International Scholars Journals

International Journal of Animal Breeding and Genetics ISSN 2756-3650, Vol. 11 (4), pp. 001-005, April, 2022. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

Quality-Assurance Ability of Lecturers of Agricultural Education in Developing Psycho-Productive Multiple Choice Items in Animal Science in Colleges of Education in Cross River State, Nigeria

Okeme, Isaac[1] and Bishie-Unung Stephanie Sedoo[2]

Department of Vocational Education, Faculty of Education, University of Calabar, Nigeria.

Accepted 31 July, 2021

The study was carried out to determine the Quality-Assurance ability of Lecturers in developing Psycho-productive Multiple Choice Test Items in Animal Science in Colleges of Education in Cross River State, Nigeria. One research question guided the study. The descriptive survey design was adopted. The population was 47 lecturers of Vocational and Technical Education drawn from the two Colleges of Education in the State. A 36 multiple choice items using Simpson's taxonomy of the Psycho-motor domain was used for data collection. Kudder-Richardson (K-R20) was used to determine the internal consistency of the instrument with a coefficient of 0.91. The data were analyzed using Mean and Quality Assurance Gap (QAG) index to determine the competency needs of the Lecturers. It was found out that Lecturers in Colleges of Education lack competencies in developing Psycho-productive multiple choice items for measuring students' performance in activity-based components of the curriculum. Based on the findings, recommendations were made.

Keywords: Quality, Assurance, Psycho-productive, Skill, Nigeria

INTRODUCTION

Measurement according to Venkatramman (2008) is the process of obtaining a quantitative degree of achievement of objectives set for an educational setting. In the context of this study, measurement is viewed as the extent to which all the activity-based components of Colleges of Education curricula in Cross River State could be achieved using valid measuring instruments. Every curriculum in the College of Education has the cognitive, affective and the psychomotor objectives. The cognitive objectives of the Colleges of Education curricula are usually measured though Bloom's Taxonomy of the cognitive domain with the following levels: knowledge, comprehension, Application, Analysis, Synthesis and Evaluation. The psychomotor objectives of the curricula cannot be measured with Bloom because Bloom's taxonomy emphasized the measurement of product, while in activity-based curriculum; emphasis is

*Corresponding Author's Email: isaacokeme65@gmail.com; Tel:+2348033452801.

placed on the measurement of process. It is the realization of the shortcomings of using Bloom taxonomy to measure the activity-based component of any instructional objectives that Simpson (1972) developed psychomotor domain taxonomy with the following levels- perception, set, guided response, mechanism, complex overt response, adaptation and origination. It is doubtful whether lecturers in Colleges of Education have the competencies required to develop psycho-productive multiple choice items using Simpson's taxonomy. This was evidenced in the researcher observation in questions developed by lecturers in the two Colleges of Education where this study was carried out. This in effect made the achievement of the activity-based components of the Colleges of Education curricula very elusive. To be able to develop an instrument to measure the psychomotor objectives require some competencies on the part of the lecturers. Competence in the submission of Encarta (2009) is the ability to do something well, measured against a standard, especially ability acquired through training or experience. Also International Labour Organization report (2003) posited competency as the knowledge, capabilities and behavior which someone exhibits in doing his job and which are factors in achieving the objectives pertinent to the teaching strategies. Competence in the context of this study consists of the knowledge, skills and attitudes which the lecturers in Colleges of Education require to develop psycho-productive (activity-based) test items to achieve activity-based objectives of the curricula. These will make the lecturers work to be quality-assuring. Quality in the view of Olaitan, Nwachukwu, Igbo, Onyemachi and Ekong (1999) is that distinguishing parameter or characteristic that brings out or exposes the worth or goodness associated with a thing. The authors stated that quality has to do with the level of competence or excellence in performance, which can be measured by establishing acceptable criteria and standards. Quality in this study refers to the level of competence appropriate for the performance of a set of activities towards achieving the objectives of activity–based components of the Colleges of Education curricula in Cross River State. Hence, quality assurance in this study, is an indication or evidence that if lecturers in Colleges of Education are competent in developing psycho-productive (activity-based) test items in measuring psychomotor skills, it will indicate whether or not the psychomotor objectives are achieved or not. College of Education is a three year teacher training programme of education after graduating from secondary school. In Cross River State, there are two Colleges of Education namely: Cross River State College of Education, Akamkpa and Federal College of Education, Obudu. It was observed by the researcher that lecturers set mostly questions based on Blooms taxonomy of cognitive levels without the thought of measuring psychomotor skills in the students. The implication of these practices in the view of Olaitan and Mama (2001) is that students graduate from the programme without acquiring the basic competencies that will enable them to fix themselves into the world of work of teaching and to make a living.

