

**ASSESSMENT OF TEST SCORING KNOWLEDGE OF LECTURERS IN TERTIARY INSTITUTIONS IN ZAMFARA STATE, NIGERIA****Sani, Sadiya Hamza<sup>1</sup> and Usman, Bashir<sup>2</sup>**<sup>1</sup>Faculty of Education, Education Department, Bayero University, Kano.<sup>2</sup>Quality Assurance Service Department, Ministry of Education H/Q Gusau, Zamfara State**ABSTRACT**

Scores in tertiary institutions act as bench mark for determining proportion of students' learning outcome, placement and graduation. This study assessed test scoring knowledge of tertiary institution lecturers in Zamfara State. The study determined proportion of lecturers with high, moderate and low scoring knowledge. It also finds out whether significant differences exist in lecturers' tests scoring knowledge by field of knowledge. The study answered one research question and tested one hypothesis at 0.05 level of significance. Population of this study consists of 300 lecturers in Zamfara State that were sampled through multi stage sampling. Survey design was employed for the study. An adapted instrument titled Teachers Test Scoring Scale (TTSS) was used for data collection. Similarly, out of 300 instruments administered to lecturers only 289 were retrieved, yielding 96.3% response rate. ANOVA was used for data analysis. The study result revealed that 13% of lecturers were ranked having high knowledge of test scoring, 66% moderate and remaining 21% have low knowledge of test scoring. The finding also revealed that there is no significant difference in lecturers' test scoring knowledge by field of knowledge. From the finding it was recommended that in-service training, workshop, monitoring of assessment from test construction to test scoring and assessment policy such as preparing marking scheme can improve credibility in test scoring. Hence, enhance accurate and consistent students' test scores.

**Keywords:** *Test Scoring Knowledge, and Lecturers' Field of Knowledge.*

## INTRODUCTION

Tertiary institutions were established for the purpose of post-secondary school teaching and learning. In order to ascertain whether or not learning has taking place, lecturers try to evaluate students. This process of evaluating learners is commonly known as assessment. It is the process by which lecturers collect data about overall learning progress for students' promotion, placement and graduation. Evaluating students' learning progress and achievement is determine using scores obtained from instrument known as Test. The Federal Republic of Nigeria, (FRN, 2004) recognized the importance of test in certification of tertiary institution students when it stated succinctly that; certification of tertiary institution students shall be based on overall test scores obtained by them from series of continuous measurements and judgment in form of end-of semester examination. Test scoring is therefore an essential component of assessment that is gaining increasing attention in education in recent years. Educational researchers now recognized that test scoring knowledge act as instrument through which both lecturers and students can benefit enormously. Sidhu, (2005) put forth that "scoring is a relative judgment of student's item response". It is an aspect of testing that has to do with making judgment about response to test items and assigning numerical values to the responses. In particular, Sidhu, (2005) point out the functions of test scores is to provide feedback to lecturers and students regarding extent to which instructional objectives are achieved, account to parent on the achievement and progress of their children, help in identifying student academic areas of strength and weakness and determining students' promotion, placement and graduation. The role of scores is very important as tertiary institution rely on them to account for students' learning outcome. Test scores do not only provide extent of mental ability of learners in tertiary institutions. Rather it provides extent of other aspect of human behavior such interest and attitude. From the point of view of lecturer's knowledge of other aspect of behavior places them in a strong point to utilize such information for educational and vocational purposes. Lecturers function not only as instructors but counselors and psychologist, using test scores they assist students whose performance are affected by attitude and interest with counseling advice like inter faculty, change of course, deferring program or even withdrawal. Hence, test scores have become an important aspect of our educational culture that both lecturers and students attach great importance not only to scores but also how the scores were

conducted and the relationship between the scores and grades that are awarded. Meanwhile, according to Osuji, Okonkwo, & Nnachi, (2006) there are different tests scoring techniques, and the use of a particular technique is determined by examinee freedom of expression. Multiple choice tests are scored via: Strip key; in this method answers to tests items are scored by direct comparison of the examinees answer with the marking keys. Scoring stencils: this is prepared by pending holes on blank answer sheet where the correct answers are supposed to appear. Scoring is then done by laying the stencils over each sheet and numbers of answers checks through the holes are counted. Machine Scoring: this involved scoring students response with computer and other possible scoring devices using certified answer keys prepared for the tests item. While essay tests are scored through: analytical or point method: in this method each answer is compared with already prepared ideal marking scheme (scoring key) and marks are assigned according to the adequacy of the answer. Global method: In this method examiner first sort the responses into categories of varying quality base on his general impression on reading the responses. The motivation behind this study is to seek whether lecturers are equipping with efficient and appropriate test scoring knowledge that will enable them evaluate student fairly and effectively.

