VOL. 04 NO. 8,
MAY, 2024
E-ISSN 3026-8893
P-ISSN 3027-1061



African Scholar Publications & Research International
www.africanscholarpub.com

Journal of Education Research and Library Practice (JERLP)

AN ASSESSMENT OF TEACHERS' COMPETENCY IN TEST CONSTRUCTION ON STUDENTS' PERFORMANCE OF JUNIOR SECONDARY SCHOOLS IN JIGAWA STATE

Dr. Sani Ahmad Katsayal; Usamatu Mansur; & Muhammad Gaddafi Shu'aibu
Department of Education, Sule Lamido University Kafin Hausa, Jigawa State, Nigeria
osamaright2@gmail.com

Abstract

This study was carried out to assess the teachers' competency in test construction on students' performance of junior secondary schools in Jigawa state. Five objectives and five hypotheses were formulated to guide the conduct of the study. Survey research design was employed with population of four thousand two hundred sixty eight (4268) teachers. Three hundred and twenty seven (327) teachers were selected from the population of the study as sample for this study. The researcher adapted Teachers Construction Skills Inventory (TCSI) which was developed and validated by Agu (2013). The initial reliability index of the Teachers Construction Skills Inventory as reported by Agu (2013) was r = 0.73. Data collected was statistically analyzed by using t-test independent sample in Statistical Package of Social Sciences (SPSS) at 0.05 level of significance. The result generated from the analysis of the data that showed that there is no significant gender difference in test construction competency among teachers of JSS in Jigawa state. The result also found that there is significant difference in test construction competency among professional and non professional teachers of JSS in Jigawa State etc. Some of the recommendations given by the researcher include; government should organise frequent seminars and work shop to the JSS teachers on how to construct valid and reliable test. Government should employ professional and qualify teachers, this will rely help in overcoming of constructing invalid and unreliable tests.

Key words: Teachers' Competency, Test Construction Procedure, Teacher Made Test, Students Performance.

Introduction

Test is defined as an instrument or systematic procedure for measuring sample of behaviour either in comparison with others or in comparison with a domain of performance tasks. So the tests measure the correct status of an individual with respect to proficiency in a given area of knowledge or skills. Tests are used for the determination of an individual intellectual abilities and non intellectual traits to provides educational and vocational guidance, tests are also used to see whether a program is accomplished its goal or not and they are systematic tools of investigation of the worthy or merits (Aggawal, 2007). He also viewed test as an instrument or systematic procedure for measuring sample of behaviour ("how well does the individual perform either in comparison with others or in comparison with a domain of performance tasks"). So tests measure the correct status of an individual intellectual abilities and non intellectual traits that provide educational and vocational guidance. Tests are also used to see whether a program is accomplished its goal or not. And are systematic tools of investigation of the worthy or merits (Dodeen 2002).

Teacher made tests have been used in Nigerian secondary schools, these are the tests produce by an individual teacher for his/her students to elicit a respond with accurate and useful information about knowledge retain by students in a particular subjects. These tests plays a vital role in educational process, they aimed in the assignment of grades and have advantage of objectivity and uniformity if properly constructed. These tests also have merits such as adequacy of content covering, the tests constitute an important remedial program and they are useful in identification of students with different educational needs.

Ugodulunwa (2008) defined Teacher Made Test as tests prepare and use by classroom teachers for specific class and designed to cover smaller area of content, knowledge or skills. While Stiggins (2011) sees Teacher Made Test as oral or written assessment that are not commercially produce and they are not standardized.

Because teachers seem to lack knowledge of test construction procedures, that enable them to construct a valid and reliable tests. The quality of teacher made test is a thing of concern. Ugodunlunwa (2008) believes that goal of achievement testing is to obtain valid and reliable information about students' achievement that will guide decision making in school system. In order to achieve this goals the test need to be carefully planned and constructed. Therefore, teachers need to apply some acceptable degree of knowledge of tests construction in order to construct valid and reliable tests that will yield accurate feedback of students' achievement.

