of teacher experience showed that experience had statistical significant effect on teachers' anxiety. Clayford (2010) revealed that teachers who have been in the teaching profession for many years are less prone to high levels of burnout. In addition to this, younger trained educators entering the teaching field displayed the highest levels of emotional exhaustion and anxiety. In the same vein, it accedes with the finding of Aslrasouli, Saadat and Vahid (2014) that concluded that younger and less experienced teachers felt greater anxiety On the contrary, Numaya (2013) submitted that anxiety and years of teaching experience had no significant difference while Nwimo (2004) also found no significant difference when age, gender and work experience were considered. Some studies also revealed that experienced teachers with longer years of service experience more anxiety than less experienced ones as a result of work over load and managerial responsibilities.

Despite the importance of teachers on students' academic achievement, results of students in Biology and other related science subjects in terminal and external examinations (SSCE) such as WAEC and NECO in Niger state has fallen to an alarming level. Literature posits several reason such as lack of content knowledge, lack of teaching methodology etc as responsible for the students' poor performance in Biology. Little or no work is mentioned on the anxiety of teachers hired to teach as a result of shortage of qualified teachers may be a major cause of students' failure in biology. Anxious teachers may unintentionally transfer anxiety to students in their classroom. The consequences of this practice may have resulted in raised anxiety or stress levels which have shown up in a spectrum of behaviors and students achievement. This problem is widespread and continuing. This study is one of such endeavours, as it tends to bring to light the concept of OOF teachers' anxiety as a major cause of students' underachievement in Biology in Niger state

Research Questions

The following research questions were raised to guide the study:

(i) What is the level of anxiety of out-of-field Biology teachers on lack of Content Mastery?

(ii) What is the Meandifference in out-of-field Biology teachers' anxiety on Content Mastery based on gender?

(iii) What is the Meandifference of out- of - field Biology teachers' anxiety on Content Mastery based on their years of teaching experience?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 significant level:

Ho_1 There is no significant difference in out-of-field Biology teachers' anxiety on Content Mastery based on gender

Ho_2 There is no significant difference in out-of-field Biology teacher anxiety on Content Mastery based on their years of teaching experiences

Methodology

The research design that was adopted for this study is descriptive survey. Descriptive survey was suitable for this study because it allowed group of people to be studied by collecting and analyzing data from a group of few people to be considered as representative of the entire

group. According to Robert and Ogunniran (2015),survey design deals with the gathering of data, and its characteristics and describing them in a systematic manner. The population of the study was 666 out-of-field Biology teachers' in 543 public and private senior Secondary Schools were drawn from seven educational zones in Niger State, Nigeria. Multi-stage sampling technique was adopted in this research, first, stratified sampling technique was used in selecting 226 senior secondary schools from 7 educational zones while simple random sampling technique was adopted in picking 501 (private = 246 & public =255) out-of-field Biology teachers' selected from 7 educational zones in Niger State. A total of 3 research questions and 2 null hypotheses guided the study. A researcher developed-questionnaire named Out-of-field Secondary School Biology Teachers' Anxiety on Content Mastery Questionnaire (OFBIOTACMQ) validated by 2 experts in science education and one psychologist was used to elicit responses from participants. The questionnaire had two sections (A and B). Section A was designed to collect demographic data from respondents, while section Bhad 15 content mastery statements using anxiety constructs. A five point likert scale response option of Very High Anxious (VHA), High Anxious (HA), Moderately Anxious (MA), Low Anxious (LA) and Very Low Anxious (VLA) was used based on experts suggestions, five items of the questionnaire were restructured.

In order to check for the reliability of Out-of-field Secondary School Biology Teachers' Anxiety on Content Mastery Questionnaire, 30 Out-of-Field Biology teachers were randomly selected from the schools within the population but not selected for the main study. The reliability coefficient of the instrument was 0.85 using Cronbach Alpha formular. Hence, the questionnaire is within an accepted threshold, and is considered reliable. The questionnaires were administered personally using the face-to-face method of administration to the respondents with the help of one research assistant who was familiar with the area of the study. The questionnaires were retrieved immediately after completion by the respondents. Six weeks was used for data collection and all questionnaires were retrieved without any questionnaire mortality.

Data collected were analyzed using descriptive statistics. Barcharts, Mean and Standard Deviation was used in answering the research questions raised. The decision rule was based on the average of a five-point Likert scale which is 3.0. Therefore, a Mean response of less than 3.0 is considered low anxiety, while a Mean of 3.0 and above is considered high anxiety. Inferential statistics such as ANOVA and Scheffes post Hoc was used to analyze data for hypotheses testing at 0.05 level of significance. The analysis was carried out with the aid of IBM SPSS version 23.

