

## **TRIANGULAR ASSESSMENT MODEL: AN ALTERNATIVE PROCEDURE FOR ASSESSING HIGHER DEGREE RESEARCH IN EDUCATION IN NIGERIA**

**Dr. Akpan Oko Udoh**

Department of Educational Foundations, Guidance and Counseling, Faculty of Education,  
University of Uyo, Uyo, Akwa Ibom State, Nigeria.

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**ABSTRACT:** *The aim of this paper is to provide an alternate procedure for assessing higher degree research in Education in Universities in Nigeria. The author therefore proposed Triangular Assessment Model (TAM) and considered it appropriate for assessing higher Degree Research in Education since it provides an opportunity for the external and internal examiners as well as the supervisor to score the higher Degree Research for certification at the ratio of 40%, 30% and 30% respectively. The Current method where the total power is vested on the External Examiner is out of phrase with valid assessment procedure which relies on the average scores from several scorers. In Triangular Assessment Model, each of them will independently complete their respective Forms. Three instruments (Forms) developed for these purpose are – Higher Degree Research Assessment Form (HDRAF) for External and Internal Examiners, having 82 items with reliability of .8264. Higher Degree Research Supervisor Assessment Form (HDRSAF) having 27 items with reliability of .8003 and Observation Form having 8 items with inter-rater reliability of .7924. The Model was considered appropriate and the forms are believed to provide verifiably data for certification of Higher Degrees in Nigeria.*

**KEYWORDS:** Education, Nigeria Universities, Higher Degree, Academics

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## **INTRODUCTION**

### **Background of the study**

When Educators desire to determine the quality of performance of the human resources, decision makers usually turn to assessment for input. Such input emanate from either tests or examinations or both. It can also involve other assessment methods such as questionnaire, interview or observation techniques. The decision so taken as a result of these input is as good as the quality of input. Therefore when valid data are used in taking decision, such a decision will be worthwhile (Udoh, 2008).

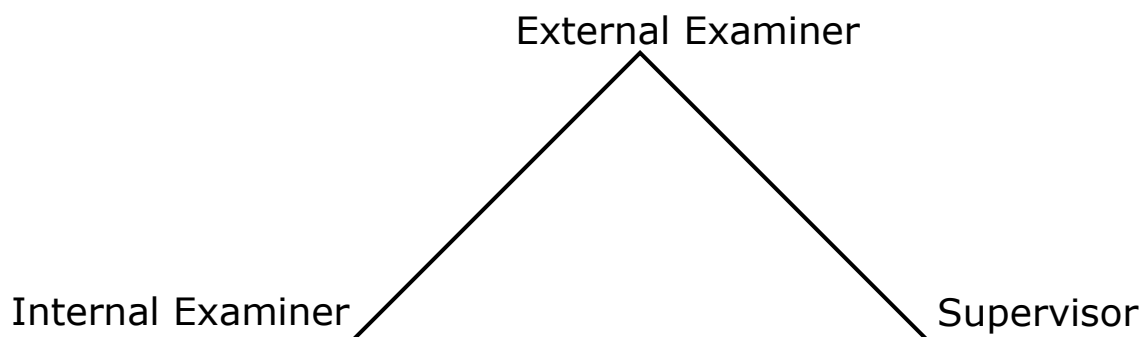
The process of providing valid data by assessing graduate research work for the award of certificate appear a major challenge in research management and attainment of research excellence in Nigeria Universities. A major challenge in the process is allowing such decision to be taken by an external examiner with little input from the internal examiner and none from the supervisor despite the fact that it is the supervisor who knows what the graduate student had done in the process of producing the final report. The supervisor is the one who knows whether the students actually carried out the research himself/herself. The supervisor is the one who can attest to the potential of the student in carrying out independent work. The supervisor is the one who knows whether the students possess the needed scientific attitude. To exclude his/her input in the final stage in the opinion of this paper is detrimental to valid assessment of the graduate student research work. Such method fallshort of Global principle

of assessment which enunciated that a good assessment should be both formative and summative (Uwakiwe, 2005). This had properly been taken care of by Triangular Assessment Model. The supervisors Assessment provides the formative assessment since he knows what happen in each chapter of the research report. The new vision in assessment lean on multidimensional assessment which is broad-based and grounded on multiple measures.