However, the consistency of any education system especially tertiary institution relies upon the quality and competence of lecturers, hence become the most important factor in tertiary institution system. This is because they are the main focus in learning process and outcome of learning depend on lecturers. Meanwhile, students learning cannot be complete until when their taught are assessed through test, otherwise known to be the systematic method of gathering data that will be use to judge students' level or degree of performance. Test undergo construction, administration and scoring and the later which is the area of concern require possession of sufficient and appropriate skill and knowledge in selecting and employing consistence and appropriate scoring strategies. The National Council on Measurement in Education (NCME) have developed standards for Educational Assessment, among the standard is describing the knowledge and skills of selecting and employing appropriate scoring strategies. Meanwhile knowledge of test scoring among lecturers can vary as a result of many factors some of which are their field of knowledge, qualification and years of working experience. Others include age, gender, attitude, perception and competence among others.

However, in this study, lecturers in tertiary institutions differences based on areas/field of specialization is focused. These areas are commonly known as field of knowledge some of which are education, engineering, humanities, sciences as well as social and management sciences among others. Of all these areas only lecturers from the field of education acquire pre-service assessment training. Even though, in some cases in-services assessment training is provided as capacity development. Nonetheless, both the former and the later are basic and insufficient.

However, from personal experience tertiary institution lecturers in Zamfara State seem to have insufficient test scoring knowledge; they rather score students' test script without adopting any scoring technique and without developing marking scheme. They also fill reluctant in going through any requisite procedure of test scoring. Past researches have shown lack of adequate knowledge base regarding the test scoring strategies; limited training in assessment and failure to employ and adhere to measurement guideline learned in pre-service/in-service measurement courses. Perhaps, insufficient test scoring knowledge affects tertiary institution assessment process by hindering determining students learning outcome and will go long way to establish student mistrust and unacceptability of scores from lecturers. Similarly, it affects Cumulative Grade Points Average (CGPA) earn by students after graduation, that is error score which may be higher or lower than the true score, this can have serious implication as qualified applicant is rule out for being accepted for a job and lead to incorrect job placement to applicant who lack required skills. Hence, this research determines proportion of lecturers with high, moderate and low-test scoring knowledge and also investigates test scoring knowledge differences (if any) on lecturer's field of knowledge.

The result of the studies makes an input in the present state of tests scoring knowledge in tertiary institutions of Nigeria. It helps tertiary institutions determine the existence or other wise of inadequate scoring knowledge among their lectures and need for in-service training on assessment practice. And also, the result of this studies encourages tertiary institution to enforce rigorous use of assessment skills through ensuring that lecturers have the necessary knowledge, skills and attitude on marking/scoring tests which is important in improving assessment practice. The outcome of this studies provides additional knowledge of establishing valid, reliable, accurate test scores, which go long way to establish student trust and acceptability of scores from lecturers. The

result of this study probably convinced student, parents and the general public that the cumulative grade points awarded to students (CGPA) can be valid. The study also adds to body of knowledge on scoring/marking at school level and how lecturers should mark or score tests.

The study was conducted in Zamfara State of Nigeria, and the scope cover all lecturers of university, colleges of education and polytechnics in the state with different qualification and field of knowledge, as well as years of working experience. Furthermore, the study focuses on investigating lecturers' test scoring knowledge proportion. Theoretically, Classical Test Theory (CTT) was use for the study, due to its relevance to test scoring.

The study excluded variables like age, teaching subject and gender. Similarly, the study also excluded Monotechnic lecturers (such as College of Health Technology Tsafe, School of Nursing and Midwifery Gusau, College of Agricultural Science Bakura, etc.) in Zamfara State, it also excluded lectures of Distance learning institution such as National Open University of Nigeria (NOUN), National Teachers Institution (NTI) as well as Lecturers of Private tertiary institution in Zamfara State. Item Response Theory (IRT) was delimited from the study.

