

## **DEVELOPMENT OF A SCALE FOR ASSESSING TEACHERS' ENTREPRENEURIAL SKILLS IN SECONDARY SCHOOLS IN IMO STATE**

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### **Introduction**

Education remains the most vital strategy for continuous development of any nation. An educational system that ensures greater achievements and performance of students is pivotal for the dream of any nation to belong to the world's leading economy. To achieve this dream teachers are the most powerful professionals for the attainment of the nation's growth. There is high rate of unemployment among Nigerian youths as it is seen that most graduates roam about the streets without jobs. Due to the problem of unemployment and the need to be self reliant, entrepreneurship education was introduced at all levels of education system in Nigeria.

Entrepreneurship education refers to programmes that promote and provide skill training for business creation and development (Ezeani, 2012). Entrepreneurship education is the type of education which has the ability to impact on the growth and development of an enterprise through technical and vocational training (Ebele, 2008). Entrepreneurship education creates the willingness and ability in a person to seek out investment opportunities in the society and be able to establish and run an enterprise successfully based on the identified opportunities. This means that entrepreneurship education helps to provide business education students with the knowledge, skills and innovation to encourage entrepreneurship in variety settings. One of Nigeria's educational objectives entrenched in the National Policy on Education (FRN, 2013:3) is "the acquisition of appropriate skills, abilities and competences both mental and physical as equipment for individual to live and contribute to the development of the society". The acquisition of these skills is the duty of the teachers in ensuring that they are consciously taught and inculcated on the students. Teachers are the key to the success of every educational programme, because the effective implementation of the programme largely depend on what they teach the students. Secondary school students are therefore expected

to be taught some basic entrepreneurial skills that will help them to be self-reliant after school.

Entrepreneurial skills are those business-oriented dexterities and abilities possessed by an entrepreneur which enables him or her to be successful in his business task. Entrepreneurial skill provides entrepreneurs with learning experiences needed to enhance their individual contribution to their entrepreneurial goals (Uche, 2010). Some of the entrepreneurial skills very much needed by the entrepreneurs and are expected to be possessed by teachers so that they will successfully be taught to students include; business skills, marketing skills, accounting skills, technical skills, financial management skills, communication skills, human relations skills, ICT skills, conceptual skills, decision-making skills, problem-solving skills, employability skills, high productivity skills, self-esteem etc (Oduma, 2012). Others include leadership, creativity, marketing, time management, negotiation, self-motivation, accounting and interpersonal skills. The acquisition of these entrepreneurial skills enables one to find and evaluate business opportunities, gather the necessary resources, initiate appropriate actions to ensure success and implement actions to take advantage of the opportunities for rewarding outcome (Azubuike, 2006). Therefore, for effective inculcation of entrepreneurial skills to secondary school students to be realized, there is need for a valid and reliable instrument to assess teachers' entrepreneurial skills in secondary schools in Imo State.

According to Amaechi (2016) some psychometric properties are required to make an evaluation instrument appropriate and acceptable. These properties are the test validity and reliability. Egwim and Amaechi (2015), further stressed validity of an instrument is one of the most psychometric properties of an instrument. It is agreed among educationalists and measurement experts that one of the most important considerations in test evaluation is the degree of validity of the test. Validity of a measuring instrument according to Nworgu (2015) is the property that ensures that the instrument measures what it is supposed to measure. The validity of an instrument is therefore the degree of accuracy with which the instrument measures what it is intended to measure. A test may be validated through face, content, criterion and construct depending on its purpose. Therefore, the validity of a test depends on the purpose for which the test was developed. This means that a test, which is valid for assessing teacher entrepreneurial skills, may not be valid for assessing teachers' effectiveness.

It is pertinent that validity is a major component of a measuring instrument. Just like validity is essential to an instrument development, is reliability. Reliability of an instrument is the consistency with which an

instrument measures whatever it measures (Egwim & Amaechi, 2015). It implies that reliability of a test relates to the degree of consistency or stability, which the text exhibits. According to Eboh (2009) reliability of an instrument refers to the degree to which a given measurement procedure will give the same description of that phenomenon if that measurement is repeated. The calculation of reliability of a test yields coefficient which ranges from zero to one. Empirically, Balogun and Mustapha (2014), concluded that test items that have high factor loading and satisfy other psychometric properties are important for selection in any instrument development and validation study. Similarly, Onye and Amaechi (2016) found out that their human resource management effectiveness scale had a high reliability index of 0.84. But the factor analysis and reliability indexes of TESS are not ascertained yet in secondary schools in Imo State.