Another component of the challenge has to do with the instrument (Form) which the External Examiner normally employed in taking decision. Let us just look at a research process as involving a number of direct and sequentially linked phases starting from problem formulation, stating the purposes, research question, hypothesis, review of related literature, research design, population, sample and sampling techniques, instrumentation, method of data analysis, results and discussion up to references amidst other sub-headings. A perusal of the assessment Form currently used in assessing higher degree in education for instance has very few items; hence putting validity and reliability of instrument in question vis-a-vis the decision taken. The current instrument has two assessment items one item just assess candidate's (student) knowledge and understanding, while the other assess candidates contribution to knowledge. Other items are just administrative. Obviously; it is inadequate to evaluate a research work with several sub-heads, with just two items.

Another issue in attainment of research excellence in Nigeria Universities is that the current method has overstayed despite several reforms in Education Sector in the last three decades. A good Assessment Method has to be responsive to changes in the society. How can an Assessment Method survives three decades despite the dynamic nature of the society. It is surprising that no effort had been made toward valid assessment of higher degree assessment in Nigeria Universities for such a long time.

Based on these observations, the author of this paper felt much can be gained by utilizing triangular Assessment Model as an alternate practice in which the External, Internal Examiners as well as the supervisor are involved in the final assessment of higher degree research work with their scores counting in the final grade. In this model, three of them are examiners as represented in each angle of the triangle fig 1.



**Fig 1. Triangle representing the three Examiners (External and Internal Examiners plus the Supervisor)**

Such assessment model has much bearing with good assessment procedure where several scorers are involved in assessing a particular person. The result of such assessment is more

1.  $\begin{pmatrix} x & x & x \\ x & x & x \end{pmatrix}$  Agreed score between External Examiner and supervisor excluding area of agreement by the three.  $\begin{pmatrix} \checkmark & \checkmark & \checkmark \\ \checkmark & \checkmark & \checkmark \end{pmatrix}$
2.  $\begin{pmatrix} o & o & o \\ o & o & o \end{pmatrix}$  Agreed score of External and internal Examiners excluding area of agreement by the three.  $\begin{pmatrix} \checkmark & \checkmark & \checkmark \\ \checkmark & \checkmark & \checkmark \end{pmatrix}$
3.  $\begin{pmatrix} . & . & . \\ . & . & . \end{pmatrix}$  Agreed score of Internal Examiner and supervisor excluding area of Agreement by the three.  $\begin{pmatrix} \checkmark & \checkmark & \checkmark \\ \checkmark & \checkmark & \checkmark \end{pmatrix}$
4.  $\begin{pmatrix} \checkmark & \checkmark & \checkmark \\ \checkmark & \checkmark & \checkmark \end{pmatrix}$  Agreed score among the three examiners.

### Assessment Model: Strategies.

1. Higher Research Assessment will be done by the External and Internal Examiners as well as the supervisor in the proportion of 40%, 30%, 30% respectively. This proportion is deemed appropriate since our Continuous Assessment is 30% across the Universities in Nigeria.

2. Each of them (External, Internal Examiners and Supervisor) has a robust form to assess the candidate during the Oral Defence.
3. The form peculiar characteristic is that each process of research is separately appraised. This process might not allow the Examiner to be carried away by the affluence of the candidate at the Oral Defence.
4. The higher research assessment is entirely based on the instrument (form) rather than seeking the opinion of the Internal Examiner on what should be the final score of the defending student as in the current assessed method.
5. During the Oral Defence, the three people individually and independently respond to their respective FORM and the result put together in the proportion highlighted in item 1.

## **METHODS**

The sole aim of the study was to provide on alternate procedure for assessing higher degree research based on valid and reliable instrument. With this aim in mind, three instruments (form) were put together; one was for External and Internal Examiners while another was for supervisor and an observation Form.

The Instrument (form) for external and internal examiners was titled:- Higher Degree Research Assessment Form (HDRAF). The instrument has 6 sections.

### **Section One**

This section has 9 items which were to elicit information regarding the student's personal data such as name, Registration number, Thesis/dissertation titles, name of examiners as well as that of supervisor among others.

### **Section Two**

Section two has 19 items; The items were to assess the adequacy of Topic, Background, problem, purpose, research questions, Hypothesis, significant, delimitation and limitation, Assumption, definition of terms among others.

### **Section Three**

Section three had 10 items; The items were to assess the adequacy of the review of related literature generally, specific area of concern include how the literature reviewed tie with the hypothesis, balancing primary and secondary sources of information, referencing among others.

