INSTRUMENT FOR MEASURING STUDENTS' ATTITUDES TOWARDS CHOICE OF SUBJECTS AT THE SENIOR SECONDARY SCHOOL LEVEL

Dr F.O.E lweka

Abstract

The task of this work was to develop an instrument for measuring students' attitude towards choice of subjects. The population of the study was made up of all senior secondary school students in Rivers State. From the population a sample size of 504 students drawn form twenty four (24) secondary schools in 12 local government areas in Rivers State was used for the study. A 125-item six-point Likert type questionnaire was used in collecting data. The question on reliability was answered using Cronbach's Alpha coefficient reliability estimate. In the process, the reliability and validity of the scale were established. The differences between each subscale were also established. Based on the findings, the researcher has offered recommendation on the utilization of the scale.

Introduction

The problem of choice of subjects is not peculiar to the senior secondary school system. It dates back to the time of Cambridge, WASCE and GCE. In all these cases, students had to choose from a number of subjects. What is peculiar about the senior secondary certificate examination is that the candidates are exposed to a wide variety of subjects to choose from. This exposure to a wide variety of subjects has posed problems for students, parents, teachers, school administrators, counsellers and even the government.

Formally, teachers used to show no concern about the attitude of their students towards choice of subjects. The matter of choice was left in the hands of students and parents whose knowledge of this matter was limited and shallow. The complexity of this situation and the ignorance associated with it has forced many students into woeful failures in their examinations.

It has also given birth to other consequences such as joblessness and missing out on their rightful professions.

Students themselves are nonchalant in these matters. For example, a subject like mathematics which is a prerequisite for certain careers is one of the subjects students hate most in our secondary schools. This nonchalance and lack of interest arise from preconceived notions of difficulty in the various subjects. On the other hand many students feel that English language does not need any serious attention since it is spoken everyday.

Little do students know that he who fails to prepare well prepares to fail. This is why many students have become permanent customers to WAEC.

The year by year record of mass failure is no longer news. For instance between 2000 and 2007, less than 40% of the total entry of candidates for the West African School Certificate Examination passed at credit level in the sciences (STAN, 2007).

Most of these failures can be traced to wrong choice of subjects emanating from parental influence. Some parents force their children to choose subjects against their own interest. In many instances, students have to change from one subject to another at a vary late hour.

Sometimes they choose subjects which they are not quite prepared for and which they are not sure to pass. Some who pass are faced with the problem of having a certificate which limits them to mental work but cannot help them progress academically. It is in this way that many studer.3 jeopardize their chances of acquiring university education.

Admission procedures into our universities are strict. One must carefully study the JAMS Brochure to scale over the hurdles. The various Faculties and Departments have their entry requirements. There is also the list of J.M.E. subjects to take before qualifying for admission. Even, when a student has passed the JAMB examination, he may find himself in a department that requires

extra credits for admission of new students. This is why students who have been offered admission ~;. JAMB are rejected by particular universities. Victims of such situations often settle down for air. available course in any department out of frustration.

Quite recently this inability by students to make good choices in careers has been a matter of concern for educationists, psychologist and government. Consequently this trio has developed a united front in studying the factors that affect choice of subjects in order to check mass failure in school certificate and other examinations. Some researchers have already developed attitude scales in the physical sciences and individual subjects. Prior to this study, councellors, teachers and other policy formulators, have resorted to the use of continuous assessment test scores and examination results to advice students on choice of subjects and also to categorize them into certain subject and career areas.

These methods of counseling have been found to be archaic and wanting in the sense that the natural talent of a child towards a particular field of study is neglected. The use of test scores alone in determining the ability of the student, stresses only the psychometric domain while little or nothing is known about the affective domain.

The best information is that which is supplied by the beneficiary (the student), in an uninhibited condition by means of guarded and stimulating questions.

Significant work is yet to be done on developing a standardized attitude scale towards choice of subject areas. On account of this lapse, the author wishes to develop and validate an instrument for measuring students' attitudes towards choice of subjects.

Purpose of the Study

1. To develop an attitude scale that would be relevant to all subject areas in the Nigerian educational system.
2. To evolve a means of systematically helping students in their choice of subjects.

