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THE CTT ANALYSIS OF PSYCHOMETRIC PROPERTIES OF 2019 SAISSCE TEST ITEMS OF THE ENGLISH LANGUAGE DEVELOPED BY NBAIS IN NIGERIA

TAOFEEQ SOLA SALAUDEEN,
Department Of Guidance and Counselling,
Federal University of Education, Zaria.
+2348078977478, +2348162249860

MUHAMMAD IBRAHIM YAKASAI,
Vice Chancellor, Sule Lamido University,
Kafin Hausa, Jigawa state.

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ABSTRACT

The study was carried out to conduct a CTT analysis of the Psychometric Properties of the 2019 English Language test items developed by NBAIS in Nigeria. Ex post facto design was utilized for the study. Three objectives with corresponding research questions were formulated. The population of the study consisted of Thirty-six thousand, one hundred and forty-one (36,141) registered candidates for the 2019 NBAIS English language examination. The sample was made up of 1134 candidates selected through multistage stratified random sampling technique. The instrument for data collection were the responses of candidates to 2019 NBAIS English Language Papers I test items. The item analysis was carried out on all the one hundred (100) multiple choice items of 2019 NBAIS English Language Papers I from the CTT framework using MS Excel programme which yielded item statistics that serve as data for the descriptive statistics (frequency count and percentage) that were used to answer the research questions. Findings revealed that the difficult index of the items of the 2019 NBAIS English Language was 0.32, the discrimination index of the items of the 2019 NBAIS English Language examination was 0.76 while 30% of the distractors of the options of the items in the 2019NBAIS English Language examination were plausible. It was recommended among others that there is need for the examination body to aim for a balanced mix of easy, moderate, and difficult items to adequately assess the full range of test-takers' abilities.

Keywords: Classical Test Theory, item difficulty, item discrimination, distractors

1.0 INTRODUCTION

The National Board for Arabic and Islamic Studies (NBAIS) conducts public examinations in Senior Arabic and Islamic Secondary School Examination (SAISSCE) in Nigeria. In the SAISSCE, the Board conducts examinations in the core subjects including English language to students in Islamic schools. The English language test is a critical component of the NBAIS examination as it assesses students' proficiency in the language and their ability to communicate effectively.

In recent years, there has been a growing concern about the quality and validity of test items used in educational assessment in Nigeria and that all national examinations should be valid and be fair as much as possible to every category of students. This concern is particularly relevant for high-stakes tests like the NBAIS English language which has significant implications for students' future academic and career prospects. To ensure the validity, reliability, and fairness of the examinations, it is essential to conduct item analysis. As put by Osarumwense and Oyedeji (2015), item analysis is a process which examines students' responses to individual test items in order to assess the quality of those items and of the test as a whole. In other words, the quality of test items in any public examination is always examined through item analysis of examinees responses (Adedoyin & Mokobi, 2013). Classical Test Theory (CTT) provides a framework for evaluating the psychometric properties of test items.

Classical test analysis utilizes traditional item and sample dependent statistics. The major classical analysis statistics are Item difficulty, Item discrimination and Distractors' efficiency. Item difficulty is simply the proportion of examinees taking the test, who got an item right or answer it correctly. According to Hingorjo and Jaleel (2012), difficulty index (p-value) also called ease index described the percentage of students who correctly answered the item. It ranges from 0-100%. The higher the percentage, the easier the item becomes. Items having p-value below 30% and above 70% are considered difficult and easy items respectively. Item discrimination refers to the difference in correct responses between the low and the high scoring students. It is the ability of a test item to discriminate between higher ability and lower ability examinees. Item discrimination index measures how well an item differentiates between examinees with high and those with low abilities. Item discrimination index, D, as defined by Mehta and Mokhasi (2014) measures how an item is able to discriminate the more able pupils from the less able ones, with a +1-index meaning the item is very effective, whereas 0 shows that the item is unable to discriminate at all. In the rare cases that the discrimination index is -1, it is an indication that more pupils from the group with lower overall score are selecting the key responses more frequently than pupils who perform better (Bichi and Embong, 2018).

