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**INTERPLAY OF TEACHERS' CHARACTERISTICS AND THEIR
TEACHING-LEARNING ACTIVITIES IN SECONDARY SCHOOLS**

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INTERPLAY OF TEACHERS' CHARACTERISTICS AND THEIR TEACHING-LEARNING ACTIVITIES IN SECONDARY SCHOOLS

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Abstract

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Teachers are recognized as the propelling force in the educational process and an indispensable human resource among other educational resources. The teachers' characteristics such as gender, qualifications and years of experience were examined to establish the interplay of the characteristics in teaching-learning activities. The quantitative research method of survey design was adopted for this study. The data collected were analysed using descriptive and inferential statistics. It was revealed that gender, years of experience, an interaction effect of gender and years of experience, three-way interaction effect among gender, qualification and years of experience have a statistically significant effect on secondary school teachers' teaching-learning activities. While qualification, the interaction effect of gender and qualification, and the interaction effect of qualifications and years of experience do not have a statistically significant effect on secondary school teachers' teaching-learning activities.

Keywords

gender, qualification,
years of experience,
teaching-learning
activities, the interplay

Introduction

The goals and objectives of education are achievable through the efforts of the teachers and their characteristics. Fehintola (2014) stated that out of human resources teachers are indispensable resources in the education system; this is so because teachers are in the best position to interpret the aims and goals of education and ensure that the children are educated following the value and norms of the society. The material and other non-human resources may be available for use, but if the teacher is not qualified and experienced the objectives of the subject matter may not be achievable. Teaching jobs are often lucrative for people who have a passion for teaching. Every teacher wants to be a good teacher, but he or she must possess the ability to develop good student-teacher relationships, be patient, caring,

kind and good personality, have knowledge of the learners and subject matters, dedication to teaching and engaging learners in a learning activity (Peterson-Deluca, 2016).

Teachers' qualifications, personal characteristics, and the role played in motivating learners to work hard in enhancing their performance and shaping their future are important factors to be considered during the teaching-learning process (Ngugi & Mumiukha, 2016). Fehintola (2014) recognized teachers as the heart of the educational process that provides quality teaching with the effectiveness of its result. Failure of the government to recruit good and quality teachers served as the main bottleneck of learners' academic achievement. Araoyinbo (1995) as cited in Fehintola (2014) noted that male teachers differ from female teachers in personality and social traits because male teachers are much more emotionally stable, and business live but less friendly and responsible than their female counterparts. A good teacher must ensure that the design of the subject, selection of teaching and learning opportunities and assessment of the learning outcome help the learner to learn better. Teachers, who want to 'produce' successful secondary school graduates who are capable of critical thought, and able to be creative and innovative at a relatively high level, there must be effective teaching-learning activities that can achieve these (Fry, et al., 2009).

The existing research, therefore, leaves us with few answers to questions about the interplay among teachers' gender, qualifications, years of experience and their teaching-learning activities. It seems that no answer was provided to this question. Most of the research carried out in which answers were adequately provided is on the influence of gender/qualifications/years of experience on students' performance by some scholars like Akpo and Jita (2013); Armstrong (2014); Kimani, et al. (2013) and Raya & Vieira, (2015). Obot (2014) found that teachers' years of experience and qualification are the major determinant of teachers' competence which influences the subject matter and students' interest in learning a specific concept as related to their subject.

Duke and Gray (1989) as cited in Ahiatrogba (2017) identify four essential attributes for efficient teaching which include: what is being taught, the rapport between teacher and student, and the organization of the training situation. Teaching there requires a representation of women and men of reasonable age.

Statement of the Problem

A functional educational system requires the competence of teachers who can put research sources together to achieve a common goal in education. Most times, failure of learners in any examination both internal and external shifted on the learners and parents without looking critically at other factors such as teachers' characteristics and the activities involved which can cause a decline in learner achievement. Most of the time, the general public criticizes some of the school factors especially the school environment and location as the major contributors to the poor achievement of a learner at the secondary school level without looking at how teachers' characteristics such as gender, qualification and years of experience could enhance their teaching-learning activities. However, only a few studies empirically examined the interplay of teachers' characteristics on activities put in place by the teachers during the teaching-learning process.

Purpose of the Study

1. determine how teachers' gender, qualification and years of experience affect teaching-learning activities.
2. find out the disparity in the teaching-learning activities of male and female secondary school teachers.

Research Hypotheses

This study is guided by two hypotheses.

1. Gender, qualification, and years of experience of secondary school teachers have no significant interaction effect on their teaching-learning activities.
2. There is no significant difference between the teaching-learning activities of the male and female teachers.