### **Objectives of the Study**

The objectives of the study were to determine:

- i. The proportion of lecturers with high, moderate and low-test scoring knowledge in Zamfara State.
- ii. The test scoring knowledge among lecturers of different field of knowledge in Zamfara State.

### **Research Question**

The study answered this research question.

- i. What is the proportion of lecturers with high, moderate and low-test scoring knowledge in Zamfara State?

### **Research Hypotheses**

The following hypothesis were formulated and tested at 0.05 level of significance

- i. There is no significant difference in mean score of test scoring knowledge among lecturers of different field of knowledge i.e., education, engineering, humanities, science, social and management science.

## **METHODOLOGY**

Survey design was used for this study. This is because survey designs are procedure in quantitative research that gathers data form sample of population to represent entire population at a particular point in time with intention of describing the nature of existing condition or identifying standard condition that can be compared (Cohen, Manion & Morrison, 2007). Therefore, it enables the researcher gather descriptive data from sample of lecturers to enable generalization on the entire lecturers in the study area about their test scoring knowledge. Survey design also enable the researcher find out whether test scoring knowledge differences exist among lectures based on field of knowledge, qualifications and years of working experience.

The population of the study comprises all lecturers in Zamfara State. According to Zamfara State Directorate for Higher Education (2020), they were one thousand nine hundred and eighteen (1918) lecturers (comprising of males 1542 and 376 females) from tertiary institution in Zamfara State. This shows that about 80% of the lecturers were male, while 20% were female. The lecturers in university were six hundred and three (603 [32%]), colleges of education, five hundred and ninety-seven (597 [31%]) and polytechnics, seven hundred and eighteen (718 [37%]). The lecturers are of different in field of knowledge, qualification, and years of working experience. A sample size of 300 was used in this study based on the recommendation of Research Advisors (2006) table for determination of sample size. In drawing sample size, multi-stages sampling technique was used in this study. This is because multi-stage sampling entails two or more stages of random sampling based on hierarchical structure of natural clusters within the population (Sedgwick, 2015).

‘Teachers Test Scoring Scale (TTSS)’ designed by Sani (2014) was adapted as instrument of data collection. The instrument was adapted because of its relevance in determining tests scoring knowledge. TTSS was subjected to Content Validity Index (CVI) by administering it to panel of ten (10) experts for determining degree of item relevance using four scales of relevance Index

which revealed average proportion of relevance across all items (S-CVI/Ave) as .95 and average of universal agreement across all items (S-CVI/UA) as .88, and thus considered valid.

Similarly, TTSS was pilot tested to thirty (30) lecturers through Test-retest reliability. The scores were correlated, and reliability coefficient of .86 was obtained using Pearson product Moment Correlation (PPMC). Hence, considered relative strong and highly reliable in assessing lecturers test scoring knowledge.

The data of this study was analyzed using Statistical Package for Social Sciences (SPSS version 25). The research question was answered using descriptive statistics in the form of frequency count and simple percentages. Three hypothesis was tested using inferential statistics in the form of ANOVA. According to Cohen, Manion & Morrison, (2007) ANOVA is premised on the same assumption as t-test, that is random sampling, normal distribution of scores, homogeneity of variance, parametric data and it can be used with three or more groups.

### **Results of the Finding**

The data collected for the study covered the following: distribution of respondents by field of knowledge.

#### **Distribution of Respondents by Field of Knowledge**

<b>Field of Knowledge</b>	<b>Frequency</b>	<b>Percentage</b>
Education	44	15.2
Engineering	32	11.1
Humanities	79	27.3
Sciences	84	29.1
Social & Management Science	47	16.3
<b>Total</b>	<b>289</b>	<b>100</b>

Table 4.2 show the distribution of respondent by field of knowledge. Eighty-four (84) respondents representing 29.1% were Science based lecturers; seventy-nine (79) respondents representing 27.3% were humanities based; forty-seven (47) respondents representing 16.3% were social and

management science based; forty-four (44) respondents representing 15.2% were education based while the remaining thirty-two (32) respondents representing 11.1 % were engineering.