In his study, Bichi (2015) demonstrated the use of the classical item analysis to evaluate the quality of multiple choices Chemistry test items used in Kano state qualifying examination in July 2014. Forty items Chemistry test administered to students at the end of their senior secondary school two (SSII) was subjected to the classical analysis using sample of 530 students, the Statistical Packages for the Social Sciences, version 20 (SPSS 20V) was used to determine the discrimination and difficulty indices of the items and the classification of the items according to their item characteristics. Findings revealed that, out of the 40 items in the test, 12 (30 %) items failed to meet the set criteria of item quality and are therefore needs to be revised or improve upon for further administration. 28 items based on the established standards has been considered as -good- items. Similarly, the results indicate a significant positive correlation between item difficulty and item discrimination indices. It is recommended that, the teacher made Chemistry achievement tests use to examine sciences secondary school students- achievement should be made to pass through all the processes of standardization and validation by conducting psychometric analysis to improve their quality.

A study conducted by Olutola (2015) aimed at obtaining empirical data on item difficulty and discrimination indices of Senior Secondary Certificate Examination multiple choice Biology tests used by WAEC and NECO in Nigeria. Sample for the study consisted of 1450 SS III

students made up of 758 males and 692 females drawn from twenty randomly selected secondary schools in Ekiti state, Nigeria. The instruments used for the study were 2008 NECO and WASSCE multiple choice Biology test papers. Data analysis was done by the researcher using item by item analysis for obtaining the difficulty and discrimination indices. Findings from the study showed that 2008 WASSCE Biology test had mean difficulty index of .42 and this is slightly higher than NECO test with mean difficulty index of .40 and 2008 WASSCE in Biology had a discriminating power of .43 and this is higher than NECO with mean discriminating power of .39. It was therefore recommended that four (4) option items especially in multiple choice Biology tests should be encouraged but if five (5) option items should be used, more attention should be given to psychometric properties of the tests.

The study of Moyinoluwa (2015) investigated the psychometric properties of Mathematics examinations conducted by four examination bodies (NABTEB, NECO, JAMB and WAEC) to establish the quality of the items presented to secondary school students for of the purpose of certification and placement. The study employed descriptive survey research design to seek for information from a segment of the population of senior secondary students to make generalization on all Nigerian students adopting the multistage stratified sampling technique. From each of the 6 geo-political zones, 2 states were randomly selected to obtain a total of 12 states. One co-educational Federal Government College was purposively sampled from each state, plus three public schools, one private secondary school and one technical college were selected from each state. Thirty SS3 students selected, using the systematic random sampling technique in each of the sampled schools that have been presenting students for public examinations. The test batteries were past question papers developed in four common subjects offered in public examinations as listed above. The statistical tools employed to provide empirical answers to the research questions are: calculation of difficulty indices using relevant formula; split half correlation, Distractor power estimate, and Discrimination indices using relevant formula, also quantitative validations of test were conducted. A fairly high proportion of the test items have appropriate difficulty index i.e. within ranges 0.25 – 0.75. Validity of test batteries used was fairly good. Other psychometric characteristics were found to be generally acceptable. It is recommended that, for easy tests, attention should be given to higher order skills required of graduate of secondary schools and coverage of most aspects of the syllabi prescribed by examination bodies. It is also recommended that the present standard of examinations in Nigeria should be sustained and improved upon.

Despite the importance of item analysis, there is dearth of research on the application of CTT in analyzing the psychometric properties of test items developed by NBAIS. This study aims to address this knowledge gap by conducting a CTT analysis of the Psychometric Properties of the 2019 English Language test items developed by NBAIS in Nigeria.

1.1 Statement of the Problem

There is growing concern from stakeholders on the quality of test items administered by examination bodies in Nigeria such as NBAIS. The concern is more disturbing when it has to do with an examination such as SAISSCE which is used for certification purposes. This is at the backdrop of the policy of the Federal Government that all national examination tests should be as valid as possible and as fair as possible to all students. Specifically, the 2019 NBAIS English Language examination has not been subjected to thorough item analysis which may

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potentially lead to; poorly functioning items that may unfairly advantage or disadvantage certain groups of students inaccurate measurements of students' language abilities, unreliable and invalid scores that may misinform instructional decisions and educational placement and lack of standardization.

