

Teachers' Characteristics and Test Construction Ability in Technical Colleges in Akwa Ibom State, Nigeria

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Abstract

The variation in students' performance on standardise tests and teachers made tests even when tested in the same content and subject matter was of great concern to the researcher. The need for the teachers to follow accurate steps in test construction necessitate this study. The main purpose of this study was to determine the extent to which teachers' characteristics influence their test construction ability. In specific terms, the study sought to determine whether teachers' years of teaching experience, qualification and professionalism influences their test construction ability. To achieve the purpose of this study, three objectives with corresponding research questions and hypotheses were formulated to guide the study. In order to get more insight into the study, literatures were reviewed. This study adopted an ex-post facto research design. The study was conducted in Technical Colleges in Akwa Ibom State with a population of 392 teachers in the 2022/2023 academic session. All the teachers were used as samples because of the small population. The main instrument for data collection was a 40-item questionnaire titled 'teachers test construction ability questionnaire (TconAbility)' designed using a five-point Likert scale. The instrument was designed in two parts, part I gathered information on teachers' characteristics and part II measured teachers' test construction ability. The instrument was validated by three experts in educational evaluation from the University of Uyo. The reliability stand of the instrument was .81. Data was collected personally and through the use of five trained research assistants in each of the Technical Colleges in the study area. Mean, standard deviation, t-test and one-way analysis of variance (ANOVA) were used for data analysis. The result of the analysis indicated that there is a significant influence of years of teaching experience, qualification, and professionalism on teachers' test construction ability. Based on the findings, it was concluded that teachers' characteristics influenced their test construction ability. The study recommended, among others, that during test and measurement courses in the institution of higher learning, evaluation should be based on practical not paper-pencil tests.

keywords: Teacher Characteristics, Test construction ability, Years of experience, Teachers' qualification, Professionalism.

Introduction

Effective teaching and learning lie within the purview of teachers, and it is based on the qualities and devotion of teachers that the effectiveness of educational arrangement, development and growth rest upon. It may have been on this note that the National Policy on education noted that no educational system can be greater than the standard of their teachers'

Education (Federal Republic of Nigeria 2004). In the interaction process with the students, teachers face the challenges of translating educational policy and principles into actions, thus classroom testing determines the extent to which that is accurately carried out.

Central to the preparation and administration of classroom tests are the teachers; succinctly, the teachers can be regarded as the first assessment agents having come in contact with the students. Teacher/student relation creates an impetus for interrelation thereby giving room for diagnosing students' needs through testing. Aside from diagnosing students' needs, testing plays other functions such as placement, promotion, guidance function and reporting etc. A test can thus be seen as that instrument in the hand of teachers which help to determine the extent to which educational objectives have been achieved. It is an engine that drives learning.

A well-designed test has the potential of setting clear expectations, establishing a reasonable workload and providing opportunities for students to be self-monitored, rehearse, practice and receive feedback, while a poorly designed test has the potential of hindering learning. In education, a test is seen as that instrument in the hand of the teacher employed to measure sample of behaviour before, during or at the end of the instructional process. Since the test measures a sample of behaviour to generalize the same, it becomes mandatory for test developers (teachers) to have the prerequisite skills in other to forestall the incidence of false generalization. The fundamental role of assessment necessitates the need for validity and reliability of classroom testing instruments in measuring students' real knowledge and skills instead of test-wiseness or test-taking ability.

The efficacy of understanding the various assessment procedures centres on the assessors' assessment literacy or ability. This tests literacy or ability can be seen as the knowledge and skills acquired by the assessors in other to identify and use the appropriate assessment techniques to gather accurate evidence of student learning. Pophan (2009) make this clear when explaining that;

The assessors possess assessment literacy when the assessment related knowledge and skills needed is available, including the ability to define clear learning goals (settings objectives) which are the basis of developing or developing choosing ways to assess student learning as well as knowing how to make use of a variety of assessment methods to provide accurate evidence of student learning. (p.48)

From the foregoing, it can be accurately noted that test literacy is needed to achieve the purpose of testing. Testing literacy can thus be viewed as the ability of the tester to set and use a valid and reliable instrument that has the potential of testing the cognitive, affective and psychomotor domain of learning. It is the ability of the tester to be able to understand how to

test qualities (specification of purpose, standard conditions, validity, reliability and usability) varied within the taxonomy of learning objectives.

A tester (teacher) with good test literacy can be said to have good test construction ability. Test construction ability thus is the extent to which the test items meet up with the expectation and are in agreement and serve in conjunction with one another to guide the teaching system toward student learning, what they are expected to know and do (Webb 2006). It is the degree of match between content included in the test and the content of subject area covered, as well as good items analysis coefficient index.

