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Teachers Variables and Application of Test Blue Prints in Learners Assessment in Secondary Schools in Cross River State

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Abstract

The study was aimed at investigating teachers' variables and application of test blue print in learners assessment in secondary schools in Cross River State. The study was a survey research design. Three null hypotheses guided the study. A sample size of 400 teachers was selected through multiple sampling techniques. Stratified random sampling was adopted in selecting the schools. The data were collected through a validated questionnaire with a reliability co efficient of 0.89 that was carried out using the Cronbach alpha. Data were statistically analysed using Independent T-test and One - Way Analysis of Variance (ANOVA) set at 0.05 level of significance. The result showed that there was no significant influence of gender on application of test blue print among secondary school teachers at $t = 0.64$, $p > 0.05$ respectively. There was also no significant influence of the years of experience on teachers' application of test blue print as $F= 1.885$, $p>0.05$. The extent of application of test blue print were found statistically significant with; $t=147.72$ and $p< 0.05$ respectively. It was recommended that teachers should be trained on the use of test blue print through regular workshops and placement of emphasis during their professional training in colleges and universities to ensure that their instrument are valid measures of the learners ability.

Keywords: Learners assessment, Test-blue print, Teachers variables Teachers' gender, Years of experience.

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INTRODUCTION

Measurement of knowledge of the leaner has become an important aspect of the teaching and learning process in our educational system. Although, many scholars have argued intelligently that examination is not a true test of learners ability but the teacher in the classroom setting has no better alternative to testing in assessing learning outcome. Where test are not utilized, Oyinka (2007) noted that it leaves the teacher in a difficult situation of ascertaining the extent to which instructional objectives have been achieved, the appropriateness of a chosen methodology, and teachers general competencies in delivery of lesson. Test therefore becomes an indispensable tool in the hand of the teachers. Denga (2003) noted that like a measuring rules in the hand of the carpenter, tape in the hand of the tailor, thermometer for the medical doctor, compass for a surveyor, so is the test in the hand of the teacher.

Joshua (2005) defined test as an instrument used systematically to measure a sample of behaviour. Umoinyang and Nenty (2003) defined test as an instrument used systematically to elicit response from respondent in order to determine the presence of a particular ability. Unlike in the physical sciences where their instruments are calibrated and standardized, measurement in the behavioural sciences involves frequent calibrations and the teacher is faced with the challenge of developing and validating instrument that will be valid and reliable. Validity in this context cannot be achieved until the various processes that any test construction must follow are strictly followed. Gronlund as cited in Joshua (2005) noted that test follows four steps:

- Determination of the purpose of testing;
- Development of the test blue-print;
- Selecting appropriate item types; and
- Preparing relevant test item.

However, researches have suggested that the construction of a good test involves more than these steps. As suggested by Joshua (2005), Nwogwugwu (2001) and Ojatunji and Onofeghara (2008) steps in construction of a test ranges from purpose of the test, test blue print development.... That there cannot be any valid instrument in the cognitive domain that do not follow the processes of test construction especially, the development of a test blue print. Joshua (2005) noted that the test blue print is a two way dimensional table relating instructional objectives to course content. This is a means of achieving adequate representation of items and thus ensuring content validity.

Notar, Zuelke, William & Yunke (2004) posited that a test blue print helps teachers align objectives, instruction and assessment. Although, it could be used in varieties of assessment method, it is usually utilized with cognitive test. It shows the total number of items allocated, content taught of their various levels of cognitive (knowledge, comprehension. application, analysis, synthesis and evaluation). Mcgregor (2000) noted that it is an essential step in the development of a test as it helps to combine properly the objectives and the content area, bearing in mind the importance and weight attached to each area.

In outlining the relevance of test blue-print, Gregory (2006) noted that it enhances effective representation of items in content of a subject. Notar et al. (2004) observed that the table serve to clearly define the scope and focus of the test. It ensures that the teacher include items that tap different kind of cognitive complexities when measuring student's achievement.