Results

Research question one: What is the level of anxiety of out-of-field Biology teachers on lack of Content Mastery?

Table 1: The Mean and Standard Deviation of out-of-field Biology teachers' Anxiety on Content Mastery

Items	N	VHA (%)	HA (%)	MA (%)	LA (%)	VLA (%)	Mean	Std. Deviation
How anxious are you, when you cannot state clearly the objectives of teaching a particular topic in biology?	501	151 (30.1)	145 (28.9)	80 (16.0)	63 (12.6)	62 (12.4)	3.52	1.360
How stressed-out are you, when planning and writing lesson notes in biology?	501	85 (17.05)	138 (27.5)	115(23.0)	68 (13.6)	95(19.0)	3.10	1.357

How frustrated are you, when you are unable to organize taxonomies of learning in biology?	501	113(22.6)	131(26.1)	129(25.7)	70 (14.0)	58 (11.6)	3.34	1.286
How restless are you, when you cannot explain certain difficult topics to the students?	501	123 (24.6)	150(29.9)	97 (19.4)	73 (14.6)	58 (11.6)	3.41	1.313
How frightened are you, when you teach biology in the class, and you lack mastery of the content?	501	140 (27.9)	128 (25.5)	104 (20.8)	77 (15.4)	52 (10.4)	3.45	1.319
How often are you nervous when you cannot complete the syllabus successfully and adequately?	501	134 (26.7)	124 (24.8)	125 (25.0)	72 (14.4)	46 (9.2)	3.46	1.275
How irritated are you, when you are unable to give reasons for getting wrong result in a practical lessons	501	132 (26.3)	154 (30.7)	105 (21.0)	59 (11.8)	51 (10.2)	3.51	1.275
How depressed are you, when you cannot explain the diagrammatic representation of various concepts in biology?	501	91 (18.2)	166 (33.1)	116 (23.2)	72 (14.4)	56 (11.2)	3.33	1.243
How edgy do you feel when there is no smooth communication between you and the students during biology teaching?	501	129 (25.7)	133 (26.5)	126 (25.1)	63 (12.6)	50 (10.0)	3.46	1.271
To what extent are you jittery, when you are unable to build explanations in response to students' questions?	501	115 (23.0)	141 (28.1)	121 (24.2)	80 (16.0)	44 (8.8)	3.41	1.245
How apprehensive are you, when you cannot evaluate students' level of conceptual knowledge after teaching a topic in biology?	501	97 (19.4)	167 (33.3)	125 (25.0)	69 (13.8)	43 (8.6)	3.41	1.193
How worried are you, when you cannot detect students' difficulties and misconceptions after teaching biology?	501	132 (26.3)	154 (30.7)	117 (23.4)	48 (9.8)	50 (10.0)	3.54	1.253
To what extent are you exhausted when you depend majorly on textbooks to proffer explanations to biological concepts?	501	102 (20.4)	143 (28.5)	128 (25.5)	72 (14.4)	56 (11.2)	3.33	1.260
How often are you scared when you think about the topic you are going to teach in biology and you are inadequately prepared	501	82 (16.4)	129 (25.7)	140 (27.9)	63 (12.6)	87 (17.4)	3.11	1.313
To what extent are you restless when you cannot develop your own ideas in preparing lessons?	501	96 (19.2)	120 (24.45)	122 (24.4)	76 (15.2)	87 (17.4)	3.12	1.357
Total Average	**501**	**(22.92)**	**(28.2$)**	**(23.3)**	**(13.68)**	**(11.9)**	**3.36**	**1.288**

KEY:
VHA: Very Highly Anxious, HA: Highly Anxious, MA: Moderately Anxious, LA: Low Anxious, VLA: Very Low Anxious

Table 1 shows the Mean and Standard Deviation of out-of-field Biology teachers' Anxiety on Content Mastery. The findings indicated that in all responses on the items, the Mean of the respondents ranges from 3.10 - 3.54 while the grand mean was 3.36. Indicating that, the respondents in this population agree that out-of-field Biology teachers have high Anxiety on Content Mastery given the grand Mean of 3.36. The standard deviation of the respondents is between 1.19 – 1.36, indicating that the Means in the data set are close to the group Mean of the data set.