Good test items should be able to diagnose what a student knows and is able to do with that knowledge, especially at the technical school level which emphasis is on skills acquisition and soft skills needed to produce students with an entrepreneurial mindset. To achieve this, assessment measuring tools (test) should be designed to measure students' achievement. Test construction ability in this regard is the intelligence needed by the teacher (test developer) to accurately follow the assessment system – first, standard, then curriculum framework and the basics steps in test construction. The test is a very important tool in the hands of the teachers because the quality of the test given by the teacher is closely linked with its ability to provide the kind of information needed regarding students' performance. In this case, a well-written test will allow the teachers to accurately and consistently measure students' mastery of specific content taught in the class; but the reverse is the case in a poorly written test. In the education system, testing is very important to the teachers, administration, parents as well as all the stakeholders, and it is important in making an informed decision and prediction of the child's performance at every level of education. The use of assessment by teachers has long been invoked, as noted by Nuffield Foundation (2003).

Researchers have long acknowledged the role of teachers' characteristics in translating educational policy into practice. Many studies attempted to relate teachers' characteristics with many facets of the educational system such as administration (Boren, 2010), students' academic performance (Rockstroh, 2013; Omotayo, 2014 and Ibe, *et al*, 2016), Teaching effectiveness, (Shweta and Tyagi 2013), student attitude towards subject matter (Adu, *et al* 2014) and students' choice of teaching as a career (Akintomide and Oluwatosin 2011). However, few studies and authors were seen as relating teacher characteristics to test or classroom assessment (Kalogride, *et al* 2011)

Drawing an inference from other scholars, the researcher's interest in the study was to establish the influence of teachers' characteristics on the test construction ability of teachers. This is necessary because as teachers enter into the noble profession of teaching and assessing students, their characteristics are heterogeneous such as in the aspect of gender, background, location within a country (rural and urban), educational experience, qualification, teaching experience, attitude and belief about teaching and learning, age, attitude to teaching and a lot more.

A well-qualified teacher according to Darling-Hammond (2000) is one who is fully certified and holds the equivalent of a major in the field he taught. The importance of this qualification is stressed by Haung and Moon (2009). They document that teachers' qualifications accounts for approximately 40 to 60 percent of the variance in the average of student achievement in assessment and other professional functions. Teachers' qualification in the context of this study is the kind of professional education for teaching that the teacher had received. In Nigeria, the minimum requirement for teaching is Nigeria Certificate in Education (N.C.E.) as stipulated by the National Policy on Education (Federal Republic of Nigeria, 2004). But, due to the shortage of teachers and a high rate of unemployment, so many people go into teaching even when they are aware that they are not qualified to teach. Empirical studies confirm relationships between qualifications of a teacher and learners' academic achievement. For instance, Unanma, Abugu, Dike, and Umeobike (2013) studies confirmed relationships between qualifications of a teacher and learners' academic achievement of Senior Secondary School Students in Chemistry and discovered that there is a positive relationship between the variables.

Other studies like Adodo (2014) study findings showed no relationship between teacher characteristics and test construction abilities. Adodo (2014) conducted a study to access the competency of secondary school teachers in evaluating students' cognitive and psychomotor achievements in basic science and technology with teachers' gender, years of experience and qualification as variables. The results of the study indicated that teachers' qualification and their years of experience does not have any effect on how to determine the objective of the test, constructing table of specification and evaluate students' learning outcome but there was a significant difference in teachers' gender, and their competency in evaluating sciences learning outcome.

The professionalization of the teaching profession in Nigeria, certification and licensing are aimed at having qualified teachers to man the educational system. Professionalism refers to an in-depth knowledge, skill, ethics and public spiritedness in the discharge of a function. It encompasses a number of different attributes and together, these attributes identify and define a professional. Professionalism is further explained by Ciwar (2007) as a process that transforms a vocation from the traditional, generalized mode of operations to highly technical knowledge and specialized field. Teachers Registration Council of Nigeria (TRCN) (2005), attests that professionalism guarantees that ethics are imbibed (test ethics included), the rules of the game exist and are obeyed by all, clients (students and parents) get value for their money and efforts, public interest is protected, priority is given to nation building, and above all that the professionals are regarded with dignity and awe.

Professionalism is mostly related to the subject matter (area of specialization), knowledge acquired during formal studies and pre-service education courses (teaching practice). The difficulty in the recruitment of certified teachers for schools, the deteriorating

core of large classroom size, administrative bottlenecks and political interference in the hiring of graduates without pre-service training or teaching experience, are some of the issues that professionalizing the teaching profession seeks to check. It is the belief of some people that any educated person with or without the teaching qualification can teach and construct test items for assessment purposes. This assertion is completely wrong as indicated in results obtained by previous scholars. For instance, Salihu (2019) assessed teachers' ability on test construction and Economics (Tcontent) validity in Nasarawa State senior secondary schools, Nigeria. The content analysis and correlational research design were adopted for the study. Findings of the study revealed that there was a significant mean difference in ability between professional teachers and non-professional teachers of Economics in test construction and there was a significant mean difference in ability between public school teachers and private school teachers of Economics in content validity among others. Also, Ololube (2008) conducted a study on evaluation competencies of professional and non-professional teachers in Nigeria. The results revealed that professional teachers keep records of individual students more accurately than non-professional teachers

Teachers' years of experience refers to the actual number of years a teacher has put into classroom teaching and not necessarily the number of years after graduation. Experienced teachers tend to have a richer background of experience to draw from and could contribute insight and ideas to the course of teaching and learning (Kosgei, *et al* 2013). The number of years invested in the teaching profession is sometimes related to professional development. A number of studies confirm findings from existing research that, on average, new teachers are less effective than those with some experience under their belts (Harris and Sass 2007; Kane, *et al* 2006; Ladd 2008).