Akon and Borch as cited in Bassey (2007) outlined that the purpose of test blue print will ensure that;

i. Teachers prepare items in a text according to topics covered and thus reflect what students have learnt.
ii. Content covered are not omitted in the test.
iii. Ensure the validity of the test is achieved
iv. Only those objectives hitherto stated are clearly assessed

But Ujah (2001), Silker (2003) and Ali (1999) noted that test construction requires utilization of skills that can enable a teacher to develop a test with precision, appropriateness of language use, objective communication, items validation and good grading scales. Teachers must not be experts in measurement and evaluation to construct valid and reliable instrument needed. They need to acquire the general test construction skills to ensure that item are structured to elicit clear and bring responses appropriate to the learner's age, abilities and other noticeable differences (Ali, 1999). That lack of test construction may result in poor performance and false assessment of student achievement. Simon (2002) still noted it is the poor test construction that have warranted examination malpractices, academic dishonesty in most secondary school in Nigeria.

The teacher is solely involved in preparing and utilizing this instrument to ensure that what he/she teaches and sets in a test corresponds with the course contents in order to avoid systematic error. Chan (2009) noted that classroom teachers pay little attention to the design and development of reliable assessment tool. Many have speculated that the inappropriate construction of a test instrument is due to lack of knowledge or low level of awareness on the part of teacher, inadequate experience in the preparation of a test blue- print as well as gender differences in issues of table of specification. It could also be that the level of application of this test blue-print is low. It in this backdrop that this paper is written to examine teachers' variables and utilization of table specification in learners' assessment.

Statement of the problem

Validity and reliability remain essential qualities of a good test. In test construction, one of the key area is to ensure that any test instrument developed to measure achievement of students must have content validity. A test is valid if it is suitable for the intended objective. On the other hand, a test is reliable if it consistently measures a trait under all conditions. The most instructionally relevant achievement test are teachers - made test if they are constructed in a way that will provide the teacher with the feedback of student trend of achievement in a subject matter. Aju (2013) pointed out that teachers perhaps more than ever have a need to be knowledgeable consumers of test information, construction of assessment and protocols are given teachers about testing. Unfortunately, Ebinye (2001) have observed that test construction has been found to be a major source of anxiety among teachers in Nigerian Schools. However, Esonmou (2002) and Paulson (2003) have all noted that these anxiety is as a result of poor knowledge of the relevance of test blue print and rigorous processes involved in the development and utilization of test blue print. These have resulted to examination malpractices, invalid and unreliable instrument for assessment. Moreso, teachers do not utilize test blue print in assessment of the learners. It is this basis that prompted this paper to examine teachers' variables and application of table of specifications in secondary schools in Cross River State, Southern Educational Zone, Cross River State.

Hypotheses

The following null hypotheses were stated for the study:

- The extent of teachers' application of test blue-print in learners' assessment in secondary school is not significantly high.
- There is no significant influence of teacher's gender on application of test blue print in learners. assessment in secondary schools'
- There is no significant influence of years of experience on teacher's utilization of test blue print in learner's assessment in secondary schools.

METHODS

The study used survey research design in view of the wide spread coverage of information and also the use of sample without any manipulation or control of sample subjects and variables justified the adoption of survey design (Cozby, 2003; Asika, 2009). The population of the study consisted of all the 8486 Cross River State government employed teachers in post primary schools. A sample size of 400 teachers was selected through multiple sampling technique. Stratified random sampling was adopted in selecting the schools. Questionnaires were used for data collection. The instrument was constructed by the researchers and validated through a pilot study and a panel of 3 experts. The researchers conducted the pilot study using a small sample of 50 subjects (teachers) chosen from outside the designated main areas of data collection. A total of 25 items were constructed. In each of the schools visited, the researchers personally administered the questionnaires assisted by the vice principal, an exercise that lasted for 3 weeks. Fortunate enough, our repeated visits to the sample schools produced a 100% return of appropriately filled questionnaires.