The result on Table 1 is further highlighted in a graphical form and this results is presented in Figure 1

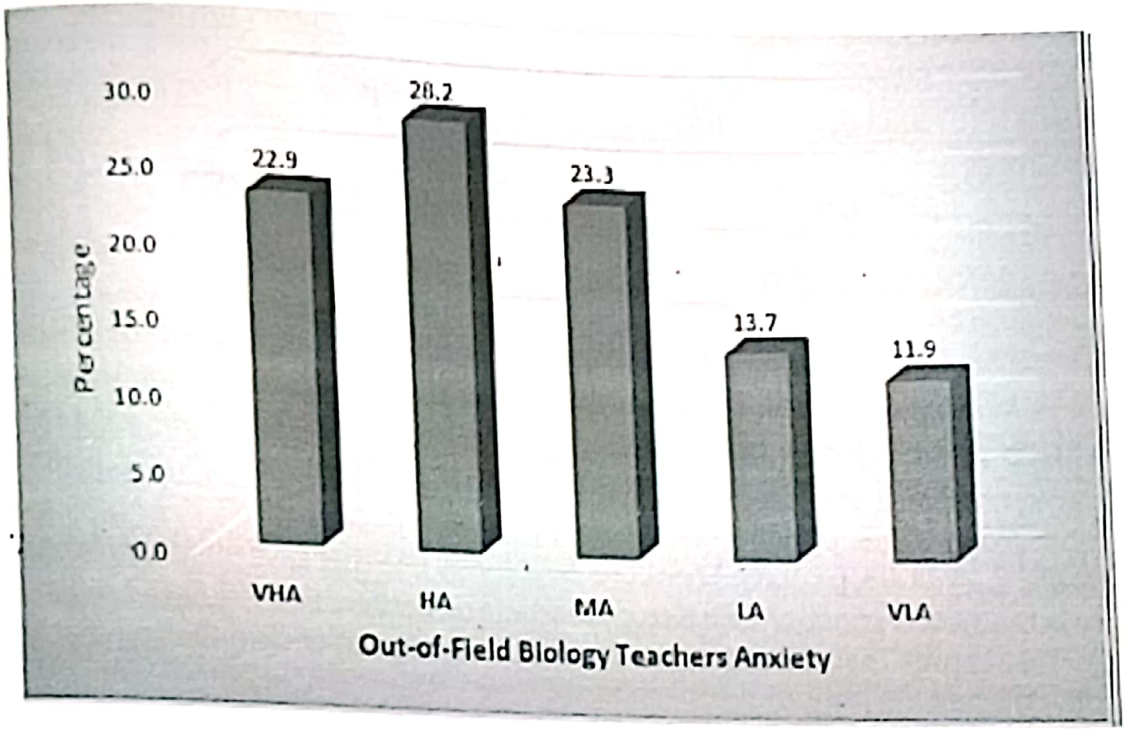

Figure 1: Bar chart showing percentage of the anxiety of out-of-field biology teachers content mastery

Figure 1 illustrates total percentage of the anxiety of out-of-field biology teachers content mastery. The result shows that 28.2%, 23.3% and 22.9 of the respondents in the population agree that out-of-field Biology teachers have high, moderate and very high anxiety towards content mastery respectively. On the contrary, 13.7% and 11.9% agree that out-of-field Biology teachers have low and very low anxiety towards content mastery respectively.

Research Question Two: What is the Mean difference in out-of-field Biology teachers' anxiety on Content Mastery based on gender?

Table 2a: Mean and Standard Deviation of Anxiety of Out-of-Field Biology Teachers due to Lack of CM Based on Gender

School Type	No of sample	M	SD	Mean diff
Male	337	49.18	14.19	4.03
Female	164	53.21	10.23	

Table 2a shows the mean and standard deviation of anxiety of out-of-field Biology teachers due to lack of Content Mastery based on gender. The result revealed the Mean and Standard Deviation responses of male teachers are 49.18and14.19 respectively. Similarly, the Mean and Standard Deviation responses of female teachers are53.21 and10.23 respectively and the Mean difference was 4.03.. This shows that female out-of-field Biology teachers had the higher anxiety Mean than the male out-of-field biology teachers due to lack of CM.

Hypothesis HO_1: There is no significant difference in out-of-field Biology teachers anxiety on Content Mastery based on gender.