According to Anikweze (2004), feedback from well constructed Teacher Made Tests could help to improve students' performance either through the correlation given by the teacher or by learners' effort to cover the lapses that account for failure. Testing

provides feedbacks on which educational decision are made. These decisions may be the ones that require information about the success of learning programmed or about students who have particular levels of knowledge and skill. In this vein scholars believed that whatever type of information needed, educational decisions defend upon valid and reliable measures to inform those who have the responsibilities of making decision. According to Paulson (2005) lacking knowledge of test construction by teachers is one of the major cause of examination malpractice in Nigerian secondary schools. The implication is that most teachers lack competencies in test construction, and may use poorly constructed test to measure students' achievements in various school subjects. And when students' achievement level are not properly measured and interpreted, the teachers and school and administration will not be able to provide educational opportunities and support students' needs. Teachers today need to be knowledgeable consumers of test information, constructors of assessment and protocols of test procedures.

Personal experience shows that most junior secondary school teachers in Jigawa state do not follow the test construction procedures when constructing test and this has negative effects to students' performance. Tests construction has been seems to be major source of anxiety among senior secondary school teachers especially the untrained ones, this anxiety stems lack of knowledge of test construction procedures as most of the teachers in Jigawa state are not really aware and following the requisite test construction procedures when constructing tests. Ugodulunwa (2008) has the opinion that the qualities of items in Teacher Made Tests are generally unknown and very low when compared to standardized test. Invariably, the quality of Teacher Made Test will determined performance of students in the tests. And test is valid when it measures what it claims to measure; also the reliability of a test refers to consistency in measurement. This means students get approximately the same scores in repeated testing, and the rule maintained that high validity of an instrument as a rule is accompanied by reliability.

Competency of test construction refers to the ability of a teacher to construct a valid and reliable test based on the standard, that express specific expectations for assessing knowledge or skills that the teacher should possessed in order to perform well in their evaluation effort (Ololube, 2008).

While Adodo (2014) defined teachers' competency of test construction as the ability of the teacher to exhibit on the job the skills and knowledge gained as a result of training. These skills and knowledge prescribed in training programmed are apparently calculated by the curriculum planners to relate to be an instrumental to achievement of the desired education objectives.

He further ascertain that it is important to know that teachers and others associated with classroom evaluation should appreciate competency and abilities such as the appreciation of the usefulness of evaluation, the ability to construct and evaluate instruments that are capable of revealing the degree to which have attained pertinent educational objectives.

Tests as a measuring tool and a systematic procedure for observing an individual behaviour and describe it by means of a numerical way. A test is a device or a procedure for confronting a subject with standard set of questions or tasks to which the student or examinee responds independently and the results of which can be treated in such away so as to provide a qualitative comparison of performance of different students or examinees. (Aggarwal, 2007). In his other definition, test is also defined as an instrument or systematic procedure for measuring sample of behaviour either in comparison with others or in comparison with a domain of performance tasks. So the tests measure the correct status of an individual with respect to proficiency in a given area of knowledge or skills. Tests are used for the determination of an individual intellectual abilities and non intellectual traits to provides educational and vocational guidance, tests are also used to see whether a program is accomplished its goal or not and they are systematic tools of investigation of the worthy or merits (Aggawal, 2007). Anikweze (2014) viewed achievement test as an ability tests designed to measure what the individual has learned to do as a result of planned instruction. Test is not something that is done in a careless and haphazard manner, there are some qualities that are observed and analyze in a good test such as test validity, reliability etc.

Dodeen (2002) defined Teacher Made Test as a test developed, made designed and constructed by the teacher to measure general and specific behavior (achievement) of learners within classroom setting. Test is the basis of evaluating the progress of students in classroom situation, and has greater value to the teacher himself, the students, the parents and the school administration. This type of test can be used to provide recognition and reward for success in the teaching and learning process. It can be also used to motivate and direct effort to learn.

Aggarwal (2007) believed that Teacher Made Test attempt to assess comprehensively the extent or degree of students' progress with regard to classroom activities, motivate the students, simple to use and provide information which is the basis for a report on progress of students. When these tests is given, it enable the teacher to identify the weakness of students and provides them with information which can be use to improve their performances.

Race (2005), believes that Teacher Made Test allow teacher to check out how well the students are developing, gives feedback on how teaching is structured and organized and provide constructively align learning outcomes for assessment.