The acquisition of the entrepreneurial skills enable one to find and evaluate business opportunities, gather the necessary resources, initiate appropriate actions to ensure success and implement actions to take advantage of the opportunities for rewarding outcome. The new trend of entrepreneurship education in Nigerian schools demands that variety of assessment tools be carried out to identify entrepreneurial skills possessed by teachers in secondary schools. Sequel to this and the relatively scanty number of instruments for measuring teachers' entrepreneurial skills, researchers on their own have continued to construct non validated instruments for measuring part of entrepreneurial skills. Observations show that those instruments without due procedure of validation are generally of doubtful psychometric features since no serious attention might have been paid to their development and validation. For such instruments, either face validation or possibly construct validation was employed. In other words, most of the researchers do not seem to possess the competencies required in instrument development and validation. This means that for researchers and other concerned bodies to use valid and reliable tests, experts in measurement and evaluation (test development) have to develop them; otherwise the objective of entrepreneurship education in Nigerian secondary school may not be achieved. The problem of this study therefore posed in a question form is: how valid and reliable is Teachers' Entrepreneurial Skills in secondary schools in Imo State? The answer to the above question is the thrust of this study.

The main purpose of this study is to develop and validate a scale for assessing teachers' entrepreneurial skills in secondary schools in Imo State. Specifically, the study sought to:

1. ascertain the construct validity of TESS using factor analysis, and

2. determine the internal consistency reliability index of TESS using Cronbach alpha.

The following research questions were posed to guide the study:

- 1) What is the construct validity of TESS using factor analysis?
- 2) What is the internal consistency reliability index of TESS using Cronbach alpha?

**Method**

This study is an instrumentation research design study. The population of the study consists of 5047 teachers from the 275 public secondary schools in Imo State. The sample for this study comprised of 1200 teachers. The sample was drawn using proportionate and cluster sampling techniques. The sample was done based on the education zones in the state. The instrument that was used for data collection for this study is a rating scale titled “Teachers’ Entrepreneurial Skills Scale (TESS)” with 65 items with six components parts/clusters: that dealt on business management, technical, marketing, accounting financial management and ICT skills. The rating scale is formed along 4-point rating scale options of strongly Agree (4 points) Agree (3 points) Disagree (2 points) and strongly disagree (1 point). The instrument was initially face validated by three experts in the area of educational measurement and evaluation. The researchers sought permission from the school authorities to collect the data for this study. Research question 1 was answered using factor analysis (Confirmatory Factor Analysis Statistic) by principal components with varimax rotation while research question 2 was answered using Cronbach alpha statistic via SPSS version 21. For the factor analysis, items with 0.35 and above in one factor loading are seen as pure, below 0.35 are seen as impure items while any item that recorded up to 0.35 in more than one factor loading is considered as complex items.

**Results**

**Table 1:** Summary of factor analysis results for the construct validity of TESS

S/N		Remarks		
		Impure Items	Complex Items	Selected Items
<b>Business Management Skill</b>				
1	Ability to set appropriate business goals.			√
2	Ability to plan effectively for goals attainment			√
3	Ability to organize resources (human, material) for goal attainment			√

- |    |  |   |   |
|----|--|---|---|
| 4  | Ability to implement plans for goal attainment                                   |   | √ |
| 5  | Ability to evaluate all business operations and make appropriate use of feedback | √ |   |
| 6  | Ability to identify business opportunities                                       |   | √ |
| 7  | Ability to supervise work and employees effectively                              |   | √ |
| 8  | Ability to carry out inventory control and turnover                              |   | √ |
| 9  | Ability to recognize the need for employee growth and development                |   | √ |
| 10 | Adapting basic steps in setting up business                                      |   | √ |
| 11 | Ability to sustain customers   |   | √ |
| 12 | Delegate authority   |   | √ |
| 13 | Monitor performance  |   | √ |

**Technical Skills**

- |    |   |   |   |
|----|---|---|---|
| 14 | Operate office tools and machines   | √ |   |
| 15 | Help others to learn needed skills and knowledge  |   | √ |
| 16 | Identify training needs and job information to help others  |   | √ |
| 17 | Demonstrate understanding and adaptability of changes   |   | √ |
| 18 | Exhibit self-confidence to select appropriate reproduction processes in collating/binding documents |   | √ |
| 19 | Proof-reading and preparing mailable documents  |   | √ |
| 20 | Generate innovative ideas and new ways to disseminate information                                   |   | √ |
| 21 | Use different word processing packages/software   |   | √ |
| 22 | Manage materials and facility resources   |   | √ |
| 23 | Communicate ideas, thoughts, information and messages in form of letters, reports manuals etc       |   | √ |
| 24 | Ability to understand the nature of business  |   | √ |
| 25 | Ability to apply academic background on business growth   |   | √ |
| 26 | Ability to provide solution to problems   |   | √ |