Therefore, there is a need for empirical research which is aimed at uncovering the aforementioned issues by using a sample of participants from an area in which to the best knowledge of the researcher no previous study of this type has been carried out. To this end, the study is applying Classical Test Theory (CTT) to examine the psychometric properties (difficulty level, the discriminatory power and the distractors' effectiveness of the items) of 2019 NBAIS English language examination in Kaduna and Bauchi states, Nigeria.

1.2 Objectives of the Study

Specifically, the study seeks to achieve the following objectives:

i. determine the difficulty level of each of the items of the 2019 NBAIS English Language examination
ii. determine the discrimination level of each of the items of the 2019 NBAIS English Language examination
iii. determine the effectiveness of the distractors of each of the items of the 2019 NBAIS English Language examination

1.3 Research Questions

The following research questions guided the study:

i. What is the difficult index of each of the items of the 2019 NBAIS English Language examination?
ii. What is the discrimination index of each of the items of the 2019 NBAIS English Language examination?
iii. To what extent are the distracters of the options of the items of the 2019 NBAIS English Language examination plausible?

2.0 METHODOLOGY

The design employed in this study was Ex post facto design. The population of this study consisted of all the registered candidates for the 2019 NBAIS English language examination in Nigeria which was Thirty-six thousand, one hundred and forty-one (36,141). The sample was made up of 1134 candidates who sat for the 2019 NBAIS English language examination in Nigeria selected through multistage stratified random sampling technique. The instrument for data collection were the responses of candidates to 2019 NBAIS English Language Papers I test items. The item analysis was carried out on all the one hundred (100) multiple choice items of 2019 NBAIS English Language Papers I from the CTT framework using MS Excel programme which yielded item statistics that serve as data for the descriptive statistics (frequency count and percentage) that were used to answer the research questions.

2.1 Results

Research Question One: What is the difficulty index of each of the items of the 2019 NBAIS English Language examination?

To answer this research question, the p-value of each of the item was calculated and the result was produced in table 1 below:

Table 1: P-Values of 2019 NBAIS English Language examination

Item	P-value	Item	P-value	Item	P-value	Item	P-value	Item	P-value
1	0.896825	21	0.97619	41	0.830688	61	0.949735	81	0.071429
2	0.970899	22	0.957672	42	0.973545	62	0.708995	82	0.039683
3	0.973545	23	0.44709	43	0.965608	63	0.955026	83	0.044974
4	0.970899	24	0.957672	44	0.973545	64	0.92328	84	0.039683
5	0.825397	25	0.984127	45	0.910053	65	0.944444	85	0.005291
6	0.970899	26	0.989418	46	0.970899	66	0.825397	86	0.031746
7	0.94709	27	0.992063	47	0.949735	67	0.89418	87	0.005291
8	0.986772	28	0.939153	48	0.925926	68	0.952381	88	0.007937
9	0.912698	29	0.970899	49	0.357143	69	0.933862	89	0.055556
10	0.960317	30	0.960317	50	0.383598	70	0.886243	90	0.002646
11	0.809524	31	0.984127	51	0.391534	71	0.933862	91	0.005291
12	0.957672	32	0.989418	52	0.383598	72	0.87037	92	0.060847
13	0.965608	33	0.984127	53	0.383598	73	0.936508	93	0.005291
14	0.960317	34	0.984127	54	0.378307	74	0.962963	94	0.007937
15	0.970899	35	0.984127	55	0.92328	75	0.801587	95	0.005291
16	0.960317	36	0.939153	56	0.955026	76	0.02381	96	0.031746
17	0.828042	37	0.973545	57	0.843915	77	0.018519	97	0.002646
18	0.793651	38	0.970899	58	0.952381	78	0.039683	98	0.002646
19	0.949735	39	0.957672	59	0.944444	79	0.044974	99	0.026455
20	0.968254	40	0.962963	60	0.955026	80	0.034392	100	0.026455

From table 1 above, frequency count and simple percentage was used in analyzing the data in Table 1 above. The result of the analysis is given in the table 2 below:

Table 2: Numbers and percentages of items according to their difficulty levels

Very Difficult		Difficult		Moderate		Easy		Very Easy	
N	%	N	%	N	%	N	%	N	%
25	25	7	7	0	0	13	13	55	55

Table 2 shows that the items in the 2019 examination differed in their levels of difficulty. As it is shown, 25%, 7%, 13% and 55% of the 100 item of the 2019 examination were classified as very difficult, difficult, easy and very easy respectively. It should be noted that none of the item is moderate in its difficulty. As a result of this, answer to the research question 1 is that the difficulty index of each of the items of the 2019 NBAIS English Language examination is (25%+7%= 32%).