### **Section Four**

There were 25 items in section four. The items were to assess generally the adequacy of the method of carrying out the study. Specific area of concern include adequacy of research design, area of study, population of study, sample and sampling techniques, qualities of the instrument, administration of instrument, scoring procedure and method of data analysis.

## **Section Five**

The section has 17 items. The items were appraising results, discussion and conclusion of the study. Specific areas of concern include adequacy of Tables, Interpretation of data, discussion, recommendations and conclusions.

## **Section Six**

This section has 11 items on general issues of research bothering on use of study findings, originally, language and organization of the entire work.

### **The second instrument was titled Higher Degree Research Supervisor Assessment Form (HDRSAF)**

The instrument has 27 items. The items were framed to provide data on the interaction between supervisor and student's (procedural information), specific areas of concern include adherence to correction, diligent, working within schedule, ability to work with others, confidentially among others.

### **Observation Form for External and Internal Examiners as well as Supervisor**

The observation form was to be used to assess higher degree which involves an object-project or Art Work and the likes. It has eight items which were to be rated against their respective maximum point. The maximum point were arrived at after due consultation with lecturers who had been involved in such assessment at Higher Degree Level.

### **Validity and Reliability of the instrument**

The instrument was face validated using five randomly selected lecturers from five departments in the Faculty of Education, University of Uyo who are vested with research knowledge. From their feedback, 12 items were rearranged; 9 items amended while 4 items were cancelled. The resulting number of items were given to 20 randomly selected lecturers in the University of Uyo to used in assessing higher Degree. The data emanating thereof were subjected to Cronbach Alpha Analysis.

The result of the analysis showed that Higher Degree Research Assessment Form (HDRAF) had a reliability of .8264. While the Supervisor Form had the reliability of .8003. The Observation Form had inter rater reliability of .7924.

These instruments were considered reliable. Anastasi and Urbina (2007) considered a reliability of .4000 as good enough to reliably assess an individual.

### **Scoring of the instrument**

Poor, Fair, good and excellent were scored 1, 2, 3 and 4 respectively in the External, Internal and Supervisor Forms while the observation Form was scored as part of the total mark apportion to that item. Total score of External, Internal and supervisor were to be computed at the rate of 40%, 30% and 30% respectively. It is to be noted that where observation Form is to be used in assessing Higher Degree, the external, Internal and the supervisor use the same instrument.

## CONCLUSION

Triangular Assessment Model provide a much better option for assessing higher degrees research in Universities in Nigeria because of its good psychometric qualities.

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**APPENDIX**  
**HIGHER DEGREE RESEARCH ASSESSMENT FORM IN EDUCATION**  
**SECTION ONE**

**PLEASE RESPONSE TO THE FOLLOWING ITEMS**

Date.....

1. Name of Institution:.....
2. Name of Faculty/Department:.....
3. Name of Student:.....
4. Student's Registration Number:.....
5. Course Work Scores:.....  
.....  
.....
6. Title of Thesis/Dissertation.....  
.....
7. Name of External Examiner:.....
8. Name of Internal Examiner:.....
9. Name of Supervisor:.....

**SECTION TWO**  
**PLEASE RATE EACH ITEM ON THE FOUR-POINT SCALE**  
**OPTIONS**

S/N	Items	Excellent (4)	Good (3)	Fair (2)	Poor (1)
1	Relevance of Topic				
2	Evidence of understanding the topic				
3	Variables under investigation are measurable				
4	Topic relate to (i) theory or theories (ii) reasonable premise				
5	Dependent variable(s) properly identified				
6	Independent variable(s) properly identified				
7	Problem identification				
8	Objectives derived from problem				
9	Purpose of study stated				
10	Research questions derived from objectives				
11	Hypothesis derived from Research questions				
12	Beneficiaries of research findings identified				
13	Delimitation of study presented				
14	Limitation of study presented				
15	Strategies of countering error				
16	Definition of terms				
17	Assumption(s) stated				
18	Confounding variables highlighted				
19	Appropriate means of controlling confounding				

	variables taken.				
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**SECTION THREE****OPTIONS**

S/N	Items	Excellent (4)	Good (3)	Fair (2)	Poor (1)
20	Adhere strictly to Institutional Guidelines				
21	Review tie closely with hypothesis				
22	Balancing primary and secondary sources				
23	All citation shown at references				
24	Adequacy of citation				
25	Defining the limit of review				
26	Conceptual review done				
27	In Empirical Review, not only the findings were reported but also research Design Topic, sample size and technique.				
28	Currency of reference				
29	Summary of review provide a reasonable gap which warrants the current study.				