**Marketing Skills**

- |                          |   |   |   |
|--------------------------|---|---|---|
| 27                       | Ability to determine the extent to which products will sell                                       |   | √ |
| 28                       | Ability to determine the current trends in sales of products                                      |   | √ |
| 29                       | Ability to determine what customers needs.  |   | √ |
| 30                       | Ability to use advertising and sales promotion to win customers to the enterprise                 |   | √ |
| 31                       | Ability to interpret factors which indicate extent of social strength of competition              |   | √ |
| 32                       | Ability to appreciate customers behaviour   |   | √ |
| 33                       | Acknowledge of several fluctuations of goods and familiarity with various aspects of salesmanship |   | √ |
| 34                       | Ability to stimulate customers purchasing and dealer effectiveness                                |   | √ |
| 35                       | Ability to develop and effective distribution network for handing and transporting products       |   | √ |
| 36                       | Using social networking and direct marketing to market business products                          |   | √ |
| <b>Accounting Skills</b> |   |   |   |
| 37                       | Ability to prepare and interpret financial statements   | √ |   |
| 38                       | Ability to prepare payrolls and understand various deductions                                     |   | √ |
| 39                       | Ability to process accounts payable and receivables   |   | √ |
| 40                       | Ability to prepare the cashbook   |   | √ |
| 41                       | Ability to prepare debtors and creditors ledgers  |   | √ |
| 42                       | Ability to keep sales and purchase records  |   | √ |
| 43                       | Ability to determine employee wages and benefits  | √ |   |
| 44                       | Ability to prepare bank reconciliation statements   |   | √ |
| 45                       | Ability to source for and obtain loan   |   | √ |
| 46                       | A knowledge of costing  |   | √ |
| 47                       | Knowledge of source of fund   |   | √ |
| 48                       | Ability to interpret financial statement  |   | √ |
| 49                       | Knowledge of how to obtain loans  | √ |   |

<b>Financial Management Skills</b>		
50	Ability to record business transactions in a systematic manner to show profit or loss	√
51	Knowledge of sources of funds and procedures for loan procurement	√
52	Ability to budget	√
53	Ability to forecast business opportunities	√
54	Ability to keep an organized record of assets and debts	√
55	Knowledge of payroll systems	√
<b>ICT skills</b>		
56	Use of word processing packages to prepare business proposal	√
57	Use of Photocopier machine	√
58	Ability to spiral bind documents	√
59	Use of Mobile phone	√
60	Ability to use the internet to conduct marketing survey	√
61	Use the e-mail for business communication	√
62	Ability to use computer for data processing	√
63	Ability to use the internet for business activities	√
64	Ability to advertise business online	√
65	Ability to design and utilize websites for business	√
<b>Total</b>	<b>4</b>	<b>2</b>
		<b>59</b>

Table 1: shows the summary of factor analysis results for the construct validity of TESS. The summary of the result presented in table one showed that out of 65 items of the instrument, Item number: 5, 37, 49 and 51 loaded less than 0.35 and are referred to be factorially impure (FI), while item number 14 and 43 were factor loaded up to 0.35 in more than one factor, which were referred to as factorially complex. These items (5, 14, 37, 43, 49 and 51) were dropped. All other remaining 59 items were selected (factorially pure) as part of the items for TESS. In conclusion, out of the 65 items of the instrument (TESS), 59 items were factorially pure and were acceptable as suitable for use for assessing teachers' entrepreneurial skills.

**Table 2:** Summary of Cronbach alpha analysis results for the internal consistency reliability indices of TESS

<b>n</b>	<b>No. of Items</b>	<b>Cronbach alpha index</b>	<b>Remark</b>
1200	59	0.82	Very High

Table 2: shows the summary of Cronbach alpha analysis results for the internal consistency reliability indices of TESS. The table indicated that the TESS has a very high Cronbach alpha coefficient ( $\alpha$ ) of 0.82 and were considered very high. The conclusion is that TESS is internally reliable with an overall index of 0.82.

### **Discussion**

The result of the study revealed that out of the 65 items of the (TESS), 59 items were factorially pure and were acceptable as suitable for use in the study. In line with this finding, Balogun and Mustapha (2014), study concluded that test items that have high factor loading and satisfy other psychometric properties are important for selection in any instrument development and validation study. This implies that the items on TESS are good to be used by assessors to rate teachers' entrepreneurial skills in secondary schools. This is a prove that the items on the scale can measure what it set out to measure.

It was also found in this study that TESS is internally reliable with an overall index of 0.82. This implies that the items on the scale are internally consistent to measure the traits it ought to measure. Similar to this finding, Onye and Amaechi (2016) found out that their rating scale had a high reliability index of 0.84 indicating that the instrument is reliable to be used. The value indicated that there is agreement in the scoring pattern of the items. This implies that researchers and evaluators can use TESS in evaluating teachers' entrepreneurial skills.

### **Recommendations**

Based on the findings of this study, the researchers recommend that:

1. Evaluators and researchers in tertiary institutions should adopt this instrument in assessing teachers' entrepreneurial skills in secondary schools in Imo State.
2. A training workshop could be organized for researchers and evaluators on how to use the instrument to rate teachers' on entrepreneurial related skills.
3. State education management board should adopt the instrument in assessing their teacher on entrepreneurial related skills.



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