On the contrary, a study using New York City data illustrates the diminishing marginal returns to years of experience (Boyd, Lankford, Loeb, Rockoff, and Wyckoff, 2007). These studies have documented some evidences that effectiveness declines after some point, particularly among high school teachers. In fact, evidence suggests that the most experienced (greater than 25 years) high school mathematics teachers may be less effective than their less experienced counterparts (Ladd, 2008) and even their inexperienced colleagues (Harris and Sass 2007).

From the above background, teachers' characteristics may in one way or the other affect teaching service delivery. This means, an individual's state of mind in a particular period may have a great influence on his or her behaviour at a particular time. It may have been on this note that various studies (as cited earlier) were previously conducted to ascertain the influence teachers' characteristics have on various aspects of their service delivery. However, no study was found to have investigated teachers' characteristics and their test construction ability, which stirred the researchers' interest to conduct a study of this nature.

Statement of the Problem

There have been abnormalities in literature and as observed by the researchers when it comes to test construction in Technical Colleges. Some of this may include, the inability of teachers-make tests to play both formative and summative evaluation roles to all the stakeholders in the education system. In a formative way, the researcher personally observed the inability of teachers-made tests to prepare students for external examinations such as the National Business and Technical Examination Board (NATEB) and General Certificate of Education (GCE). Also, the inability of teacher-made-test to be a vital tool in monitoring students' learning, to provide ongoing feedback that can be used by instructors to improved their teaching and to improve students' learning are also observed by the researcher. Furthermore, it is also seen that teacher-made-test are unable to help students identify their strengths and weaknesses and thus target areas that need to be worked upon are most time unknown. Additionally, teacher-made tests are unable to help the school counsellors to recognize where students are struggling and address problems immediately.

In the summative sense, teacher-made tests fail to predict students' performance in higher institutions. It fails to determine the attainment of the goals and objectives of the technical education board as enshrined in the National Policy on Education. These are quite glaring in a situation where a graduate of technical education cannot manipulate simple machines or working tools, lack the needed skills to be useful to self, *let alone* being useful to society. The researcher also observed that teacher-made- tests do not have the ability to measure the level of success of proficiency obtained at the end of an instructional process when compared with the stated goals.

Other outstanding factors faced in Technical Colleges as observed by the researcher could be overcrowded classroom sizes of over 100 students per class. In 2014, a monitoring exercise was conducted in all Technical Colleges. The exercise aimed at assessing classroom tests and assignments given to students, the content of the tests in line with the approved scheme of work; validities of the test items and student scores on assessment tests. Unfortunately, no result was released at the end of the assessment (Akwa Ibom State Technical Education Board 2015). The question of how many teachers follow the necessary tests construction procedure before settings and administering tests may have been a point of interest to the monitoring teams as it is to the current researcher. In addition, the researcher personally observes a variation between students' academic performance in teacher-made tests and standardised tests even when tested on the same content and subject matter.

The effect of the poor measuring instruments (test) is feasible to the students, teachers, school administration, parents, and even the entire society. In view of this assertion, the researcher wonders if characteristics could influence the test construction ability of teachers. The findings of this study would give direction to this study.

Purpose of the Study

The main purpose of this study was to determine the extent to which teachers' characteristics influence their test construction ability. The study specifically sought to:

- i. Determine influence of teachers' years of experience on test construction ability in Technical Colleges in Akwa Ibom State.
- ii. Determine the extent to which teachers' qualification influences their test construction ability in Technical Colleges in Akwa Ibom State.
- iii. Find out whether teachers' professionalism influences their test construction ability. in Technical Colleges in Akwa Ibom State

Research Questions

The following research questions were formulated to guide the study and were answered using descriptive statistics.

- i How does teachers' years of experience influence their test construction ability in Technical Colleges?
- ii To what extent does teachers' academic qualification influence their test construction ability in Technical Colleges?
- iii How does teachers' professionalism influence their test construction ability in Technical Colleges?

Null Hypotheses

The following null hypotheses were formulated to guide the study and tested at .05 level of significance.

- H₀₁:** There is no significant influence of teachers' years of experience on their test construction ability in Technical Colleges.
- H₀₂ :** There is no significant influence of teachers' academic qualification on their test construction ability in Technical Colleges.
- H₀₃ .** There is no significant influence of teachers' professionalism on their test construction ability in Technical Colleges.