Uses of Teacher Made Tests

Teacher Made Tests are very important in educational evaluation considering the significant role it plays. Anikweze (2014) identified four major important of Teacher Made Test in education as follows:

1. Motivation of learners: Since tests often influence and sometimes determine when. What and how students study, they have motivational effects. Further feedback from well constructed Teacher Made Tests could help to improve students' performance.

2. Diagnosis and instruction: Teacher Made Tests are often applied as diagnostic tools during instruction to discover students' strengths and weaknesses and source of difficulty, in order to

plan remedial help to students. Item analysis after the tests help teacher to determine the effectiveness of his/her instruction and hence establish a more realistic sequence of dealing with learning task in the classroom.

3. Defining teacher objective: Teacher made tests help to determine the instructional objectives set up by the teacher through formative and summative evaluation.

4. Differentiation of students: The score or performances of students in achievement tests help the classroom teacher to differentiate students for particular purposes such as placement for science, arts, and technical groups etc. Base on the line of intellectual ability of the students as classified by the scholars like above average, average and below average.

a. Identifying students' strength and weaknesses on specific units of instruction.

Qualities of Tests.

The three most important considerations in evaluating quality of good test are validity, reliability and usability (Ugodolunwa, 2008). But Shutttle (2009) added objectivity and interpretability among the psychometric properties of a good test. Anikweze (2014) added other qualities such as the item difficulty, discrimination and distracters indices which are established through item analysis.

Tests Validity.

Validity of a test is the degree to which a test measures what it claims purports to measure (Dodeen, 2002). In conventional usage, validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Babbie, 2005).

The validity of a test suggests the degree to which a test measure adequately and sufficiently a particular skill or behaviour it set out to measur**e.**

Types of validity.

There are different types of validity defending on the kind of tests or the time referent of test outcome and also depending on conformance with the literary meaning (Anikweze, 2005). Test validity is the most important quality of educational tests. Schoolars and reseachers such as Babbie (2005), Ugodolunwa (2008) and Anikweze (2014) identified different types of validity as Face validity, content validity, criterion validity, criterion-related validity, construct validity.

a. Content Validity

Content validity is the comprehensiveness of the instrument in covering the content area that has been treated during instruction (Anikweze, 2005). Megafu (2010) viewed content validity as the extent to which items in a test are representative of a defined content area under consideration.

Content validity is determined through judgment of expert who is proficient and knowledgeable in skills being measure (Ugodolunwa, 2008). A test has content if it measures

knowledge of the content domain of which it was designed to measure. Content validity concerns primarily with the adequacy which the test items adequately and representatively cover by the sample of the content area to be measure.

b. Face Validity

The face validity is validity defends on the judgement of the external observer of the test, and to the degree to which the test appears to measure the knowledge based on the external observer. Usually it tells how clear the instruction, how well the test structured, how consistent the numbering are, etc. Ugodolunwa (2008) opined that face validity is not a type of validity in technical sense but a set should properly word and presented to look attractive to the testee. Anikweze (2014) Viewed face validity as the appropriateness of the test in relation to the course on which the test is based. He added that this type of validity is determined through the consensus of opinions of specialist in judging whether; (1) the right objective have been chosen for instruction and (2) the right item have been chosen for testing. This type of validity is based on logical view or judgment of the test items by specialist. Face validity face validity is sometimes refers to as "rational or logical validity".

c. Criterion Related Validity

Criterion-related validity is concern with a test that designed to predict someone's status on an external criterion measure. This type of validity is of two type namely concurrent validity and predictive validity. Concurrent validity refers to extent to which testee current test score can be used to predict the testee' current criterion score. While predictive validity it refers to how accurately a person's current test score can be used to estimate what the criterion score will be at a later time (Ugodolunwa, 2008).

d. Construct Validity

Dodeen (2002) explained that construct validity is a psychological quality that is assumed to exist in order to explain some aspect of behaviour.

Construct validity refers to how a given test actually described an individual in term of a given traits e.g. a test which mean to test feminity should show women performing better than men in a given tasks usually associated with women, if it is not so, then the assumption on which the test made are not valid.