**Answer to Research Question**

The research question raised in chapter one was answered below using data organization

**Research Question:** What is the proportion of lecturers with high, moderate and low-test scoring knowledge?

**Proportion of Lecturers’ Test Scoring Knowledge**

Scores	Frequency	Percentage	Proportion
19 - 25	37	13	High
13 - 18	190	66	Moderate
0 - 12	62	21	Low
<b>Total</b>	<b>289</b>	<b>100</b>	

Table above shows the scores, frequency, percentage and proportion of lecturers’ test scoring knowledge. From the table thirty-seven (37) respondent representing 13% have high knowledge of test scoring; while one hundred and ninety (190) and sixty-two (62) respondents representing 66% and 21% lecturers were rank to be having moderate and low knowledge of test scoring respectively.

**Hypotheses Testing**

Three hypotheses were raised and tested at 0.05 level of significance using analysis of variance (ANOVA).

**Hypothesis:** There is no significant difference in mean score of test scoring Knowledge among lecturers with different field of knowledge in Zamfara State.

**Descriptive Statistics on Lecturers Test Scoring Knowledge by Field of Knowledge**

Field of Knowledge	Mean	N	S.D	Std. Error
Education	15.75	44	3.059	.46109
Engineering	15.53	32	3.142	.55537
Humanities	15.92	79	3.062	.34456



Science	16.77	84	2.578	.27635
Social & Management Science	16.76	48	2.704	.39447

Table above shows the description of mean score of lecturers’ test scoring knowledge based on field of knowledge. The mean score indicates that science-based lecturers had the highest mean score of 16.77, followed by social and management science based with mean score of 16.76. The next is humanities-oriented lecturers with 15.92 as well as education and engineering with mean score of 15.75 and 15.53 respectively.

**The Analysis of Variance of Lecturers’ Test Scoring Knowledge by Field of Knowledge.**

<b>Test-Scoring Knowledge</b>	<b>Sum of Square</b>	<b>Df</b>	<b>Mean Square</b>	<b>F-cal</b>	<b>Sig.</b>
Between Groups	30.491	15	2.033	1.262	226
Within Groups	439.633	273	1.610		
<b>Total</b>	<b>470.125</b>	<b>288</b>			

Table above shows the Analysis of Variance of lecturers’ test scoring knowledge by field of knowledge. From the table, the p-value of .226 is greater than the  $\alpha$  level of .05 level of significance with degree of freedom 15. Thus, the null hypothesis which stated that there is no significant difference in lecturers’ test scoring knowledge based on field of knowledge in Zamfara State is therefore accepted. This means no significant difference is observed in lecturers’ test scoring knowledge between education, engineering, humanities, science as well as social and management science.

**Discussion of Finding**

The data finding revealed that in Zamfara State sixty-two (62) lecturers representing 21% were rank as the proportion of respondent with high knowledge of test scoring. While one hundred and ninety (190) lecturers representing 66% were ranked as the proportion of respondent with moderate test scoring knowledge whereas the remaining thirty-seven (37) lecturers representing 13% were ranked as respondent with low test scoring knowledge. The variation in scores used to determine proportion of lecturers with high, moderate and low knowledge of test of scoring may be due to

lecturers' attitude, competence, perception or ability, and may also occur due to numerous factors such as guessing or fatigue. It also revealed that lecturers in Zamfara state do not significantly differ in knowledge of test scoring by field of knowledge the result indicate that science-based lecturers are 29. %, humanities 27.3%, social and management science 16.3%, education 15.2% and engineering 11.1%.

The finding in this study is in compliance with theoretical assumptions of classical test theory (CTT) which reflected that each person has true score or error score on the trait being measured, been it a body of knowledge or competence in a skill. Similarly, CTT has been the major ground work for test construction, test administration, test scoring and interpretation. Hence, CTT become the common measurement theory used in researches. CTT stated that a test result has two components; a true score and error score. Therefore, the implication of lecturer been knowledgeable with test scoring make the test score highly reliable, valid and usable. However, the result of this study revealed that there is no significant difference among tertiary institution lecturers in test scoring knowledge field of knowledge.

Plake and Impara, as in Alkhasuri, et al (2012) survey scoring knowledge of in-service teachers with different qualification. The result indicated that the teachers with low working experience were not well prepared to score student as revealed by the average score of 23 scripts out of 35 scripts is not correct. Similarly, in a survey of scoring knowledge of 69 teachers, Volane and Fazio as in Alkhasuri, et-al (2012) found that scoring knowledge remain relatively low for teachers across four years of the teacher experience. Unlike this study which investigate lecturers. Test scoring knowledge is not influenced by qualification and years of working experience as 21% and 66% of the lectures are highly and moderately knowledgeable in test scoring respectively.