Problem statement

For any Educational institution to be successful in its goal of changing the behavior of learners, is a function of achievement of its curriculum objectives set for that level of learning. Colleges of Education in Cross River State are no exceptions. The researcher's observation revealed that the measurement instruments used in these Colleges to assess the Psychomotor domain objectives of their curriculum are defective. This is because the lecturers are more conversant with the use of Bloom's taxonomy whose measurement is product oriented while measurement of Psychomotor objectives ought to be process oriented which is the emphasis of Simpson. It is the realization of this emphasis that the researcher carried out this study to ascertain the ability of lecturers in developing valid measuring instrument to assess the achievement of activity-based objectives of Animal science component of the Colleges of Education curricula in Cross River State.

Purpose of the Study

The purpose of this study therefore is to identify areas in the Animal science component of the Curriculum where Lecturers in Colleges of Education require competences in developing psycho-productive test items that will be quality assuring in measuring students performance in activity-based components of the curricula in Cross River State. Specifically, the study sought to identify whether lecturers of Colleges of Education require competencies in developing psycho-productive skill multiple test items in Animal science that can be quality assuring in measuring psychomotor objectives of the Colleges of Education curricula using the seven levels of Simpson's taxonomy.

Research Question

What are the competencies required by lecturers in developing psycho-productive multiple choice items in Animal science at the Perception, Set, Guided response, Mechanism, Complex overt response, Adaptation and Origination levels of Simpson's Psychomotor domain?

METHODOLOGY

One research question guided this study. Survey research design was adopted for this study. Olaitan, Ali, Eyo and Sowande (2000) stated that survey research design is the plan, structure and strategy that the investigator wants to adopt in order to obtain solution to reach problems using

questionnaire in collecting, analyzing and interpreting the data. A 36 item multiple choice questions was utilized to collect data from the Lecturers in the two Colleges of Education.

The study was carried out in Cross River State with a population of 47 lecturers comprising of all the 19 lecturers in Akamkpa and 28 in Obudu in the Department of Vocational and Technical Education of the two Colleges of Education in the state. The population was small and therefore the entire population constituted the sample for the study. A 36 item multiple choice questions were developed by the researcher using the Simpson Psychomotor Domain Taxonomy with the seven levels of Perception (5 questions) Set (5 questions) Guided response (6 questions) Mechanism (6 questions) Complex over response (6 questions) Adaption (4 questions) and Origination (4 questions). The instrument was validated by three experts in the Department of Vocational Teacher Education, University of Nigeria, Nsukka. Kudder-Richardson (K-R20) was used to determine the internal consistence of the instrument with a coefficient of 0.91. The items were thoroughly mixed together and the 47 lecturers were asked to separate the items into the correct levels in the Simpson taxonomy. At the end of the exercise, the lecturers were graded. Where the Observed Mean score of the respondents is equal or higher than the Expected Mean on an item implies that no quality assurance is required but where the Observed Mean is lower than the Expected Mean implies that quality assurance is required. In this study, the Expected Mean score is 0.5 (0 + 1 /2).

RESULTS

The result of the study was obtained from the research question answered.

Research question:

What are the competencies required by lecturers in developing psycho-productive multiple choice items in Animal science at the Perception, Set, Guided response, Mechanism, Complex overt response, Adaptation and Origination levels of Simpson's Psychomotor domain?

The data for answering the research question are presented in table 1.

The data presented in the table revealed that the mean scores of the lecturers in the 6 items at the Perception, set, guided response, mechanism and complex overt response and 4 items at adaptation and origination levels of the domain ranged between 0.23 and 0.47 and were less than 0.5. Therefore they require competence in developing psycho-productive multiple choice items in all the 7 levels of the domain for measuring students' performance in activity-based components of the Colleges of Education curricula.