Methodology

Ex-post facto research design was seen to be appropriate for a study of this nature due to the variables involved in the study. Ex-post facto literally means after effect; it is a kind of research in which the independent variable (phenomena of interest) is not being manipulated by the researcher. It exists by nature e.g gender, age among others. It is a kind of research in which the predicted possible cause behind an effect has already occurred. (Isangedighi, Joshua, Asim & Ekuri, 2004)

Ex-post facto research can be defined as an empirically based investigation which does not involve the researcher's direct manipulation of independent variables because they have already led to effects which have already occurred. This design has the following characteristics; the researcher focuses on the effect and not on the cause, no manipulation, there is a comparison group. This study met the characteristics of ex-post facto research design, and that is why the researcher found it appropriate. First, this study focuses on the effect (observed teachers test construction ability), and not the cause which is yet unknown. Secondly, the researcher has no part in manipulating the independent variables use in the study. Some of the independent variable (which are teachers' demographic variable) existed by nature while other have been acquired by teachers already either before or after entering into the teaching profession, hence at the time this study was conducted, the researcher had nothing with manipulation of the independent variables.

The study was conducted in Technical Colleges in Akwa Ibom State. The population of this study covered 392 teachers in the seven technical colleges located in Akwa Ibom State as at 2018/2019 academic session (Source: State Technical School Board). Purposive sampling technique was used to select 342 teachers for this study. Purposive sampling is a sampling methods of drawing representative sample by selecting people because of eased data collection and volunteering or selecting units because of their availability or ease of access. Purposive sampling method is a technique in which respondents are selected by convenience due to their proximity, availability, and accessibility or other way that researcher may judge to be accurate (Abrams, 2010). The small number of populations made this technique most appropriate for this study. A structured questionnaire titled 'Teachers' Test Construction Ability Questionnaire' (TconAbility) was used for data collection in this study. This instrument was constructed by the researcher. The instrument was in two sections; section A, measured the demographic variables of the respondents (such as years of experience, qualification and professionalism). These variables served as the independent variables in the study. Section B measured teachers' test construction ability. Emphasis was on all the activities expected from a teacher, from setting test objectives to item analysis. The instrument was trial tested using fifty (50) teachers who were not part of the main study. Thereafter, the internal consistency of the instrument was determined using Cronbach Alpha statistics. The reliability coefficient was .81. This indicated a good reliability coefficient for the research instrument.

Results

Research Question 1: How does teachers' year of experience influence their test construction ability in technical colleges?

To answer this research question, mean and standard deviation were used; the result is presented in Table 1

Table 1: Mean and Standard Deviation of Teachers' Test Construction Ability Based on their Years of Teaching Experiences. (n=342)

Years of Experience	n	Mean	SD
1-10	83	3.62	.48
11-20	100	3.41	.44
21 - 30	91	3.41	.41
31 and above	68	3.31	.45
Total	342	3.41	.46

Source: Field Data, 2020

Table 1 shows that teachers with 1-10 years of teaching experience have the highest mean response of 3.62 followed by those with 11-20 years of experience (3.41) and 21 – 30 years of experience (3.41) respectively, while the least mean response was with teachers who have more than 30 years of working experience (3.32). Therefore, the result shows that teachers' years of experience influences their test construction ability. New teachers with 1-10 years of teaching experience have less test construction skills as measured in teachers' test construction ability questionnaire used in the study. However, as they progress in the teaching profession, they tend to develop their test construction ability. The equality in the mean score of teachers serving between 11-20 and 21-30 years attest to this fact. Conversely, as teachers reach 31 years and above in their teaching services, their performance in construction tend to reduce.

Research Question 2: To what extent does teachers' qualification influence their test construction ability in technical colleges?

To answer this research questions, teachers were categorized based on their highest educational qualification obtained. Mean and standard deviation were used to answer this research question and the result is shown in Table 2

Table 2 Mean and Standard Deviation of Teachers' Test Construction Ability Based on Qualification. (n = 342)

Qualification	n	Mean	SD
NCE	65	3.68	.48
HND	112	3.41	.43
Bachelors' Degree	116	3.40	.43
PGD	35	3.26	.47
Masters' Degree	12	3.48	.35
PhD	2	2.85	.14
Total	342	3.44	.46

Source: Field Data, 2020

Table 2 shows the mean score of teachers based on their highest educational qualification. Teachers with NCE certificate have the highest mean response of 3.68 followed by those with Master's degree (3.48), HND certificate (3.41), Bachelor's degree (3.40), PGD (3.26) respectively, while the least mean response was with teachers who have PhD degree (2.85). Therefore, the result shows that teachers' qualification influences their test construction ability. There is variation in the mean score of respondents on the test construction ability questionnaire used in this study. It was seen that teachers with NCE certificate performed better than other categories of qualified teachers. However, teachers with PhD degree performed lower than other categories of teachers. Based on the variation in the mean performance of teachers in different categories of qualification, the researcher was able to statistically conclude that teachers' qualification influences their test construction ability.