Yamtima and Wongwanichb as in Benzehab, (2017) investigated the level of scoring knowledge of primary school teachers with different qualification. The findings showed that most of the participant less knowledgeable in classroom tests scoring. This is contrary to this study as 21% and 66% of the lectures are highly and moderately knowledgeable in test scoring respectively. Only 13% of the respondent are low knowledgeable in test scoring.

Sani (2014) investigates knowledge in test scoring strategies possessed by senior secondary teachers of different qualification, working experience, teaching subject and gender. The result of the study revealed teachers possess knowledge on test scoring. It also discovers that there is no significance difference in teachers' knowledge of test scoring strategies by gender, teaching subject area and teaching experience. It also revealed presence of significance difference in teachers' test scoring knowledge strategies by educational qualification. Compare to this study, they are in agreement as there is no significance difference among respondent in test scoring knowledge by years of working experience. But differ in the existence of difference in qualification, whereas in this research there is no significant difference among respondent by qualification.

Bello, (2018) assessed the extent to which teachers in senior secondary schools in Gwarzo Educational Zone, kano State possessed essay test scoring knowledge. The study revealed that 83.4% of the senior secondary school teachers possessed knowledge on essay test scoring knowledge. The result of the study also indicate that they do not differ by working experience, gender and teaching subject area but differ in educational qualification. This research in agreement with Bellos' study, as about 21% and 66% of the respondent are highly and moderately knowledgeable in test scoring respectively. They are also in agreement as both revealed that there is no significant difference among respondents by working experience. They only differ where Bello revealed existence of significant difference among respondents by qualification, whereas in this research there is no significant difference among respondents by qualification.

Abdulrashid, (2012) conducted an investigation on teachers' knowledge on test scoring among secondary school teachers. The results of the study indicated that teachers' educational qualification and years of working experience did not have any effect on essay test scoring but there was a significant difference in the teachers' gender and competency on essay test scoring. This is in agreement with this study as both revealed that test scoring is not influence by respondent qualification and years of working of experience. This is also in compliance with McMorrish, & Boothnoid, (2013) who conducted an analysis of performance on Scoring classroom tests in

science and mathematics across teachers of different qualification and working experience. The findings of the study show that there is no significant difference among teachers of qualification.

To sum it all, the result of this study revealed no significance difference in lecturers test scoring knowledge between graduate and postgraduate (qualification), among education based, engineering, humanities and science as well as social and management science-based lecturers (field of knowledge), and among lecturers with 0-5 years, 6-10 years, 11-15 years as well as 16 years and above of working experience. This can be ascribed to the fact that instrument of data collected (i.e., TTSS) administered to lecturers was not completed instantly. They filled the TTSS at interval of days and weeks which is considered as the major factor that affect the data collected, result and conclusion of the study. Therefore, future researchers on this area are recommended to take note of this problem and try to minimize this problem in order to prevent it influence on data collected, result of the study and conclusion.

### **Conclusions**

From the findings of this study, it can be concluded that tertiary institution lecturers in Zamfara State are knowledgeable on test scoring since 21% and 66% of lecturers have high and moderate knowledge of test scoring respectively. Only 13% are low knowledgeable.

It can also be concluded that lecturers test scoring knowledge do not differ significantly by field of knowledge. This means lecturer's test scoring knowledge was not affected by field of knowledge.

Therefore, tertiary institution lecturers in Zamfara State which seem to have insufficient test scoring knowledge through personal experience. It can be concluded that the scoring of students' test scripts by lecturers without adopting any scoring technique and without developing marking scheme as well as filling reluctant in going through any requisite procedure of test scoring was not as a result of insufficient test scoring knowledge since, they appear to be knowledgeable of test scoring. It could also be concluded that scoring knowledge is not influenced by lecturers' field of knowledge.

### **Recommendation**

Based on the findings the study recommends Tertiary institutions, Ministry of education and high-profile educational stake holders should ensure lecturers are trained on essential concept, principles, techniques and procedure of test scoring through in-service training and workshop. Similarly tertiary institutions should have policy on examination/test scoring such as preparing marking scheme when developing a test. The marking scheme should be moderated by Head of Department. Tertiary institution administration should monitor the whole assessment process from test construction, administration to test scoring and reporting.

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