Table 2b: ANOVA result of Out-of-Field Biology Teachers Anxiety on Content Mastery Based on Gender

	Sumof Squares	df	Mean Square	F-value	P-value	Remark
Between Groups	1877.719	1	1877.719	11.084	.001	Significant
Within Groups	84535.447	499	169.410			
Total	86413.166	500				

Table 2b presents the ANOVA comparison of the Mean scores of anxiety of out-of-field Biology teachers on content mastery based on gender. From the result, there was significant difference between the Mean scores of out-of-field male and female Biology teachers at 0.05 level of significance$F_{(1, 499)} = 11.08$; $p < 0.05$. Therefore, hypothesis one that says there is no significant difference in the anxiety of out-of-field Biology teachers on Content Mastery based on gender is rejected. This implies that the anxiety of male and female out-of-field Biology teachers is significantly different.

Research Question Three: What is the Meandifference of out- of - field Biology teachers' anxiety on Content Mastery based on their years of teaching experience?

Table 3a: Mean and standard Deviation of out-of-field Biology teacher anxiety on Conyent Mastery based on their years of teaching experiences

Years of Exp.	No of sample	Mean Score	Standard Deviation
0-5	188	53.61	9.22
6-10	191	51.37	12.36
10 Above	122	44.34	17.00

Table 3b: Mean Difference of out-of-field Biology Teacher anxiety on Content Mastery based on their Years of Teaching Experience

Years of Teaching Exp.	Mean difference
Less than 5 years	2.24
6-10 years	9.27
10 years and above	7.03

Table 3a and 3b show the Mean and Standard Deviation of out-of-field Biology teacher anxiety on Content Mastery based on their years of teaching experiences. The result revealed that the Mean and Standard Deviation of anxiety of out-of-field Biology teacher Content Mastery based on their years of teaching experiences as follows; 0-5 years $\bar{X}$ 53.61, SD = 9.22, and mean difference 2.24. Similarly, the Mean and Standard Deviation of 6-10 years $\bar{X}$ = 51.37, SD = 12.36, and Mean difference 9.27. Furthermore, Mean and Standard Deviation of above 10 years $\bar{X}$ = 44.34, SD = 17.00, and Mean difference 7.03 respectively.

Hypothesis Ho_2: There is no significant difference in out-of-field Biology teacher anxiety on Content Mastery based on their years of teaching experiences

Table 4a: ANOVA result of mean Scores of Out-of-Field Biology Teachers Anxiety on Content Mastery Based on years of experience

Groups	Sum of Squares	df	Mean Square	F-value	P-value
Between groups	6590.487	2	3290.243	20.496	0.00
Within groups	79942.759	498	160.528		
Total	86523.246	500			

Table 4a shows the ANOVA statistics analysis of out-of-field biology teachers' anxiety on Content Mastery based on years of teaching experience. From the table, the calculated F-value $F_{(2,498)} = 20.496$; $p < 0.05$). This indicates that there is significant difference in the out-of-field biology teachers anxiety on Content Mastery based on years of teaching experience. Therefore, HO_1 that say there is no significant in the anxiety of out-of-field biology teachers on CM based on years of teaching experience is rejected.

Since, the ANOVA analysis revealed significant differences, there is need to carry out further analysis in order to identify where the significant differences are. Hence the need to carry out Scheffe Post Hoc Multiple Comparison test. Table 24b shows the result of the Multiple Comparison test.

Table 4b: Scheffe Post Hoc Multiple Comparison analysis result of Out-Of-Field Biology Teachers Anxiety on Content Mastery Based on Year of Experience

Yrs. of Exp. (I)	Yrs. of Exp. (J)	Mean Difference (I-J)	Sig. Level	Remark
0-5	6-10	2.240	0.229	Not Significant
	Above 10	9.262*	0.000	Significant
6-10	Above 10	7.022*	0.000	Significant

From the table 4b, the Mean difference between the Mean anxiety of out-of-field biology teachers that had 0-5 years and 6-10 years teaching experience is not statistical significant. However, the Mean difference between the anxiety of out-of-field biology teachers that had 0-5 years and those that had above 10 years of teaching experience is statistically significant in favour of those with 0-5 years of teaching experience. Similarly, the Mean difference between the anxiety of out-of field biology teachers that had 6-10 years and those that had above 10 years teaching experience is statistically significant in favour of those with 6-10years of teaching experience.

Discussion of Findings

This sub-heading dealt with the discussion of the major findings of this study. The discussion is done based on results of the research questions and hypotheses testing.