Research Question 2: What is the discrimination index of each of the items of the 2019 NBAIS English Language Examination?

To answer this research question, the Discrimination indices (DI) of each of the item was calculated and the result was produced in table 3 below:

Table 3: Discrimination indices (DI) of 2019 NBAIS English Language examination

Item	DI	Item	DI	Item	DI	Item	DI	Item	DI
1	-0.00133	21	0.097082	41	0.57224	61	0.071546	81	0.021272
2	0.027139	22	0.165912	42	0.252495	62	0.618803	82	0.048561
3	0.058654	23	0.378213	43	0.07186	63	0.161065	83	0.100322
4	0.13563	24	0.091321	44	0.11547	64	0.263385	84	0.119997
5	0.575069	25	0.097543	45	0.12461	65	0.096132	85	0.111563
6	0.113293	26	-0.02191	46	0.027139	66	0.649949	86	0.270862
7	0.028993	27	0.017318	47	0.051908	67	0.073583	87	0.074597
8	0.069364	28	0.091914	48	0.134636	68	0.181816	88	0.115662
9	0.071284	29	0.266456	49	0.426557	69	0.193966	89	-0.00013
10	-0.0101	30	0.11629	50	0.32155	70	0.204506	90	0.115328
11	0.487295	31	0.140457	51	0.335876	71	0.241446	91	0.148529
12	0.038042	32	0.151067	52	0.366774	72	0.216837	92	0.058413
13	0.033598	33	0.007425	53	0.349126	73	0.098805	93	0.030238
14	0.069582	34	0.050338	54	0.370973	74	0.188495	94	0.13984
15	0.13563	35	0.093252	55	0.106195	75	0.701534	95	0.133742
16	0.190473	36	0.035822	56	0.075661	76	0.068268	96	-0.13295
17	0.652525	37	0.118812	57	0.600504	77	0.072863	97	0.115328
18	0.614293	38	0.122866	58	-0.02219	78	0.062299	98	0.094445
19	0.218835	39	0.035378	59	0.086766	79	-0.01096	99	0.115134
20	0.068711	40	0.250976	60	0.013549	80	0.113563	100	0.115134

The data in the table 3 above were analyzed through the use of frequency count and simple percentage. The result of the analysis is reflected in the table 4 below:

Table 4: Numbers and percentages of items by categories of Discrimination Power.

Good		Moderate		Poor		Total	
N	%	N	%	N	%	N	%
10	10	14	14	76	76	100	100

For the year 2019, 10% of the items were good, 14% were moderate while the rest 76% were poor in their discriminatory capacity between the higher and lower achievers. This means that majority of the items in the 2019 NBAIS English Language examination could not discriminate well. Therefore, the answer to the research question 2 above is that the discrimination index of each of the items of the 2019 NBAIS English Language examination is 76%.

Research Question 3: To what extent are the distracters of the options of the items of the 2019 NBAIS English Language examination plausible?

To answer this research question, the effectiveness and ineffectiveness of the distractors of each of the item was calculated and the result was produced in table 5 below:

Table 5: Distractors' indices in the 2019 NBAIS English Language examination

Item	1/A%	2/B%	3/C%	4/D%	Item	1/A%	2/B%	3/C%	4/D%
1	4.232804	3.174603	2.910053	89.68254	51	14.81481	39.15344	17.98942	28.04233
2	1.058201	1.322751	97.08995	0.529101	52	32.80423	12.69841	38.35979	16.13757
3	0.793651	1.322751	97.3545	0.529101	53	23.54497	38.35979	27.77778	10.31746
4	97.08995	1.322751	0.529101	1.058201	54	15.60847	30.42328	16.13757	37.83069
5	82.53968	2.645503	1.851852	12.96296	55	92.32804	1.322751	3.174603	3.174603
6	0.793651	0.529101	97.08995	1.587302	56	95.50265	1.322751	1.322751	1.851852
7	1.587302	94.70899	2.380952	1.322751	57	84.39153	1.058201	13.75661	0.793651
8	0.529101	0.26455	98.67725	0.529101	58	0.26455	1.058201	3.439153	95.2381
9	2.380952	91.26984	1.058201	5.291005	59	0.529101	2.645503	2.380952	94.44444
10	1.587302	0.529101	96.03175	1.851852	60	95.50265	1.851852	1.851852	0.793651
11	80.95238	14.28571	0.793651	3.968254	61	0.793651	1.058201	94.97354	3.174603
12	0.26455	1.058201	95.7672	2.910053	62	4.232804	17.19577	7.671958	70.89947
13	1.322751	96.56085	1.322751	0.793651	63	1.322751	1.322751	1.851852	95.50265
14	1.058201	96.03175	1.322751	1.587302	64	92.32804	3.703704	2.645503	1.322751
15	97.08995	1.058201	1.851852	0	65	1.587302	1.851852	94.44444	2.116402
16	96.03175	2.116402	1.058201	0.793651	66	1.851852	82.53968	14.02116	1.587302
17	14.81481	1.058201	1.322751	82.80423	67	2.910053	89.41799	4.497354	3.174603
18	16.93122	1.322751	79.36508	2.380952	68	95.2381	2.645503	1.322751	0.793651
19	1.851852	94.97354	2.910053	0.26455	69	93.38624	2.380952	2.645503	1.587302
20	1.587302	1.058201	96.8254	0.529101	70	88.62434	6.349206	1.587302	3.439153
21	0.793651	0.793651	97.61905	0.793651	71	93.38624	2.910053	1.851852	1.851852
22	1.851852	95.7672	1.058201	1.322751	72	87.03704	3.968254	6.878307	2.116402
23	12.69841	25.92593	44.70899	16.66667	73	93.65079	1.587302	2.116402	2.645503
24	0.26455	3.703704	0.26455	95.7672	74	1.322751	0.793651	1.587302	96.2963
25	1.058201	0.26455	0.26455	98.4127	75	14.02116	80.15873	3.703704	2.116402
26	98.9418	0.529101	0.26455	0.26455	76	2.380952	51.0582	30.95238	15.60847
27	0.26455	0.26455	99.20635	0.26455	77	27.77778	34.12698	1.851852	35.97884
28	1.322751	93.91534	2.116402	2.645503	78	44.17989	3.968254	33.86243	17.98942
29	0.529101	0.529101	97.08995	1.851852	79	4.497354	35.71429	23.28042	36.50794
30	96.03175	1.322751	0.529101	2.116402	80	50.26455	3.439153	20.89947	25.39683
31	98.4127	0.529101	0	1.058201	81	*7.142857*	42.59259	29.10053	21.16402
32	98.9418	0.793651	0.26455	0	82	24.07407	3.968254	49.20635	22.75132
33	0	98.4127	1.322751	0.26455	83	36.77249	23.28042	4.497354	35.18519
34	0.529101	98.4127	0.793651	0.26455	84	3.968254	48.9418	15.07937	31.74603
35	0.529101	0.529101	98.4127	0.529101	85	0.529101	31.74603	29.89418	37.83069
36	0.26455	93.91534	5.026455	0.793651	86	3.174603	21.16402	42.85714	32.80423
37	97.3545	1.322751	0.529101	0.793651	87	0.529101	27.24868	42.85714	29.36508
38	1.058201	97.08995	1.322751	0.529101	88	0.793651	28.57143	38.09524	32.53968
39	1.851852	95.7672	1.058201	1.322751	89	5.555556	21.16402	25.13228	48.14815
40	1.058201	0.793651	96.2963	1.851852	90	0.26455	36.50794	30.68783	32.53968
41	83.06878	2.380952	13.75661	0.793651	91	0.529101	34.92063	38.88889	25.66138
42	0.793651	0.529101	1.322751	97.3545	92	28.57143	6.084656	14.81481	50.5291
43	0.529101	96.56085	1.322751	1.587302	93	48.14815	23.28042	0.529101	28.04233
44	1.587302	0.793651	97.3545	0.26455	94	30.68783	0.793651	21.95767	46.56085