Reliability of a Test

Reliability of a test means, the ability of a test to measure what it claims to consistently (Ugodolunwa). If students get similar score on the same test in different occasion this suggest that the test is reliable. Reliability refers to the consistency of a measure. A test is considered reliable if elicit the same result repeatedly (Stiggins, 2011). While Babble (2005) viewed reliability as that quality of measurement method and suggests that the same data would have been collected each time repeated observations of the same phenomena. He added that, in the abstract, reliability is a matter of whether a particular technique applied repeatedly to same object yield the same result each time.

Methods of Estimating Test Reliability.

There are various methods of estimating reliability which are established using different method. The different types of reliability are: test retest, alternate or equivalent reliability, alternate and stability split half and inter rater reliability (Bosson, 2007).

Test Retest Reliability: This is a type of reliability where by a tests is administering to the same group on different occasion. The correlation of two sets of scores is then calculated. This reliability measure the consistency over time of the subject's performance. If the is a variation in the measurement between the first and second administration, then the correlation and the reliability will be low.

According to Bosson (2007), the value of correlation will also vary with the length of time between administrations under normal circumstances, a longer time interval will result in a lower correlation.

Estimate of Alternate Form Reliability

In alternate form of reliability here two equivalent tests of different content are given to the same students on different occasion. The two set tests should be comparable in term of content and difficulty and administered in close succession and correlate the test scores obtained to find an index of equivalent form of coefficient of reliability.

Estimate of Stability and Alternate Forms Reliability

The estimate of stability and alternate is obtained when different forms of test are administered after a time interval. The coefficient of reliability obtained is a measure stability of equivalence. This type of reliability estimate take care of the problem of selecting appropriate time interval between first and second administration of the same test as required in test retest method.

Estimate of Internal Consistency

The estimate of internal consistency reliability focuses on the homogeneity of item constituting the test. This method requires only one administration of test and it should not used in speeded tests in which the testee only have time to complete the test.

Estimate of Score or Inter Rater Reliability

Scorer or rater reliability is a measure of agreement among a given number of scorers or observers, who mark or scores the same test items or rate observed behaviors' of students. The correlation coefficient obtained through the use of this method is referred as inter rater or inter scorer.

Split-Half Reliability

Split-half reliability this where by a test is split into two equivalent sub test using odd and even number items. The two half test score are correlated with one another across the group of candidate that took the test. Spearman Rank order correlation method is used to obtain the split half correlation coefficient.

Procedures of Test Construction

The aim of every test is to have valid and reliable information about the performance of students for making decision. Well written test allows the teacher to accurately and consistently measure student's mastery of the contents taught in the classroom during the course instruction.

Frey (2007) believed that the results of such tests allow the classroom teacher to measure some degree of how effective these instructions have been. Likewise poorly constructed test can leads to inaccurate measure of learning outcome and provides false information regarding students' performances well as the effectiveness of instruction. Any characteristics of test item which distract the examinee from the major point or focus reduces the effectiveness of the item. He also opined any item answered correctly or incorrectly because of extraneous factors in the item results in misleading feedback to both examinee and examiner (Frey, 2007).

Whether a test is good or bad as a measuring instrument it depends on the item or question that make up the test (Anikweze, 2014). In order to have a valid, reliable and usable test, the test needs to be carefully planned and constructed. As such scholars in test and measurement provide sequential steps and procedures to be adopted in constructing tests. Aggarwal (2007) opined that, it is vital to consider the following procedures when constructing classroom tests:

- Determine the purpose of test.
- Outline the contents/topics to be covered by the test.
- Outline the instructional objectives.
- Develop a table of specification.
- Select appropriate item format.
- Written relevant test items
- Assemble the test item.

Teachers' Competency of Tests Construction

Competency of test construction refers to the ability of a teacher to construct a valid and reliable test based on the standard, that express specific expectations for assessing knowledge or skills that the teacher should possessed in order to perform well in their evaluation effort (Ololube, 2008).

While Adodo (2014) defined teachers' competency of test construction as the ability of the teacher to exhibit on the job the skills and knowledge gained as a result of training. These skills and knowledge prescribed in training programmed are apparently calculated by the curriculum planners to relate to be an instrumental to achievement of the desired education objectives.

He further ascertain that it is important to know that teachers and others associated with classroom evaluation should appreciate competency and abilities such as the appreciation of the usefulness of evaluation, the ability to construct and evaluate instruments that are capable of revealing the degree to which have attained pertinent educational objectives.