RESULTS

Hypotheses One

The extent of teacher's application of test blue-print in learners' assessment in secondary schools is not significantly high.

Table 1: Population t-test analysis on teacher's level of application of test blue print in learner's assessment in secondary schools

Variable	N	X	SD.	Df.	T	Sig.
Application of test blue print	400	34.94	4.73	399	147.72	.000

The result of as presented in the table above shows that at 399 degrees of freedom with a mean value of 34.94, standard deviation of 4.73, the t-value of 147.72 was obtained with a P-value of 0.000. Since the p-value is equal to 0.000, the null hypothesis is rejected which states that the extent of teachers application is not significantly high.

Hypothesis Two

There is no significant influence of teacher's gender on teacher's utilization of test blue print in learner's assessment in secondary schools

Table 2: Independent t-test analysis of teacher's gender on teacher's utilization of test blue print in learners' assessment in secondary schools

Variable	N	X	SD	Df	T	Sig.
Male	146	35.143	5.446	398	.645	.519
Female	254	34.826	4.27			

P > .05

The table above shows the means and standard deviations of both male and female teachers in the sampled areas. At 398 degrees of freedom, the t-value stood at 0.645 with significant value of 0.519. Since the P-value is greater than the 0.005, the null hypothesis is retained or accepted which implies that there is no significant differences among male and female teachers utilization of test blue print in learner's assessment in secondary schools.

Hypothesis Three

There is no significant influence of years of experience on teacher's utilization of test blue print in learner's assessment in secondary schools.

Table 3: One-way Analysis of Variance (ANOVA) result for teacher's years of experience on utilization of test blue print in learners assessment in secondary schools

Level of Experience	**N**	**X**	**SD**		
1-5 years	170	35.417	4.766		
6-10 years	150	35.253	5.271		
11-above years	80	34.417	3.3180		
Source of Variation	**SS**	**Df**	**MS**	**F**	**Sig.**
Between groups	84.007	2	42.004	1.885	.153
Within groups	8845.670	397	22.28		
Total	8929.67				

From the table above, the means of the variables stood at 35.417, 35.253 and 34.417 with a standard deviation of 3.310, 5.271 and 4.766 respectively. At 2, 397 degrees of freedom, the F-ratio was found to be 1.885 with a significant value of 0.153. Since the significant value is greater than .005 it implies that the null hypothesis is retained or accepted which states that there is no significant influence of years of experience on teachers' utilization of test blue print in learners assessment in secondary schools

DISCUSSION AND FINDINGS

The study is an investigation of teachers' variables and utilization of test blue print in learner's assessment in secondary schools. Five variables were identified for the study: gender, teachers' years of experience, awareness and academic qualification, and extent of application of test blue print. The result in table 1 revealed that teachers' extent of test blue print application is not significantly high. The result in table 2 showed that there is no significant influence of gender on teachers' utilization of test blue print in learners' assessment. This implies that there are no differences among male and female disposition to test blue print usage in learners assessment. The result is consistent with the findings of Izard (2005) who posited that the problem is not in the gender factor but on their ability to develop and utilize table of specification according to rules. This is so because most teachers irrespective of their gender exhibit little or no skills in utilizing this tool for cognitive

assessment and this account for poor development of instruments for learner assessment leading to poor performance and other attendant consequences in the assessment issues.

Hypothesis three shows that the null hypothesis stated is retained. This implies that there is no significant influence of teacher level of experience and their utilization of test blue print. The study is in line with the work of Chan (2009) that an individual's it is not the level of experience that matters. It is the actual usage of the instrument. He went further to posit that most teacher are aware and knowledgeable about the relevance of test blue print but the problem lies on their perception of developing and utilizing the instrument as at when appropriate. Downing (2003) further stated that teachers perceive these test construction procedures as waste of time and non-motivating. This is why even if they have the experience in doing it, they fail to utilize it.