45	2.116402	1.587302	91.00529	5.291005	95	45.7672	39.15344	14.55026	0.529101
46	1.058201	97.08995	1.322751	0.529101	96	3.174603	35.18519	32.80423	28.83598
47	2.116402	94.97354	1.851852	1.058201	97	28.30688	27.24868	0.26455	44.17989
48	0.793651	92.59259	0.793651	5.820106	98	34.39153	0.26455	25.92593	39.41799
49	39.15344	35.71429	12.69841	12.43386	99	22.22222	44.44444	2.645503	30.68783
50	36.77249	38.35979	10.58201	14.28571	100	2.645503	36.50794	34.12698	26.71958

The data in the table 5 above were analyzed through the use of frequency count and simple percentage. The result of the analysis is reflected in the table 6 below:

Table 6: Percentages of effective and ineffective distractors of 2019 NBAIS English Language examination

No of distractors	No of effective distractors	%	No of ineffective distractors	%
300	90	30	210	70

As for the 2019 examination, out of the 300 distractors, only 90 (30%) items were effective, the rest 210 (70%) were ineffective. This connotes that majority of the items (210) in the 2019 NBAIS English Language examination were ineffective. Therefore, the answer to the research question 3 above is that the distracters of the options of the items of the 2019 NBAIS English Language examination were plausible with 30%.

3.0 DISCUSSION OF FINDINGS

The finding of this study on the difficulty index of each of the items of the 2019 NBAIS English Language examination revealed a low difficulty index. These showed that majority of the items were easy. The finding is in agreement with Olutola (2015), Moyinoluwa (2015) whose findings revealed that most of the items in their studies were easy items and that of Odukoya, Adekeye, Igbinoba and Afolabi (2017) whose study found that majority of the items did not meet psychometric standard in terms of difficulty and distractive indices. The finding is also in resonance with Wirngo (2021) who found that the test under investigation lacked the right difficulty level and had a poor high discrimination power. Thus, the result obtained showed that the national achievement test studied was easy, thus depicting the good performance of pupils. Easy items in a summative evaluation such as that of NBAIS can have several implications, both positive and negative.

However, the finding is in contradiction with the findings of Rehman, Aslam, and Hassan (2018) who found that difficult questions dominated the selected multiple-choice items analyzed, with more than 50% of the total number of the questions has a difficulty level of more than 0.71. Also, Jannah, Hidayat, Husna, Khasbani (2021) whose result shows that the majority of the questions on the test items were not too difficult or easy for the test takers to answer.

The study also revealed that many items in the 2019 NBAIS English language examination could not discriminate between higher and lower achievers. The finding is in line with the findings of Odukoya, Adekeye, Igbinoba, and Afolabi (2017) whose result indicated that most

of the items were not constructed in such a way that met the appropriate level of difficulty and good distractive index. The study then suggested the reconstruction of the question items. Also, Wirngo (2021) found that the test under investigation had about 80% of the items DIF were easy with poor discrimination indices.

However, the finding negates the findings of Olatunji and Owolabi (2009) whose works showed items with different discrimination abilities. In the same vein, the finding is in contradiction with the finding of Ugodulunwa and Barko (2015) which revealed that 57.14% of the 63 items have excellent discrimination, 15.87% are good, while 6.35% are acceptable and that 20.64% only are poor. The inability to discriminate between higher and lower examinees has implications for the quality of the test or assessment. Some possible reasons for the items lacking discrimination are that since the items are too easy for the target population, there may be limited variability in responses. In such cases, both higher and lower examinees performed similarly, leading to reduced item discrimination.

The last finding from the study indicated that many of the distractors in the items of 2019 NBAIS English Language examination were ineffective in distracting examinees from the keys. The finding however disagreed with the results of Olutola, Owolabi and Daramola (2015) who investigated options functionality of Economics and Biology SSCE conducted by the same examination bodies, WAEC and NECO, used in their study. They found out that WAEC 4-options in Economics and Biology respectively had 82% and 95% functional options. In classical test theory, ineffective distractors in test items have implications for the quality and utility of the test.