Literature Review

The review of related literature focused on the teaching-learning activities and teachers' characteristics such as gender, qualification and years of experience. The interaction effect of the variables and how they affect the teaching-learning

activities of the teachers in secondary schools was critically discussed to find the gap in the studies carried out by different researchers.

Teaching-learning activities in secondary schools

Teaching-learning activities in this study as contained in the content of the instrument used to collect data, which involve the teacher-student relationship, classroom management, practice, strategies for addressing classroom challenges, maintaining a positive and effective learning environment, utilization of materials, and the confidence in the ability to complete a task or achieve a goal (self-efficacy). The teachers' activity during the teaching-learning is determined externally as a sequential assessment of learners' achievement to ensure that the objectives of the lesson are achieved. (Skourdoumbis, 2014).

There is a general belief that teachers are extremely important determinants of learners' achievement. Teachers are implored to be more committed to their professional development through interest and attendance at appropriate in-service courses, and commitment to a programme of professional study (Bonny et al., 2015). Bal-Tasten et al. (2017) also suggested that knowing that teacher characteristics in terms of teaching skills and self-efficacy influence their practice.

Solheim (2017) stated that modern societies demand high-quality teaching and learning from teachers. A good and well-trained teacher must possess knowledge and skills about his/her teaching subject and the methods appropriate for assessment of the contents covered within a given period. Teachers maintain a positive and effective learning environment through well-prepared and varied lessons, which cater to students' abilities and interests. Solheim (2017) stressed further that teachers with good quality teaching try to find out more about their subject and look for new areas related to the subject and adopt appropriate methods for teaching the content. It was also found that there is a positive link between teaching-learning in classroom interaction and learners' outcomes as perceived by the teachers themselves. Ranka (2016) explained the theory of the teacher-student relationship propounded by Pianta (1995) as the process whereby teachers shape students' experiences in schools during the teaching and learning process. Beyond this, the teachers also perform other functions such as guidance activities to students throughout their academic careers. Teachers also provide learners with communication skills, opportunities to form peer relations, behaviour support and teach coping skills. Ranka (2016) also found that teachers engaged themselves in instructional practices and promote effective classroom interactions with learners in a positive way that will enable them to improve their academic achievement.

Most people believe that teachers' effectiveness is the solution to learners' underachievement. This belief was confirmed by Tygret (2017) the research demonstrated evidence of effective classroom management, organisation, knowledge of subject content, problem-solving skill, building a positive relationship with learners being taught and taking initiative in class during the teaching-learning practice by the student teachers.

Teachers' characteristics

Teachers are a set of people that graduated from accredited recognised higher institutions with approved education programmes in which the institutions awarded different categories of education certificates. After the award of the certificate, some are required to complete an induction programme or to pass a national teacher examination test to obtain a certified professional teacher licence for the effective and successful practice of his/her profession (Okunloye, 2009 as cited in Oyelekan, et al., 2017; Zuzovsky, 2008). The teacher characteristics will be discussed under the following sub-headings: Gender, qualifications, years of experience, an interaction effect of gender, qualifications and years of experience on how it influences the teaching-learning activities of the teachers.

Gender

Gender is associated with a person's biological sex (American Psychological Association, 2011) defined. In research conducted by Odinga, et al. (2015) on the influence of gender on teachers' self-efficacy, it was found that gender does not influence teachers' self-efficacy. Ikuta, et al. (2016) found that female and male student teachers have different gender roles which determine their intentions to enter the teaching profession in Tanzania. It was also discovered that a positive relationship exists between gender roles and the intention to enter a teaching career after graduation from any educational institution.

Statham, et al. (1991), and Grasha (1994) as cited in Ahiatrogah (2017) found that women in the teaching field spent a greater proportion of time encouraging and allowing student participation in teaching than their men. Also, women relate to students and perform the role of guidance more than their men counterparts. In research conducted in Ghana among Distance Education (DE) students by Ahiatrogah (2017), it was revealed that Distance Education male and female students exhibit different levels of skills used in teaching during the guided practice which favour the female students.

Oktan and Kıvanç-Çağanağa (2015) further strengthen that gender role in teaching also influence their roles in society. In a study conducted in Cyprus on the impact of teachers' gender differences on how to manage a classroom, it was revealed that gender roles may also influence teachers' way of education and roles in society. From the result, it was found that gender was not very related to the classroom management strategies of the teachers.

Nyjah, et al. (2014) as cited in Oktan and Kıvanç-Çağanağa (2015) confirmed that female teachers are better than their male counterparts in instructional strategies, while males are better than females in terms of student engagement. In another research conducted in Kenya by Kurga (2014), it was established that gender has no significant influence on teachers' attitudes towards the integrated E-learning approach as part of activity carried out during the teaching-learning process.