Research Question 3: How does teachers' professionalism influence their test construction ability in technical colleges?

To answer this research question, teachers were categorized based on their qualification in education (professional teachers) and non-qualification in education (non-professional teachers). Mean and standard deviation were used to answer the question, and the result of the analysis is presented in Table 3

Table 3: Mean and Standard Deviation of Teachers' Test Construction Ability Based on Professionalism. *(n=342)*

Professionalism	n	Mean	Std. Deviation
Qualification in Education	214	3.49	.46
Without Qualification in Education	128	3.36	.44

Source: Field Data, 2020

Tables 3 indicates that teachers with qualification (professional teachers) have the higher mean score of 3.49 on their responses while teachers without qualification in education (non-professional teachers) have the lower mean score of 3.36. The result as presented in the table indicates that professionalism influenced test construction ability. From the table, it was seen that professional teachers score higher than the non-professional teachers in the test construction ability questionnaire used in the study. Based on this outcome, the researcher drew inference that it is the professional training received that lead to their high score compared to non-professional colleague.

Null Hypothesis 1: There is no significant influence of teachers' years of experience on their test construction ability in technical colleges.

To test this hypotheses, Analysis of variance (ANOVA) was used, and the result is presented in Table 4.

Table 4: Analysis of variance (ANOVA) of the influence of teachers’ years of experience on test construction ability in technical colleges in Akwa Ibom State. (N=342)

Years of Experience	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6452.986	3	2150.995	6.648	.000
Within groups	109362.020	338	323.556		
Total	115815.006	341			

**Significant at .05, df = 3,338 and 6.648*

Source: Field Data, 2020

Table 4 shows that the significant value of .000 in the SPSS output table is less than the p-value of .05 with 3 and 338 degrees of freedom. Since the significance value was less than the p-value, the null hypothesis which states that ‘there is no significant influence of teachers’ years of experience on their test construction ability in technical colleges’ was rejected. The rejection of the null hypotheses implies that teachers’ years of experience significantly influences their ability to construct a valid and reliable test instrument. Because the result of the analysis was significant with more than two groups, scheffe post-hoc test was conducted; the result of the post hoc test conducted is shown in Table 5.

Table 5: Scheffe’s Multiple Comparisons of teachers’ years of experience and their test construction ability Dependent Variable: Years of Experience

(I) Factor	(J) Factor	Mean Difference (I-J)	Std. Error	Sig.
1-10	11 – 20	8.336*	2.671	.022
	21-30	8.289*	2.730	.028
	30 and Above	12.507*	2.942	.001
11-20	1-10	-8.336*	2.671	.022
	21-30	-.047	2.606	1.000
	30 and Above	4.171	2.827	.537
21-30	1-10	-8.289*	2.730	.028
	11-20	.047	2.606	-7.27
	30 and Above	4.218	2.883	.545
31 and Above	1-10	-12.507*	2.942	.001
	11-20	-4.171	2.827	.537
	21-30	-4.218	2.883	.545

Source: Field Data, 2020

The scheffe’s multiple comparison as shown in table 5 shows where the significant influence is found. The table indicates that significant influence is found with teachers who have of 1-10- and 11-20-years teaching experience, 1-10 and 21-30 years of experience and 11-20 and 21- 30 years of teaching experience. However, there was no significance influence found in the group of teachers who have 11-20 and 21-30 years of working experience and 11-20 and 30 and above years of working experience.

Null Hypotheses 2: There is no significant influence of teachers’ qualification on their test construction ability in technical colleges in Akwa ibom State.

Analysis of variance (ANOVA) was used to test this hypothesis in order to ascertain whether to reject or accept the hypothesis. The result of the analysis is presented in Table 6.

Table 6: Analysis of variance (ANOVA) statistical analysis of influence of teachers’ qualification on their test construction ability in technical colleges in Akwa Ibom State (N=342)

Qualification	Sum of Square	Df	Mean Square	F	Sig.
Between groups	9539.699	5	1707.940	6.032*	.000
Within groups	106275.306	336	316.296		
Total	115815.006	341			

*Significant at .05, *df* = 5 and 336, *F* = 6.032

Source: Field Data, 2020

The result of the analysis shown in Table 6 indicates that the significant value of .000 in the SPSS output table is less than the p-value of .05 with 5 and 336 degrees of freedom. Because the calculated p-value was less than .05, the null hypotheses which states that there is no significant influence of teachers’ qualification on their test construction ability in Technical Colleges in Akwa Ibom State was rejected, while the alternate hypotheses was retained. The result of the analysis was significant, as such there was need for post-hoc test. Scheffe post-hoc test was conducted and the result is shown in Table 7.