The nature of Teacher Made Test is that the construction is limited to the resources and competence of particular teacher or group of teachers (Ugodolunwa, 2008).

Students who perform wonderfully in the teacher made test are expected to perform well in the standardized test equally, such as Placement Examination, West African Examination Council (WAEC), National Examination Council (NECO), National Board for Arabic and Islamic Studies (NBAIS) and any other standardized tests which happen at the end of every secondary education (Ejiogu, & Iteddreje, 2016). But unfortunately Agu (2013) observed that the performance of senior secondary students that performed well in classroom based assessment revealed a 75% failure rate in the standardized assessment in recent years.

Statement of the Problem

There is a great concern with regard to the knowledge of teachers in test construction procedures in junior secondary school in Jigawa state being these teachers are the producers of teacher made achievement tests for determining the performance of students. The quality of these tests is a point of concern. As most of the junior secondary school teachers lack this knowledge that enable them to construct valid and reliable test which often considered as a cause of failure in promotional and standard examination, this happened as a result of lack of accurate planning, writing and analysis of relevant tests item to be included in the tests.

Failure in examination indicates the need for determining the quality of every test with the aim of recommending the incorrect ones for improvement. Most junior secondary school teachers do not possesses the tests construction procedures in Jigawa state, so there is need of the teachers in the state to acquired and be conversant with the test construction procedures in order to construct valid and reliable test. However, in most cases the tests constructed by different subject teachers are usually in accurate in terms of items analysis, table of specification; as such the construction of test is based on their common sense of the individual teacher to which damage the defined procedures of test construction and really influence the students' performance.

Teachers need to be expert in educational measurement and evaluation to construct valid and reliable tests to the students. The performances of students in any test depend largely on how teachers developed the test, and these defend on knowledge of teachers in procedures of test construction. Also any performance of students in test either good or bad, the teachers' knowledge in test construction has significant influenced. Ugodunluwa (2008) opined that teachers ought to know or possess the procedures of test construction such as: purpose of test, outline the instructional objectives, outline the content or topics, developing a table of specification, selecting appropriate item format, writing relevant test items, assemble the test items etc.

In view of the above there is necessity of investigating the teachers' competency in test construction procedures of junior secondary schools in Jigawa state.

Methodology

This study was conducted using survey research design with population of two thousand two hundred and sixty eight (4268) teachers. Three hundred and twenty seven (327) teachers were selected from the population of the study as sample for this study. The researcher adapted Teachers Construction Skills Inventory (TCSI) which was developed and validated by Agu (2013). The initial reliability index of the Teachers Construction Skills Inventory as reported by Agu (2013) was r = 0.73.

In establishing construct validity of Teachers Construction Skills Inventory, convergent validity, that is, one of the ways in which construct validity of a measurement established, were utilized. Convergent validity refers to the degree to which two measures of a construct that theoretically should be related are in fact related (Anastasi & Urbina, 2010). Construct validity is usually estimated using correlation coefficient. In order to establish the convergent construct validity of this TCSI, a TCSI developed by Agu (2013), was highly correlated with TCSI developed by Dodeen (2007). The two Teachers Construction Skills Inventory were administered concurrently on randomly selected 20 teachers from others senior secondary out of sample of the study in Jigawa State. Scores of the two Teachers Construction Skills Inventory were correlated and a correlation coefficient was r= 0.79. This shows a strong evidence of the construct validity of the instrument.

In order to find out the reliability of the data collection instrument a pilot testing was conducted using 20 teachers from senior secondary schools out of sample of the study. Cronbach alpha was calculated in order to establish internal consistency of items. The alpha was found to be 0.81 indicating strong significant internal consistency of test items.

In analysing the data, the researcher employed t-test independent sample statistical inference to answer the hypotheses considering the nature of the variables of the study i.e. male and female teachers, professional and non professional teachers etc.