Qualification

In many countries today, certain qualifications need to be obtained before teachers are permitted to enter the teaching profession. In Nigeria, the minimum qualification to enter the teaching profession at the primary and secondary school level is the National Certificate in Education (NCE). Other qualifications are a Bachelor of Education (B. Ed), Bachelor of Arts Education (BA. Ed), and Bachelor of Science Education (B.Sc Ed). Those with a Bachelor of Arts (BA), Bachelor of Science (BSc), Bachelor of Technology (B.Tech), and Higher National Diploma (HND) with Post Graduate Diploma in Education (PGDE) or Postgraduate Certificate in Education (PGCE) are also engaged in teaching activities. Other qualifications such as master's in education (M. Ed) and Doctor of Philosophy (PhD) are also recognised, though are not part of the criteria for recruitment of teachers into secondary school levels in Nigeria. In addition, evidence of membership in the Teacher Registration Council of Nigeria (TRCN) through licensing, registration enlisting of qualified teachers (Federal Republic of Nigeria, 2013; Ibenegbu, 2017).

In Australia, the policy on teachers' qualifications to teach mathematics in secondary schools varies between the states (Ingvarson, et al., 2004). They categorised mathematics teacher qualifications into two varieties: qualification in the area of specialization (mathematics) and qualification in education (method courses) which is also applicable to other disciplines. Some teachers acquire these two qualifications in one certification like those teachers awarded B.Sc(Ed) or B.A(Ed) in Nigeria and other countries in Africa, which is also based on the education policy of the country and the policy of the institutions awarding such qualification/certificate. The single awarding certificate such as B.Sc and B. A are examples of qualifications in specialized areas. Before the holders of these certificates can be qualified to teach, they need an additional qualification in education either a Diploma or Postgraduate Diploma Certificate in Education based on the policy of the country where such certificates are to be used.

In a study conducted by Ngeru (2015) in Nairobi on the influence of teacher characteristics on resource utilization to support their activities. The study revealed that there was no significant correlation between teachers the educational background and the utilization of teaching materials, this means that in respect of their qualification's teachers use instructional materials to support their teaching. Also, there was no significant correlation between teachers' experience and the utilization of instructional resources.

In South Africa, Advanced Certificate in Education (ACE) was accepted as the minimum qualification (also, as it is the National Certificate in Education NCE) followed by an Advanced Diploma in Education, Bachelor of Education, Honours Degree in education/Postgraduate Diploma in Education, Master of Education Degree, Professional Master Degree, and Doctoral Degree in Education/Doctoral degree (professional). In addition, teachers must be endorsed by being a registered member of the South African Council for Educators (SACE) before he or they can be permitted to enter the teaching profession (Republic of South Africa, 2015, p. 33). In a position paper on the professional registration of Further Education and Training (FET) released by the South African Council for Educators (SACE) (2011), it was found that in the United Kingdom, FET lecturers are required to have a higher education qualification. Demark government required 5 years of professional experience in the subject area. In ralia, FET lecturers must meet the same requirements as ordinary school teachers for registration purposes with evidence from the Australian Teachers Registration Board (TRB).

Years of experience

An empirical study carried out by Oyelekan (2017) revealed that teaching experience is vital in a teaching situation that will enable teachers to develop skills or knowledge acquired during extensive teaching to make them successful throughout their years of teaching. Igberadja (2016) found that the teaching and learning of industrial safety in vocational and technical education depend on the knowledge of teachers or lecturers involved in the teaching of the course content and the effectiveness of the teacher during the delivery of the instruction to the learners. Ambe and Agbor (2014) confirmed that teachers' years of teaching experience do not significantly influence the implementation of the environmental education curriculum in Cross River State schools. It was established that years of experience play a significant role in the classroom management style of teachers and there is a positive correlation between years of experience and teachers' instructional management style. It was also revealed that there was a significant difference between the attitudes of instructional management based on years of experienced teachers (Ünal & Ünal, 2012).

The interplay of teachers' gender, qualification, years of experience and teaching-learning activities

Nigeria (2015) confirmed that teacher gender, academic qualification, professional qualification, and teaching experience have no significant influence on the utilization of instructional resources in preschools. Empirical research revealed that gender and years of experience significantly predict education self-efficacy perception and perception of responsibility from learner success. Gender accounts for only 11.4% of the total variance in education process self-efficacy perception and 9.1% of the total variance in the perception of responsibility from learner success. While years of experience account for 13.6% of the total variance in education process self-efficacy perception and 8.7% of the total variance in the perception of responsibility from learner success (Aktas, et al., 2013). In a study carried out by Oyelekan, et al. (2017) it was revealed that science teachers' experience and qualifications didn't influence the utilization of innovative teaching strategies.