Table 7: Scheffe Multiple Comparisons Influence of Teachers Qualification on their Test Construction Ability Dependent Variable: Qualification

(i)Factor	(j)Factor	Mean Difference	Std. Error	Sig.
NCE	HND	10.925*	2.773	.009
	Bachelors Degree	11.273*	2.755	.006
	PGD	16.895*	3.729	.001
	Masters Degree	8.273	5.588	.822
	PhD	33.523	12.768	.232
HND	NCE	-10.925*	2.773	.009
	Bachelors Degree	.348	2.356	1.000
	PGD	5.970	3.444	.699
	Masters	-2.652	5.402	.999

Bachelors Degree	PhD	22.598	12.687	.674
	NCE	-11.273*	2.755	.006
	HND	-.348	2.356	1.000
	PGD	5.621	3.430	.748
	Masters Degree	-3.000	5.393	.997
PGD	PhD	22.250	12.684	.688
	NCE	-16.895*	3.729	.001
	HND	-5.970	3.444	.699
	Bachelor Degree	-5.621	3.430	.748
	Masters Degree	-8.621	5.949	.835
Masters Degree	PhD	16.629	12.930	.894
	NCE	-8.273*	5.588	.822
	HND	2.652	5.402	.999
	Bachelors Degree	3.000	5.393	.997
	PGD	8.621	5.940	.835
PhD	PhD	25.250	13.583	.630
	NCE	-33.523	12.768	.232
	HND	-22.598	12.687	.674
	Bachelors Degree	-22.250	12.684	.688
	PGD	-16.629	12.930	.894
	Masters degree	-25.250	13.583	.630

Source: Field Data, 2020

Table 7 indicates where the significant influence is found on qualification sub-variable. The multiple comparison indicates that the significant influence is found when comparing the response of teachers with the following qualification; NCE and HND, NCE and bachelor degree, NCE and PGD whereas there was no significant influence found with teacher who possess the following qualification when compared; NCE and Master degree, NCE and PhD, HND and Bachelors' degree, HND and PGD, HND and Masters' degree, HND and PhD, Bachelors, degree and PGD, Bachelors' degree and Masters, Bachelors' degree and PhD, PGD and Masters, PGD and PhD, and finally PhD and Masters.

Null Hypotheses 3: The third hypothesis states that 'there is no significant influence of teachers' professionalism on their test construction ability in technical colleges in Akwa Ibom State'

To test this hypothesis, independent sample t-test statistical analysis was used, the result of the analysis is presented in Table 8 below.

Table 8: Independent t-test Statistical Analysis of the Influence of Teachers' Professionalism on Test Ability in Technical Colleges in Akwa Ibom State (n=214)

Professionalism	n	Mean	Std. Dev.	df	t	Sig.
Qualification in Education	214	139.93	18.601	340	2.655*	.008
No qualification in education	128	134.527	16.961			

*Significant at .05, df = 340,

Source: Field Data, 2020

The result of the analysis as presented in Table 8 shows a t-test value of 2.655* with 340 degrees of freedom at .05 level of significance. However, the significance value of .008 in the SPSS output in table 13 is less than the acceptable p-value of .05; $p < .05$, hence the result of the analysis was significant at .05 level. With this result, the null hypothesis which states that 'there is no significant influence of teachers' professionalism on their test construction ability in technical colleges in Akwa Ibom State' was rejected whereas the alternate hypothesis was withheld. The mean difference from the t-test table shows that professional teachers perform better than non-professional teachers in the test construction ability questionnaire use in this study.

Discussion of Findings

The result from the first hypothesis tested revealed that there is a significant influence of teachers' years of experience on their test construction ability. Multiple comparison using scheffes post-hoc test indicate that the significant difference lies with teacher of 11-20 teaching experience and that of 30 and above teaching experience. Whereas, there was no significant difference when compared with teachers in other groups. The reason for this is unknown, it appears that as teachers enter into teaching profession, what they learnt concerning test construction is still fresh in their memory, at such, they are eager to practice what they learnt, and as years pass by, they need more training to remain abreast with their job; where the training is not provided, they tend to forget what was taught during test and measurement courses thus, their ability to keep on constructing a valid and reliable test instrument began to shrink down. The finding of this study was in line with the work of other scholars such as (Kosgei, *et al* 2013) who asserted that experienced teachers tend to have a richer background of experience to draw from and could contribute insight and ideas to the course of teaching and learning). The study finding also aligns with the finding of Harris and Sass (2007) who asserted that on the average, new teachers are less effective than those with some experience under their belts (Harris and Sass 2007)

The second hypothesis was subjected to testing using analysis of variance statistical analysis (ANOVA) and a post-hoc test was conducted as well. The findings from the hypothesis

tested revealed that teachers' qualification significantly influence their test construction ability. A scheffes post-hoc test was conducted to ascertain where the significant influence lies. In the multiple comparisons, it was seen that significant influence lies with teachers of HND and B.SC, MSc and PhD. and there was no significant influence when comparing teachers of other groups of certificates such as BSc and MSc, BSc and PhD, MSc and PhD. The reason for this difference may be due to the fact that teachers with HND certificate has limited or no knowledge in test construction. They are not trained in the field of Education, at such, when employed to teach, it becomes difficult for them to meet up with the challenges of understanding the teaching and learning process. This study finding was in line with findings of Unanma, Abugu, Dike, and Umeobike, (2013) who examined the relationship between teacher's academic qualifications and academic achievement of Senior Secondary School Students in Chemistry and discovered that there is a positive relationship between the variables. However, findings of Adodo (2014) does not support this study finding. The results of his study indicated that teachers' qualification and their years of experience does not have any effect on how to determine the objective of the test, constructing table of specification and evaluate students' learning outcome but there was a significant difference in teachers' gender, and their competency in evaluating sciences learning outcome.