4.0 CONCLUSION

From the results of the present study, the following conclusion was drawn: the proportions of the difficult items, the discrimination index and distractors effectiveness in the 2019 NBAIS English Language examinations were not enough for certification purposes. There is the need for the examination body to ensure that items are subjected to item analysis at the stage of item construction.

4.1 Recommendations

1. There is need for the examination body to aim for a balanced mix of easy, moderate, and difficult items to adequately assess the full range of test-takers' abilities.
2. NBAIS should develop test items that demand higher-order thinking which are more likely to discriminate between higher and lower achievers.
3. NBAIS should engage in Review Distractor Quality and Distractor Analysis in order to improve the effectiveness of distractors.

REFERENCES

Adedoyin, O.O. & Makobi, T. (2013). Using Item Response Theory in examining the quality of Junior Certificate Mathematics Multiple Choice Examination Test Items. International Journal of Asians Social Sciences, 3(4), 992-1011.

Bichi, A. A. (2015). Item Analysis using a derived Science Achievement Test Data. International Journal of Science and Research, 4(5), pp. 1656-1662.

Bichi, A. A., & Embong, R. (2018). Evaluating the quality of Islamic civilization and Asian civilizations examination questions. Asian People Journal, 1(1), pp. 93-109.

Hingorjo, M.R. & Jaleel, F.(2012).Analysis of One-best MCQs: The Difficulty Index, Discrimination Index and Distracters' Efficiency. J Pak Med Assoc. 62(2), 142–147.

Jannah,R., Hidayat,D.N., Husna,N.& Khasbani,I. (2021). An Item Analysis on Multiple Choice Questions : A case of a Junior High School English Try–out Test in Indonesia. Leksika: Jurnal Bahasa, Sastra dan Pengajarannya, 15(1), 9-17.

Mehta, G. & Mokhasi, V. (2014). Item Analysis of Multiple Choice Questions- An Assessment of the Assessment Tool. International Journal of Health Sciences Research, vol 4, pp. 197-202.

Moyinoluwa,T. D. (2015). Analysing the Psychometric Properties of Mathematics in Public Examinations in Nigeria. Research on Humanities and Social Sciences, 5(7) pp. 24-30.

Odukoya, J.A., Adekeye, O., Igbinoba, A.O. &Afolabi, A. (2017). Item Analysis Of University-Wide Multiple Choice Objective Examinations: The Experience Of A Nigerian Private University. European Journal of Methodology. 52(3), 983-997.

Olatunji, D.S. and Owolabi, H.O. (2009). Difficulty and Discrimination of Senior School Certificate Economics Objective Test Items with various option formats. Ilorin Journal of Education, vol. 28, pp. 50-64.

Olutola, A.T. (2015). Item Difficulty And Discrimination Indices Of Multiple Choice Biology Tests. Liceo Journal of Higher Education Research, 11(1), pp. 16-30.

Olutola, A. T., Owolabi, H. O. & Daramola, D. S. (2015). Analysis of Functioning and Non-Functioning Decoys in Multiple-Choice Biology Items. FUDMA Journal of Science and Educational Research. Vol.1, pp.17-23.

Osarumwense, H.J. & Oyedeji, S. O. (2015). Empirical Comparison of methods of establishing of Items Difficulty Index of Test items using Classical Test Theory (CTT). Journal of Educational Policy and Entrepreneurial Research, 2(10), pp. 98-109.

Rehman, A., Aslam,A. and Hassan,S. H. (2018). Item Analysis of Multiple Choice Questions. Pakistan Oral & Dental Journal, 38(2), pp. 291-293.

Ugodulunwa, C. and Barko,L. (2015). Analysis of Psychometric Properties of Business Studies Junior Secondary Certificate Examination in Plateau State, Nigeria. Online International Interdisciplinary Research Journal, Vol. 2, pp. 165-171.

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Wirngo, T.E. (2021). Test Quality and Students' Performances: An Appraisal of the National Achievement Test in English and Mathematics for Cameroon Primary Schools. European Journal of Educational Studies. 8(8) pp.78-93.