DISCUSSION OF RESULTS

The result of this study on Quality- Assurance Ability of Lecturers in developing psycho-productive multiple choice items in Colleges of Education in Cross River State is in conformity with the statement in the National Policy on Education (GRN 2004), that all teachers in educational institutions shall be professionally trained and that Teacher Education Programmes shall be structured to equip teachers for effective performance of their duties. The result of the study is in consonance with Aguolu (2004) in his study on competency - improvement needs of supervisors of teachers of agriculture in primary and post primary schools in Federal Capital Territory, Abuja where the researcher found out that supervisors of Teachers of Agriculture needed improvement in 8 modules with their 97 corresponding supervisors competencies in which Supervisors of Teachers of Agriculture required improvement. The findings of this study also agreed with Sowande (2002), in a study on Technical Competency Improvement Needs of Metal work Teachers in Nigeria Colleges of Education. The author found out that metal work teachers needed improvement in 80 competency items for better performance on the field.

The above finding is in agreement with the opinion of Olaitan in Ukonze and Olaitan(2009) who stated that the teachers of Agricultural Education are expected to be technicians in Agriculture dealing effectively with the cognitive, psychomotor and affective outcomes and, therefore, they are expected to be knowledgeable, skillful and competent in Agricultural Education. This study is also in conformity with Ukonze and Olaitan (2009) in a study on Capacity Building Need of Teachers for Effective Teaching of Agriculture science in Anambra state. It was found out in the above study that teachers in Anambra state needed capacity building for effective teaching of agriculture in the areas of planning instruction, implementing instruction, evaluating instruction and helping students manage practical activities in the farm for their professional growth.

CONCLUSION

From the result of this study it was discovered by the researcher that lecturers in Colleges of Education in Cross River State needed capacity building for effective development of psycho-productive skill test items to measure the performance of students to determine the achievement of the psychomotor objectives of the curricula. There is therefore a serious need to ensure that the lecturers are retrained. On this note it is recommended that identified competencies where lecturers of Colleges of Education need capacity building for effective development of psycho-productive skill multiple choice test items for measuring the achievement of psychomotor objectives of

Table 1: Quality assurance Gap analysis of responses of lecturers in developing psycho-productive multiple choice items in Perception, Set, Guided response, Mechanism, Complex overt response, Adaptation and origination levels of Simpson's Psychomotor Domain taxonomy.

ITEM NUMBER	NUMBER THAT IDENTIFIED ITEM CORRECTLY	EXPECTED MEAN	OBSERVED MEAN	REMARKS
PTRCEPTION				
1	11	0.5	0.23	QAN
2	15	0.5	0.32	"
3	18	0.5	0.38	"
4	12	0.5	0.26	"
5	14	0.5	0.30	"
SET				
1	21	0.5	0.45	"
2	17	0.5	0.36	"
3	22	0.5	0.47	"
4	11	0.5	0.23	"
5	14	0.5	0.30	"
GUIDED REPONSE				
1	12	0.5	0.26	"
2	20	0.5	0.43	"
3	15	0.5	0.32	"
4	17	0.5	0.36	"
5	21	0.5	0.45	"
6	19	0.5	0.40	"
MECHANISM				
1	21	0.5	0.45	"
2	17	0.5	0.36	"
3	22	0.5	0.47	"
4	11	0.5	0.23	"
5	14	0.5	0.30	"
6	16	0.5	0.34	"
COMPLEX OVER RESPONSE				
1	12	0.5	0.26	"
2	18	0.5	0.38	"
3	11	0.5	0.23	"
4	14	0.5	0.30	"
5	13	0.5	0.28	"
6	17	0.5	0.36	"
ADAPTATION				
1	22	0.5	0.47	"
2	18	0.5	0.38	"
3	21	0.5	0.45	"
4	17	0.5	0.36	"
ORIGINATION				
1	12	0.5	0.26	"
2	14	0.5	0.30	"
3	13	0.5	0.28	"
4	16	0.5	0.34	"

QAN= Quality Assurance Needed N=47

Colleges of Education curricula in Cross River State be packaged into a training programme to be utilized in retraining the lecturers through workshops and seminars.

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