The findings from the third hypothesis tested revealed that teachers' professionalism significantly influence their test construction ability in the study area. Professionalism is a core factor to be considered during initial hiring of teachers. This is because teachers with qualification in education tend to perform better in their assessment practices than teachers without educational qualification. It was seen that there is a significant difference on the response of the respondents when comparing teachers who have qualification in education with those who do not have.

This finding is supported by study findings of Salihu (2019) who assessed teacher ability on test construction and Economics (Tcontent) validity in Nasarawa State senior secondary schools, Nigeria. Findings of the study revealed that there was a significant mean difference in ability between professional teachers and non-professional teachers of Economics in test construction. Also supporting this study finding is Ololube (2008) who conducted a study on evaluation competencies of professional and non-professional teachers in Nigeria The results revealed that professional teachers keep records of individual students more accurately than non-professional teachers

Conclusion

Base on the findings of the study, the researcher concludes that each of the variables under consideration clearly influences teachers' test construction ability. It is thus certain that there is a significant influence of teachers' area of specialization, years of experience, gender, qualification and professionalism on their test construction ability.

Recommendations.

Based on the findings of the study, the following recommendations were set by the researcher.

- i. There is need for the Ministry of education and other educational stake holders to organize regular workshop and conference for teachers. During this teachers' workshop and conference, a reasonable section should be set aside for testing and evaluation of student
- ii. During employment of teachers, the State Technical School board should place more emphasis on those who have qualification in Education (Professional Teachers) than other educational qualification
- iii. Principals of school should set up a mechanism to check teachers test items
- iv. During test and measurements courses in the institution of high learning, lecturers should base their evaluation on practicals not only on paper pencil test.

References

- Adodo, S. O., (2014). An evaluation of secondary school Teachers' competency in evaluating Students' cognitive and psycho-motor achievement in basic Science and Technology (BST). *Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS)*, 5(3), 48-53
- Adu, E. O., Galloway, G., & Olaoye, O., (2014). Teachers' characteristics and students' attitude towards economics in secondary schools: Students' perspectives. *Mediterranean Journal of Social Sciences*, 5 (16), 455-462
- Akintomide, A. G., & Oluwatosin, S. A., (2011). Teacher characteristics and students' choice of teaching as a career in Osun State. *Choice Edo Journal of Counselling*, 1(2), 201-215.
- Akwa Ibom State technical school board (2015). *2015 Annual report*. Uyo: A publication of Akwa Ibom state technical school board.
- Alkharusi, H. A., Aldhafri, S. S., Alnabhani, H. Z., & Alkalbani, M., (2012). Factors related to teachers' analysis of classroom assessments. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 8(2), 538-541
- Alkharusi, H., (2011a). Self-Perceived Assessment Skills of Pre-service and In-service Teachers. *Journal Pendidikan Malaysia*, 36(2), 9 – 17.
- Bandele, S. O., & Oluwatayo, J. A., (2013). Assessing assessment literacy of science teachers in public secondary schools in Ekiti State. *Journal of Education and Practice*, 4 (28), 56-62.
- .Berliner, D. C., (2001). Learning about and learning from expert teachers. *International Journal of Educational Research*, 35 (1), 463-482.