CONCLUSION

Based on the findings in the study, it can be concluded that there is no gender differences and influence of teacher's level of experience on their utilization of test blue print in learner's assessment. Moreover, teacher's level of awareness and level of knowledge significantly influenced their utilization of test blue print in learner's assessment in secondary school in Cross River State

Recommendations

In view of the findings of the study, the following recommendations are made:

- Teachers should be encouraged to encourage utilize test blue prints in cognitive assessment;
- Teachers in training in federal colleges of education and universities should be exposed to the technicalities in preparing these table in order for their assessment instrument to be valid; and
- Government should make provisions for teachers to attend workshop, seminars, and conferences on assessment procedure in order to ameliorate the failure rate associated with teacher's inability to utilize a valid assessment tool in learner's evaluation.

REFERENCES

Agu, N. N. (2013). Measuring teachers' competencies in constructing classroom-based tests in Nigerian secondary schools: need for a test construction skill inventory. *Educational Research and Review*, *8*(8), 431-439.

Ali, A. A. (1999). *Basic research skills in education.* Enugu: Orient Printing and Publishing.

Asika, N. (2009). *Research methodology in the behavioural sciences*. Ikeja: Longman

Bassey, N. (2007). *Testing principles and practices in education*. Uyo: Silvia Printing Press

Chan, K. K. (2009). Using test blueprint in classroom assessments: why and how. Paper presented at the 35th *International Association for Educational Assessment* (IAEA) Annual Conference, Brisbane, Australia.

Cozby, T. (2003) *Research in education and the social sciences*. Enugu: Tashiwa Networks.

Denga, I. D. (2003). *Educational Test, Measurement and evaluation*. Calabar: University of Calabar, Printing Press

Downing, S. M. (2003). Validity: on the meaningful interpretation of assessment data. *Medical Education, 37*(9), 83-100.

Ebinye, P. O. (2001). Problems of testing under the continuous assessment Programme. Journal of Quality Education, *I*(1)12-19.

Esonmou, A. (2002), Assessment of adherence to testing principles in classroom assessment. *Journal of Social Science and Development Studies*, *1*(1), 67-72.

Gregory, T. (2006) I*ntroduction to research methodology*. Onitsha: African, First Publishers

Izard, J. (2005). Overview of test construction. In K. N. Ross. Quantitative Research Methods in Educational Planning. Paris: UNESCO International Institute for Educational Planning.

Joshua, M. T. (2005) *Fundamentals of test and Measurement in Education*. Calabar: University of Calabar Press

Mcgregor, O. P. (2000) Fundamental Assessment Principles for Teachers and School Administrators. *Journal of PARE online, 7*(8). Retrieved June 2, 2016, from http://pareonline.net/getvn.asp?v=7&n=8.

Notar, C. E., Zuelke, D. C., Wilson, J. D., & Yunker, B. D. (2004). The table of specifications: insuring accountability in teacher made tests. *Journal of Instructional Psychology*, *31*, 115-129.

Nwogwugwu, P. C. (2001). *Measurement and evaluation in education*. Calabar: Ush Printing & Publisher

Olatunji, S. O., & Onofeghara, N. (2008). Psychological testing: foreign and indigenous psychological test. Lagos:San solid Publishers

Oyinka, N. B. (2007). *Measurement and evaluation in education.* Owerri: Springbelt Publishers.

Paulson T. U (2003). *The study of teaching.* New York: Holt, Rinehart and Winston.

Silker R. T. (2003). *Teachers and tests*. London: Basil Blackwell.

Simon, G. M. (2002). Testing to destruction: A problem in a small state. Unpublished Seminar Paper.

Ujah E. U. (2001). Development and validation of an introductory technology achievement test. Unpublished M.Ed. Thesis, University of Nigeria, Nsukka.

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