The finding on research question one that investigated on the level of anxiety of out-of-field Biology teachers on Content Knowledge showed that the level of anxiety of out-of-field Biology teachers was within the range of highly anxious. This implies that lack of Content Mastery had influence on the level of anxiety of out-of-field Biology teachers. The out-of-field Biology teachers experienced high level of anxiety when they cannot state clearly the objectives of teaching a particular topic in Biology; when they have challenges in planning and writing lesson, unable to organize taxonomies of learning in Biology, unable to explain difficult topics to the students, cannot complete syllabus successfully and adequately, unable to give reasons for getting wrong results in practical lessons and when they cannot detect students' difficulties

and misconceptions in Biology. This finding corresponds with the findings of Nisbet (2015) that investigated the teaching experiences of six elementary pre-service teachers (EPTs) and found that EPTs had high mathematics anxiety. Similarly, the finding agrees with the findings of Nwimo, and Onwunaka (2015)who studied the stress among Secondary School Teachers in Ebonyi State, Nigeria and submitted that the secondary school teachers in Ebonyi had a high level of stress. Also, the finding supports the study of Morteza and Morteza (2013) and Mutodi and Ngirande (2014) who found high rate of anxiety among EFL teachers in Iran and among female students' teachers in tertiary institution in South Africa. However, the finding was in contrast to the finding of Sammephet and Wanphet (2013) that studied the pre-service teachers' anxiety and anxiety management in Thailand and found out that the pre-service teachers experience moderate level of anxiety when confronted with complexity in implementing lesson plan. Similarly, Haciomeroglu (2014) revealed that majority of teachers had a mild level of stress (17.4%) towards the triggers of anxiety such as knowing the content and its objectives. The finding can be attributed to OOF Biology teachers' lack of instructional expertise or knowledge of pedagogy to effectively teach the students'. Hence, the results of high anxiety.

Result of hypothesis one revealed that there was significant difference between the out-of-field Biology teachers' anxiety on Content Mastery based on gender. This study is in line with the findings of Desouky and Allam (2017) that reported gender difference in anxiety and depression in their study, as female teachers showed a higher rate of very severe anxiety and stress compared to their males' counterpart. Similarly, the finding is in agreement with Aftab (2016) who stated that females display more occupational stress/ anxiety towards teaching than the males.On the contrary, the study is not in line with the findings of Aynur and Aydin (2013) that investigated the anxiety level of novice and experienced EFL a case study of Aydin University and revealed that there was no significant relationship between gender, and anxiety level of experienced teachers was lower.

Result of hypothesis two revealed that there is significant difference in the anxiety of out-of-field biology teachers Content Mastery based on years of teaching experience. This study supports the findings of Ameen, Guffey and Jackson (2010) who investigated accounting professors anxiety in the United State, and found that the highest levels of stress was experienced by recent entrants to the profession (usually younger teachers).Similarly, this study agrees with the findings of Aslrasouli, Saadat and Vahid (2014) that concluded that younger and less experienced teachers felt greater anxiety. Nevertheless, this finding opposes the study of Desouky and Allam (2017) that carried out a study on occupational stress (OS) among teachers predisposed to depression among Egyptian teachers and found that teachers with higher teaching experience and higher qualifications exhibited higher level of anxiety/ stress. The finding can be attributed to the fact that these teachers have not yet acquired the expertise required to cope with the job.

Conclusion and Recommendations

The study has been able to find out that out-of-field teachers' in Niger State shows a high level of anxiety. To have high population suffering from anxiety shows the severity of the problem. The anxiety/ tensions and pressures in the OOF teacher towards teaching may inhibit sustainable confidence in the delivery of biology and any other science subjects instruction thereby making them slothful and less effective. This may eventually affect the students' performance in the subject. As teachers' may transfer their anxiety to their students'. Female out-of-field biology teachers are more anxious than their male counterpart. It is therefore recommended that:

Teaching in senior secondary schools in Niger State should be strictly professionalized in all respect to remove quackery in its field of practice.

The Planning, Research and Statistic (PRS) Department of Niger State Ministry of Education could be saddled with the responsibility of designing brochure primarily for use by newly hired and employed teachers. The brochure could offer several strategies to overcome sources of anxiety.

Teachers without relevant qualification should be encouraged by their Heads of Department (HOD) to go for further studies to update, upgrade and up skill themselves academically so as to overcome the challenge of intellectual deficiency that could generate anxiety and to improve their pedagogy. It will help to build their confidence and reduce their anxiety.

It is recommended that Niger State government and relevant stakeholders in the state should regularly organize seminars, workshops and training programmes to foster teachers' mastery of the subject matter and on emotional intelligence, mental health and well-being for teacher.

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