- Boren, D. M., (2010). Headteacher Visibility, Teacher Characteristics, and Headteacher Trustworthiness: *Perceptions of Secondary School Teachers in Mukono District, Uganda [unpublished Masters dissertation]. University of Mukono, Uganda.*
- Boyd, D. J., Lankford, H. Loeb, S., Rockoff, J. E., & Wyckoff, J. H., (2007). "The narrowing gap in New York City teacher qualifications and its implications for student achievement in high-poverty schools." [Calder working paper 10]. Washington, D.C: The urban institute.
- Ciwar, D.C., (2007). *Code of professional ethics*. Buwa books, Lagos.
- Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L., (2006). "Teacher credentials and student achievement in high school: a cross-subject analysis with student fixed effects." [Calder working paper II]. Washington, DC: the urban institute.
- Cruickshank, M., (2003). Total quality management in the higher education sector: a literature review from an international and Australian perspective. *Total Quality Management and Business Excellence*, 14(10), 1159 -1167.
- Darling-Hammond, L., (2000). Teacher quality and student achievement: a review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1-44
- Federal Republic of Nigeria (2004). *National policy on education*. Lagos: NERDC Press.
- FGN, (2004). *National Policy on Education*. Abuja. Federal Ministry of Education.
- Green, T. L., (1996). *The teaching of biology in tropical schools*, London: Bather and Tanner.
- Harris, D. N., & Sass, T. R., (2007). "Teacher training, teacher quality, and student achievement." [Calder working paper III]. Washington, DC: The urban institute.
- Huang, F., and Moon, T., (2009). Is experience the best teacher? A multilevel analysis of teacher characteristics and student achievement in low performing schools. *Educational Assessment, Evaluation and Accountability*, 21(3), 209-234. doi: 10.1007/s1 1092-009-9074-2
- Ibe, E., Nworgu, L. N., and Anyaegbunam, N.J. (2016). Influence of teachers' characteristics on academic achievement of secondary school biology students. *British Journal of Social Science*, 13(1), 33 – 44.
- Isangedighi, A. J., Joshua, M. T., Asim, A. E., & Ekuri, E. E., (2004). *Fundamentals of research and statistics in education and social sciences*. Calabar: University of Calabar Press

- Kalogrides, R., Demetra, W., Susanna, L., & Beteille, T., (2011). *Power play? Teacher characteristics and class assignments*. Paper presented at the Annual Meetings of the Association for Education Finance and Policy. Seattle, WA, March.
- Kane, T. J., Rockoff, J. E., & Staiger, D. O., (2006). "What does certification tell us about teacher effectiveness? evidence from New York City." [working paper 12155]. Cambridge, MA: National Bureau OF Economic Research.
- Kosgei, A., Mise, J. K, Odera, O., & Ayugi, M. E. (2013). Influence of Teacher Characteristics on Students' Academic Achievement among Secondary Schools. *Journal of Education and Practice*, 4(3), 76-83.
- Ladd, H. F. (2008). "Value-added modelling of teacher credentials: policy implications" [Paper Presentation]. Second annual Calder research conference, "the ins and outs of value-added measures in education: what research says," Washington, D.C., November 21. Available at http://www.caldercenter.org/upload/sunny_ladd_presentation.pdf.
- Meece, J. L., Anderman, E. M., & Anderman, L. H. (2006). Classroom goal structure, student motivation, academic achievement. *Annual Review of Psychology*, 57(9), 487-503.
- Nuffield Foundation (2003), The role of teachers in the assessment of learning, assessment reform group. Retrieved at https://www.nuffieldfoundation.org/sites/default/files/assessment_booklet.pdf
- Ololube, N, P (2008). Evaluation competencies of professional and non-professional teachers in Nigeria. *Studies in Educational Evaluation*, 34(2), 44-5.
- Omotayo, B. K., (2014). Teacher's characteristics and students' performance level in senior secondary schools in financial accounting. *Journals of empirical studies*, 1 (2), 48-53.
- .Popham, W. J., (2009) Assessment Literacy for Teachers: Faddish or Fundamental?, *Theory Into Practice*, 48(1), 4-11, DOI: [10.1080/00405840802577536](https://doi.org/10.1080/00405840802577536)
- .Rivera, E., (2007). *Test item construction and validation: developing a state wide assessment for agricultural science education*. [Unpublished Masters dissertation] Cornell University. New York City.
- Rockstroh, A. H., (2013) "Teacher Characteristics on Student Achievement: An Examination of High Schools in Ohio". MP A/ MPP Capstone Projects. 49. https://uknowledge.uky.edu/mpampp_etds/49 Saddle River, NJ: Pearson.
- Salihu, A. G., (2019). Assessing teachers' ability on test construction and economics content validity in Nasarawa State Senior Secondary Schools, Nigeria. *International Journal of Innovative Research in Education, Technology and Social Strategie*. 6(1), 1-16

- Statham, A. Richardson, L. and Cook, J.A. (1991). *Gender and university teaching: A negotiated difference*. Albany: State University of New York Press.
- Stiggins, R. J., (2002). *Assessment Crisis: The Absence of Assessment for Learning*. Phi Delta Kappan,
- Unanma, A. O., Abugu, H. O., Dike, R. C., and Umeobike, U. C., (2013). Relationship between teachers' educational qualifications and students' achievement in chemistry: a case study of Owerri West L.G.A. *Journal of Research and Method in Education*, 4(1), 05-10
- Webb, N. L., (2006). Identifying content for student achievement tests. In S.M. Downing and T.M. Haladyna (Eds.), *Handbook of Testing* (pp. 155-180).
- Yusuf, H. T. (2015). Teachers' classroom assessment strategies and curriculum implementation in Nigerian secondary schools. *Malaysian Online Journal of Educational Management (MOJEM)*, 3(4), 50-62.
- Zhang, Z. R., and Burry-Stock, J. A., (2003). Classroom assessment practices and teachers' self-perceived assessment skills. *Applied measurement in education*, 16 (23) ,323-342.