Methodology

This study adopted quantitative survey research of 2 x 4 x 3 factorial design. Factorial design executes research investigations where more than one factor varies at a time or interacts with hypotheses simultaneously which allows a single study to test many hypotheses at once to reveal the interaction between variables (Bandeke, 2004, p. 82). The design derives its name from the fact that the contingency table has three categorical variables in which the 2 represents the sex (male and female), 4 represent teachers' qualifications (NCE, degrees in education, degree with PGDE and degree without education) while three represent years of experience (1-10 years, 11-20 years and 21 years and above).

The population for the study was made up of secondary school teachers in Ondo State, Nigeria. Samples were chosen from the target population (government-own secondary school teachers) to generalise or make an inference on the population from where the samples were drawn. The sample for the study consisted of 250 teachers selected from secondary schools using a multistage sampling technique. The state has three senatorial districts in which two local governments were selected from each district. A simple random technique was used to select two secondary schools per local government to make a total of 12 secondary schools. Two hundred and fifty (250) teachers were selected from 12 secondary schools using the proportional stratified sampling technique.

This research developed an instrument titled "Teachers Teaching-learning Activities Questionnaire (TTLAQ)" of a four-point Likert scale from strongly disagree, disagree, agree and strongly agree in which 1, 2, 3 and 4 represent each of the scales respectively that contained 35 items. The researchers adapted some of the items from an instrument developed by Aremu and Hamed (2002) on a teaching-learning inventory that related to the objectives of this study from the University of Ibadan, Nigeria which initially contained 45 items. The validity of the instrument was determined using face and content validity by experienced principals in secondary schools and lecturers who specialized in teachers' education programmes. The new version of the questionnaire was pilot tested by administering the questionnaire to 20 selected secondary school teachers who were not part of the sample for the study but formed part of the population. The reliability of the questionnaire was determined using Cronbach Alpha with a reliability coefficient value of .79 which shows that the instrument is consistent in measuring what it was designed to measure. Permission was requested from the principals of the schools selected to conduct research and sought the teachers'

consent after the purpose of the research had been explained to them. Also, the researcher guaranteed confidentiality and anonymity of all information provided. The questionnaire was administered with the help of trained research assistants (student teachers). This was done under the supervision of the various heads of the department in the schools selected for the study. The questionnaire was given to teachers and collected back after completion.

Data collected from the respondents using a questionnaire were analysed using descriptive and inferential statistics like three-way analysis of variance and t-test. The research question was answered descriptively using frequency count and percentage while the two hypotheses stated were tested at a .05 level of significance.

Results

Ho1: Gender, qualification, and years of experience of secondary school teachers have no significant interaction effect on their teaching-learning activities.

Table 1: Tests of - subject's effects

Source	Sum of Square	df	Mean Square	F	Sig	Partial Eta Square
Corrected model	5761.050	19	303.213	2.687	.000	.182
Intercept	533560.905	1	533560.905	4727.968	.000	.954
Gender	500.672	1	500.672	4.437	.036	.019
Qualification	778.867	3	259.622	2.301	.078	.029
Year of experience	1600.905	2	800.452	7.093	.001	.058
Gender* Qualification	377.558	3	125.853	1.115	.344	.014
Centre* year of experience	822.256	2	411.128	3.643	.028	.031
Qualification* Year of Experience	912.706	5	182.541	1.618	.156	.034
Gender* Qualification* Year of experience	1268.772	3	422.924	3.748	.012	.047
Error	25955.974	230	112.852			
Total	1952260.000	250				
Corrected Total	31717.024	249				

R-square = .182 (Adjusted R-square = .114)