Research Questions

1. How reliable are each sub scales of the instrument.
2. How valid are each sub-scale of the instrument

Method

The instrumentation was carried out in Rivers State. The population of the study was made up of all the students in senior secondary one in schools in Rivers State. Twenty four (24) schools were randomly selected for the study. 260 of the students used were male while 245 were females. Since it was necessary to rate the attitude of the respondents in the various subjects areas, five head teachers each in 24 schools used were utilized for this purpose.

Instrumentation

A 125, six-point, Likert questionnaire was developed for the study. The questionnaire was divided into five sub-scales namely Sciences, Arts, Technical, Social Sciences and Business, each sub-scale had 25 questions for the respondents. The responses were weighted as follows:

Strongly disagree	CSD
Disagree	(D)
Tend to Disagree	(TD)
Tend to Agree	(TA)
Agree	(A)
Strongly Agree	(SA)

Scale Development and Standardization

The scale used is basically designed to expose students' attitudes towards the choice of Arts, Science, Social Sciences, Business and Technical subjects. Each sub-scale contains 25 items developed from 5 dimensions. The dimensions represent the cause for certain inclination of students in their choice of subjects. They include:

(a) Cognitive
(b) Financial
(c) Self-actualization
(d) Aesthetic
(e) Social.

Each of these dimensions cut across the sub-scales as shown in the table 1

Table 1: Representation of each Dimension in the Instrument

DIMENSION	SCIENCE SUB-SCALE	ARTS-SUB SCALE	TECH. SUB-SCALE	SOCIAL SC. SUB-SCALE	BUSINESS SUB-SCALE
COGNITIVE	1-5	6-10	21-25	16-20	11-15
FINANCE	6-10	1-5	16-20	11-15	21-25
SELF ACTUALIZATION	11-15	16-20	6-10	21-25	1-5
AESTHETIC	16-20	21-25	11-15	1-5	6-10
SOCIAL	21-25	11-15	1-5	6-10	16-20

In scoring the items, all positive items were scored 1 for SD, 2 for D, 3 for TD, 4 for TA 5 for A and 6 for SA. The converse applies to all negative items.

Date Analysis and Discussion on
Findings Research Question 1:

How reliable are each sub-scales of instrument?

The Cronbach Alpha reability estimate was found for each sub-scale of the instrument. Each item variance (Si^2) was found as well as the sub-scale variance (St^2).

The items variances were added up and substituted into the formula?

$$\frac{n}{n-1} \left\{ 1 - \frac{\sum Si2}{St2} \right\}$$

Where n is the number of items in the subscale, The results for each sub-scale are reported on Table 2

Table 2: Cronbach's Coefficient Reliability Estimate for Each Attitude Subscale

Subscales	No of items	Reliability	Estimate
Science	25	69.364	286.050.80
Arts	25	66.345	267.421.80
Technical	25	64.032	308.670.83
Social science	25	61.289	251.064.80
Business	25	66.346	372.220.87

High Range of Reliability for Likert scales is . 08 to .95 Reliability = VT where VT = Total score variance VO

VO = True score variance

The proportion of true score variance is total score variance for the science sub scale which is 0.80, for the Arts subscale 0.80, for Technical subscale 0.81, for the Social Science Sub scale 0.80 and for the Business sub-scale 0.87. These fell within the acceptable Likerts scales reliability range of 0.80-0.95 required for significance. Thus, each sub-scale of the instrument was reliable.

This is supported by Sex (1978), who reported that Thurstone scale yielded a reliability

of 0.60 to 0.85. In view of the fact that the instrument was constructed on Likert formula, the quantity of the scale is indicated by this high reliability coefficient.

Research Questions 2:
How valid is each sub-scale of the instrument?

The criterion related validity was calculated for each sub-scale of the instrument. Pearson's correlation analysis was done between each sub-scale scores and corresponding external criterion which in this case was teachers' rating of students' attitudes on the same subject matter. Result presented on Table 3.

Table 3: Estimate of the Criterion Related Validity of the Attitude Sub-Scales (N=504)

Subscale	X	Variable X2	XY	Validity
Science; Total scores on science (x)	50972	521680	2512129	.48
Teachers' rating of students on science attitude (criterion)	24392	1324372		
Arts: Total scores on Arts (x)	47862	4606265	2309436	.44
Teachers rating of students on Arts attitude (criterion)	23899	126776		
Technical: Total scores on Technical subscale (x)	48527	471729	2214849	.45