Objectives of the Study

The study aimed to achieve the following objectives:

1. To find out if there is gender differences in test construction competency among teachers of JSS in Jigawa state.
2. To investigate if there is difference in test construction competency between professional and non-professional JSS teachers in Jigawa state
3. To investigate if there is difference in test construction competency between public and private JSS in Jigawa state
4. To investigate if there is difference in test construction competency between science teachers and non non-science teachers of JSS in Jigawa state
5 To investigate if there is difference in test construction competency between urban and non rural teachers of JSS in Jigawa state

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant gender difference in test construction competency among teachers of JSS in Jigawa state.
2. There is no significant difference in test construction competency between professional and non-professional JSS teachers in Jigawa state.
3. There is no significant difference in test construction competency between public and private JSS teachers in Jigawa State.
4. There is no significant difference in test construction competency between science teachers and non-science teachers of JSS teachers in Jigawa state.
5 There is no significant difference in test construction competency between urban and rural JSS teachers in Jigawa state.

Significance of the Study

The essence of this study is to investigate junior secondary school teachers' competency in test construction as the constructors of Teacher Made Test for school assessment. Teacher Made Test has to be valid and reliable; especially when important decisions are to be based on their results; this result plays a vital role in evaluation of teaching-learning processes. Therefore, there is a need of teachers to adequately prepare tests with set of knowledge construction procedures in order to have a comprehensive evaluation in academic activities, that will enhances educational development in Jigawa state.

In view of the above, the study will help JSS teachers in Jigawa state to reappraise their quality of Teacher Made Test used for assessment, and to find out the area of incompetency of teachers in test construction, so that they will modify to yield better result. The study will expose and identify the level of teachers' knowledge of test construction procedures, by revealing the extent to which teachers follow the appropriate and effective procedures when constructing tests. In fact, the result of this study help to discover teachers with appropriate knowledge of test construction and their preparedness in the general evaluation of educational sector in the Jigawa state.

The study will also motivates the state Government through the ministry of education, stake holders and philanthropist in the educational policy making, to introduce programmes such as workshops for the teachers with deficiency knowledge of test construction so as to improve their competency in test construction.

Furthermore, the study will enable the state Government to know the capacity of junior secondary school teachers in test construction procedures, and emphasize on employing professional teachers and encourage in service training of teachers.

Also the study will be utmost important to be use as basis for further research in the same and beyond.

Results

Test of Hypothesis One

There is no significant gender difference in test construction competency among teachers of JSS in Jigawa state.

Table 1: Gender Differences in the Test Construction Competency.

Gender	N	Mean	S D	t-value	df	p-value
Male	**227**	**57.55**	**4.51**	**.308**	**325**	**.513**
Female	**100**	**56.40**	**6.36**			

In order to test the null hypothesis that there is no significant gender difference in test construction competency among teachers of JSS in Jigawa state an independent sample of t-test was performed. From table 1 the mean on test construction competency for each group was M=57.55 for male teachers and M=56.40 for female teachers. The results revealed that the mean score on test construction competency for male teachers of JSS (M =57.55, SD= 4.51) is not significantly different from that of the mean score of female JSS teachers (M=56.40, SD=6.36) at t-value (t=.308, df=325, p=.513). Thus, our P value .513 is > .05.
Based on the obtained result, the stated null hypothesis that there is no significant gender difference in test construction competency among teachers of JSS in Jigawa state was upheld. The result revealed that no statistically significant gender difference in test construction competency among teachers of JSS in Jigawa state.

Test of Hypothesis two
There is no significant difference in test construction competency between professional and non-professional JSS teachers in Jigawa state.

Table 2: Difference in Test Construction Competency among professional and non professional teachers of JSS in Jigawa State.

Qualification	N	Mean	S D	t-value	df	p-value
Professional	**167**	**78.77**	**6.41**	**.208**	**325**	**0.02**
Non Professional	**160**	**76.80**	**8.57**			

In order to test the null hypothesis that there is no significant difference in test construction competency between professional and non professional JSS teachers in Jigawa state an independent sample of t-test was performed. From table 2 the mean on test construction competency for each group was M=78.77 for professional teachers and M=76.80 for non professional teachers. The results revealed that the mean score on test construction competency for professional teachers of JSS (M =78.77, SD= 6.41) is not significantly different from that of the mean score of non professional JSS teachers (M=76.80, SD=8.57) at t-value (t=.208, df=325, p=.02). Thus, our P value .02 is less than .05.
Based on the obtained result, the stated null hypothesis that there is no significant difference in test construction competency between professional and non-professional JSS teachers in Jigawa state was rejected. The result revealed that there is statistically significant difference in test construction competency among professional and non teachers of senior secondary schools in Jigawa state.