**SECTION FOUR****OPTIONS**

S/N	Items	Excellent (4)	Good (3)	Fair (2)	Poor (1)
30	Show proof of Research Design being most appropriate considering the topic under investigation				
31	Area of study adequate to support generalization of findings				
32	Area of study within the capability of investigator (researcher)				
33	Population of study well defined				
34	Description of sample				
35	Sampling technique				
36	Accessibility of sample				
37	Instrument capable of producing appropriate data to solve the identified problem				
38	Items in the instrument void of - Ambiguity - Double barreliness				
39	Evident of control of extraneous/confounding				



	variables				
40	Instrument has good Validity Reliability Usability				
41	Evident of Administering the instrument - E.g. letter from school of treatment - Phone call by supervisor - Personal contact				
42	Match number of instrument returned to sample size as applicable				
43	Evidence of training of research assistant if applicable (Please don't tick if not applicable)				
44	Carry out adequate arrangement for instrument Administration				
45	Method of Data Analysis				
46	The gap between the number of instrument Administered and return				
47	Specification of who collects data				
48	Strategies of avoidance of contamination during data collection				
49	Working within specified time				
50	Reasonability of sample size				
51	Statistical method used				
52	Proportion of the sample to the population				
53	Scoring Procedure				
54	Uniformity of administration of instrument				

**SECTION FIVE****OPTIONS**

S/N	Items	Excellent (4)	Good (3)	Fair (2)	Poor (1)
55	Tables meeting institutional criteria				
56	Research questions answered				
57	Hypothesis tested				

58	Result of findings stated				
59	Interpretation done				
60	Discussion of finding tied to hypothesis				
61	Recommendations based on findings				
62	How data support the research question				
63	How the data support the hypothesis				
64	Extent to which conclusion are consistent with data				
65	Extent of uniformity between Tables and Text				
66	Absence of bias in interpretation				
67	Consistence of Table information (data) with interpretation				
68	Appropriateness of relating result to literature				
69	Extent of conclusion not generalized beyond data				
70	The handling of unexpected consequences				
71	Overall soundness of the investigation				

## SECTION SIX

### OPTIONS

S/N	Items	Excellent (4)	Good (3)	Fair (2)	Poor (1)
72	Study has provided solution to problem involving - Persons (individuals) - University - Education Sector - Society				

73	Is the study - Publishable - Add to sheer knowledge				
74	Evidence of consultation with - Professionals - Experts				
75	Confidence on the topic				
76	Strategies to avoid errors				
77	Evidence of Originality				
78	Clarity of expression in the report				
79	Using words or phrases sensible				
80	Pleasantness of style (a) Sexist (b) Ethnic bias (c) Stereotype				
81	The entire work properly organized				
82	Everything in the topic contribute to the idea in the study				

### HIGHER DEGREE SUPERVISOR FORM

S/N	Items	Excellent (4)	Good (3)	Fair (2)	Poor (1)
1	Prompt adherence to correction				
2	Diligent in work				
	Honesty				
3	Hardwork				
4	Work on schedule				

5	Setting Goals Independently				
6	Show evident of establishing a rapport with subjects				
7	Show evidence of maintaining a rapport with subjects				
8	Show evidence of arousing interest in subject				
9	Tell sample what they will benefit from the study				
10	Get consent to participate				
11	Get consent of organization to allow one to participate				
12	Minimize all form of errors				
13	Minimize all form of discomfort to subjects				
14	Keep subjects responses confidentially				
15	Keep subjects behaviour confidentially				
16	Show independent investigation ability				
17	Adherence to investigation ability				
18	Show evidence of consultation with experts				
19	Narrow mindedness of the investigation				
20	Accept correction promptly				
21	Originality of researcher				
22	Extra commitment				
23	Independently solving problem(s)				
24	Show commitment in his work				
25	Putting scientific attitude to practice				
26	Has commitment in the work				
27	Adhere to time frame				

#### Observation Form for External and Internal Examiners as well as Supervisor

S/N	Items	Score maximum obtained	Maximum point
1	Usefulness of the project or brand or object in solving existing problem	-	4
2	Originality/patent	-	12
3	Originality but not patent	-	8
4	Composition (Organization of units within)	-	30
5	Proportion of the unit to the whole	-	18
6	Balance	-	8
7	Presentation (Final mounting and finality)	-	10
8	Written Report of the object, Arts, dancing, drama, others specify..... Please underline as appropriate	-	10
<b>Total</b>		-	100