The data on the seven sets of independent variables were listed in Table 1: gender, qualification, years of experience, gender*qualification, gender*years of experience, qualification*years of experience, and gender*qualification*years of experience. The column headed "sig" as shown in Table 1 indicates significance levels for the seven sets .036, .078, .001, .344, .028, .156 and .012 respectively. Gender ($F_{(1,230)}=4.437$, $p < .05$) and years of experience ($F_{(2,230)}=7.093$, $p < .05$) have a statistically significant effect on the teaching-learning activities of teachers. Interaction effect of gender and years of experience ($F_{(2,230)}=3.643$, $p < .05$) have a statistically significant effect on the teaching-learning activities of teachers. There was a statistically three-way interaction effect among gender, qualification, and years of experience ($F_{(3,230)}=3.748$, $p < .05$) on teaching-learning activities of teachers. While qualification ($F_{(3,230)}=2.301$, $p > .05$), the interaction effect of gender and qualification ($F_{(3,230)}=1.115$, $p > .05$) and interaction effect of qualifications and years of experience ($F_{(5,230)}=1.618$, $p > .05$) do not have a statistically significant effect on teaching-learning activities of teachers. The Partial Eta squared for gender is given as 0.019, years of experience is given as .058, the interaction effect of gender and years of experience is given as 0.031 and the interaction effect of gender, qualification and years of experience is given as 0.047 shows that the effect size on the four sets are very small indeed despite that they have a significant effect on the teaching-learning activities of teachers. The R square value is .182 in which the predictor variables account for 18.2% of the variance in the dependent variable as indicated in Table 1 which is low. The adjusted R square value is .114 in which the predictor variables account for 11.4% of the variance in the dependent variable. The remaining variance could be attributed to other variables not included in this study.

Ho2: There is no significant difference between the teaching-learning activities of the male and female teachers

Table 3: t-test on classroom practice

Sex	N	Mean	SD	t-cal	DF	Sig
Male	110	90.509	10.087	3.639	248	.000
Female	140	85.400	11.698			

In Table 3, it was revealed that there was a significant difference between the teaching-learning activities of male and female teachers ($t\text{-cal.} = 3.639, p < .05$) in favour of male teachers with a mean value of 90.5091 higher than the female teachers with a mean value of 85.400.

Discussion of Findings

In hypothesis one, the effect of the seven independent variables: gender, qualification, years of experience, gender*qualification, gender*years of experience, qualification*years of experience, and gender*qualification*years of experience varies at a time and interact simultaneously with the teaching-learning activities of secondary school teachers. Gender, which is the first set of variables had a significant effect on teaching-learning activities which agrees with the finding of Araoyinbo (1995) as cited in Fehintola (2014) that gender affects teachers' involvement in the teaching-learning process. The second set of variables which is teacher qualification has no significant effect on the teaching-learning activities of the teachers which disagrees with the finding of Igberadja (2016) that teaching and learning depend on the knowledge and qualification of teachers. The third set of variables which is years of experience has a significant effect on teachers' teaching-learning activities which disagrees with the finding of Ambe and Agbor (2014) stated that teachers' years of experience in their teaching career do not significantly influence the implementation of education curriculum. The fourth set of variables which is the interaction effect of gender and qualification had no statistically significant effect on secondary school teachers' classroom practice. This supports the findings of Igberadja (2016) that the gender and qualifications of teachers do not have a significant effect on the learning achievement of industrial safety learners because of the teaching-learning activities of the teachers.

The fifth set of variables which is the interaction effect of gender and years of experience that showed a significant effect on teachers' classroom activity which was confirmed by Aktas et al. (2013) that both gender and years of experience positively and significantly predict the education process that deals with the teacher's ability to produce during the teaching-learning process. The sixth set of variables which is the interaction effect of qualifications and years of experience has no significant effect on teachers' teaching-learning activities thereby contradicting the findings of Teachers' experience and professional qualification were the prime predictors of students' learning achievement because of teaching-learning activities (Kimani et al., 2013; Raya & Vieira, 2015). The seven sets of variables which is the three-way interaction effect among gender, qualification and years of experience have a significant effect on teachers' teaching-learning activities which contradicts the findings of Ngeru (2015) that teachers' gender, qualification, and teaching experience have no significant influence on the utilization of the available instructional resources in schools.

In hypothesis two, it was revealed that there was a significant difference between the teaching-learning activities of male and female teachers, the mean value shows that the male is better than the female. Nyjah, et al. (2014) as cited in Oktan and Kivanc-Caganaga (2015) and Ahiatrogah (2017) confirmed that female teachers are better than their male counterparts in instructional strategies and the female teachers are more supportive of students during the teaching-learning process than the female teachers which contradict the result of this study.

Conclusion

Based on the findings of this study, it was established that gender; Years of experience; interaction effect of gender and years of experience, and the interaction effect of gender, qualification and years of experience are good predictors of teachers' teachers teaching-learning activities in secondary schools. The teachers' characteristics have become the central foci to determine the interplay among the variables in enhancing the teaching-learning activities of teachers.

Recommendations

The current study has recommended that there is a need to take into consideration the factors that can enhance the teaching-learning activities of teachers in secondary schools. Years of teaching experience must be a prerequisite after

the candidate must have met the teaching qualifications as specified by the Teaching Service Commission (TESCOM) or Ministry of Education and Training (MoET).

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