Test of Hypothesis Three

There is no significant difference in test construction competency between public and private JSS teachers in Jigawa state.

Table 3: Difference in Test Construction Competency among public and private JSS in Jigawa State.

School type	N	Mean	S D	t-value	df	p-value
Public Schools	**167**	**69.07**	**7.25**	**.518**	**325**	**0.000**
Private Schools	**160**	**76.60**	**6.17**			

In order to test the null hypothesis that there is no significant difference in test construction competency between public and private JSS teachers in Jigawa state an independent sample of t-test was performed. From table 3 the mean on test construction competency for each group was M=69.07 for public JSS teachers and M=76.60 for private JSS teachers. The results revealed that the mean score on test construction competency for public JSS teachers (M =69.07, SD= 7.25) is not significantly different from that of the mean score of private JSS teachers (M=76.60, SD=6.17) at t-value (t=.518, df=325, p=.0000). Thus, our P value .02 is less than .05.

Based on the obtained result, the stated null hypothesis that there is no significant difference in test construction competency between public and private JSS teachers in Jigawa state was rejected. The result revealed that there is statistically significant difference in test construction competency among public and private teachers of JSS in Jigawa state.

Test of Hypothesis Four

There is no significant difference in test construction competency science and non science JSS teachers in Jigawa state.

Table 4: Difference in Test Construction Competency among Science and non Science JSS in Jigawa State .

Type of Teachers	N	Mean	S D	t-value	df	p-value
Science Teachers	**167**	**65.70**	**5.15**	**.464**	**325**	**0.000**
Non science teachers	**160**	**66.30**	**7.29**			

In order to test the null hypothesis that there is no significant difference in test construction competency between science and non science JSS teachers in Jigawa state an independent sample of t-test was performed. From table 4 the mean on test construction competency for each group was M=65.70 for science JSS teachers and M=66.30 for non science JSS teachers. The results revealed that the mean score on test construction competency for science JSS teachers (M =65.70, SD= 5.15) is not significantly different from that of the mean score of non science JSS teachers (M=66.30, SD=7.29) at t-value (t=.464, df=325, p=.0000). Thus, our P value .0000 is less than .05.

Based on the obtained result, the stated null hypothesis that there is no significant difference in test construction competency between science and non science JSS teachers in Jigawa state was rejected. The result revealed that there is statistically significant difference in test construction competency among science and non science teachers of JSS in Jigawa state.

Table 5: Differences in the Test Construction Competency among Urban and Rural JSS Teachers in Jigawa State.

Teachers location	N	Mean	S D	t-value	df	p-value
Urban	**227**	**55.55**	**4.11**	**.614**	**325**	**.718**
Rural	**100**	**46.40**	**5.18**			

In order to test the null hypothesis that there is no significant difference in test construction competency among rural and urban teachers of JSS in Jigawa state an independent sample of t-test was performed. From table 5 the mean on test construction competency for each group was M=55.55 for urban JSS teachers and M=46.40 for rural JSS teachers. The results revealed that the mean score on test construction competency for urban JSS teachers of JSS (M =55.55, SD= 4.11) is not significantly different from that of the mean score of rural JSS teachers (M=46.40, SD=5.18) at t-value (t=.614, df=325, p=.718). Thus, our P value .513 is > .05.
Based on the obtained result, the stated null hypothesis that there is no significant difference in test construction competency among rural and urban teachers of JSS in Jigawa state was upheld. The result revealed that no statistically significant difference in test construction competency among urban and rural teachers of JSS in Jigawa state.

DISCUSSION OF FINDINGS

This section discussed the finding of five hypotheses. As predicted in hypothesis one, there is no significant gender difference in test construction competency among teachers of JSS in Jigawa state. In testing this hypothesis, teachers' responses on questionnaire were used as data for analysis, and t-test independent sample was also used as data analysis tool. The null hypothesis was upheld. This indicated that there is no significant gender difference in test construction competency among teachers of JSS in Jigawa state. This finding corroborates with finding of Darazo (2015), which conducted a research on assessment of senior secondary school teachers' knowledge of test construction procedures in Gombe state. Correlation research design was employed. The population of the research were all teachers of (116) senior secondary school teachers in the state, but eleven senior secondary schools were used as sample of the study. Test Construction Skills Inventory (TCSI) was used as instrument for data collection with reliability of 0.73. Mean score was used for the research question and t-tests independent sample was used in testing the hypotheses of the research. The result indicated that there is significant difference between male and female teachers,
But for hypothesis two, the result indicated that there is significant difference in test construction competency among professional and non professional teachers of JSS in Jigawa

State. This finding did not corroborates with the finding of Darazo (2015) which found that there is no significant difference between qualified and unqualified teachers in the knowledge test construction procedure.

For hypothesis 3, the stated null hypothesis that there is no significant difference in test construction competency between public and private JSS teachers in Jigawa state was rejected. The result revealed that there is statistically significant difference in test construction competency among public and private teachers of JSS in Jigawa state. Also for hypothesis 4, the stated null hypothesis that there is no significant difference in test construction competency between public and private JSS teachers in Jigawa state was rejected. And for hypothesis 5, the stated null hypothesis that there is no significant difference in test construction competency among rural and urban teachers of JSS in Jigawa state was upheld. The result revealed that no statistically significant difference in test construction competency among urban and rural teachers of JSS in Jigawa state.

CONCLUSION

Based on the result generated from the analysis of the data, it was concluded that there is no significant gender difference in test construction competency among teachers of JSS in Jigawa state. The result also found that there is significant difference in test construction competency among professional and non professional teachers of JSS in Jigawa State. For hypothesis 3, the stated null hypothesis that there is no significant difference in test construction competency between public and private JSS teachers in Jigawa state was rejected. Also for hypothesis 4, the stated null hypothesis that there is no significant difference in test construction competency between public and private JSS teachers in Jigawa state was rejected. And for hypothesis 5, the stated null hypothesis that there is no significant difference in test construction competency among rural and urban teachers of JSS in Jigawa state was upheld.

RECOMMENDATIONS

In the light of the research findings, the researcher has made some recommendations as follows: 1. Government should organise frequent seminars and work shop to the JSS teachers on how to construct valid and reliable test.

2. Government should employ professional and qualify teachers, this will rely help in overcoming of constructing invalid and unreliable tests.

References:

Adodo, S.O. (2014). An Evaluation of Secondary School Teachers' Competency in Evaluating Students' Cognitive and Psychomotor Achievement in Basic Science and Technology (BST). *Journal of Emerging Trends in Education Research and Policy Studies* 5(3): 48-53, Jeteraps. http://www.schlolarlinkresearch.com Retrieve on November 10, 2019.

Aggarwal, J.C (2007). *Essentials of Examination System: Evaluation, Test and Measurement* 4th edition : Vikas pulishing pvt (ltd) a-22 sector Nonda (up) Jangpura.

Agu, N.N. (2013). Measuring Teachers' Competencies in Constructing Classroom-Based Tests in Nigerian Secondary Schools: Need for a test Construction Skill Inventory.

Anastasi, A., & Urbina, S. (2010). *Psychological Testing*. 7th edition. PHI Learning Private Limited.

Anikweze, C. M. (2014). *Measurement and Evaluation for Teacher Education* 3rd edition. Constellation (Nig) publishers.

Anastasi, A., & Urbina, S. (2010). *Psychological Testing*. 7th edition. PHI LearningPrivate Limited.

Dodeen, H. (2007). Assessing test-taking strategies of University students: Developing a scale and estimating its psychometrics indices. London: Routled Publishers.

Olulube, N.P. (2008). Evaluation Competencies of Professional and non Professional Teachers in Nigeria, Studies in Educational Evaluation (SES), 34(1)44-5.

Paulson, T.U. (2005). *The Study of Teaching.* Holk, Rinehart and Winstin Inc.

Stiggins, A.Y. (2011). Academic Motivation. It is determining factor and guidelines for Intervention. Wesley Publishing Company.

Ugodunwala. C.A. (2008). *Fundamentals of Educational Measurement and evaluation*. Fab Educational Books.