

Item Type on Senior Secondary Schools Students' Performance in Mathematics in Abak Local Government Area, Akwa Ibom State, Nigeria

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Abstract

This study determined the influence of item type on Senior Secondary School Students' academic performance in Mathematics in Abak, Akwa Ibom State Using ex-post facto research design and instrumentation research design, the study collected data from a stratified random sample of 389 from a population of 4,483 co-educational SSS2 students' in Abak Local Government Area of Akwa Ibom State. Two researcher made valid instruments- Mathematics Performance Test based on Item type (MPTIT) were used for data collection. These instruments had reliability indices of 0.87, 0.85 and 0.83 respectively. Mean and standard deviation were used to answer the research questions, while analysis of variance repeated measures was used to test the hypotheses at 0.05 level of significance. Results showed that there is no significant influence of item type on students' on students' academic performance in Mathematics; there is no significant interaction effect of gender and item type on students' performance in Mathematics; there is a significant interaction effect of item type and location on students' academic performance in Mathematics. Based on the findings, it is concluded that changes in Mathematics item in a test is accompanied with changes in students' performance as well as the psychometric properties of the test items.

Keyword: Academic, Gender, Item, Mathematics, Performance

Introduction

Mathematics is a cornerstone of the educational curriculum, serving as a gateway to advanced studies in various fields of human endeavor including military, engineering, agriculture, economics, marketing, architecture, accounting and the sciences. Naturally, mathematics is by its nature concerned with objective and quantitative measurement of ideas and concepts in the environment. In senior secondary schools, Mathematics performance and assessments are critical for evaluating students' understanding and mastery of concepts.

Government has set up the National Mathematical Centre to help co-ordinate and motivate students towards effective learning of Mathematics in the schools. One of the cardinal responsibilities of the National Mathematics Centre is to make sure that youths are groomed to develop scientific attitude and develop active interests and skills in mathematics in the schools. In spite of the steps being taken, students' performances in Mathematics in the senior secondary schools and indeed, in the external examination have remained low (Umoinyang & Abasi, 2020). In fact, many scholars have advocated for the mixing up of the order of test items from examination to examination and more especially, whether the types

of items of presenting the item could improve the testees' chance of performing well in a test (Eduwem et al., 2017). This view is in support of Eduwem and Umoinyang (2014) who maintain that multiple forms of an examination used frequently is a means of reducing the likelihood of cheating in large classes.

Several factors have been outlined by scholars as factors affecting the performance of students in secondary school Mathematics. These factors include: test item types (Eduwem & Umoinyang, 2014); school management, quality assurance practices (Nkoyo, 2022); school community relationship, students' perception, students' personality, political, economic, home and psycho-social factors (Umoinyang & Abasi, 2020; Adeyemi & Adeyemi, 2014). Specifically, Thomas and Thomas (2025); Michael (2015), suspects the use of teaching aids by educators, parental association, head instructors' administration, environmental impact and parents' socio economic status as being correlates of students' performance in Mathematics. Today, many Nigerian Universities and Polytechnics are organizing remedial and preliminary programmes, which seek to impart basic Mathematics skills that should have been acquired at the secondary school levels (Owan *et al.*, 2018).

Different item type- Multiple Choice Questions (MCQs), essay type questions, and completion items are employed to assess students' Mathematical abilities. These assessment types can significantly influence students' performance, learning outcomes, and even their attitudes towards the subject. Items differ in their degree of the freedom given to the students to express themselves on the skills and knowledge they acquired (Etuk *et al.*, 2021). Test item type must be suitable to the learning outcomes, students' age, and appropriate to the assessment objectives. So test developers must choose the best test item type to assess students' performance (Hauck et al., 2017). Ollennu and Etsey (2015) indicated that assessment items should correspond with the content and learning objectives of the lesson.

Multiple choice test questions consist of the problems and set of alternative response options (Abiri, 2015). The options are between four and five, although four options are the most common. It should be noted that the more the number of options in a multiple choice question, the less the influence of mere guessing. From the set of alternative options, only one of the options is correct while the others are distracters. These distracters sound like possible answer so that only those who know what is being asked would be able to pick out the correct option (Abiri, 2015). Multiple choice items have both its strengths and weaknesses. Part of the strengths is its characteristics of objectivity and high reliability (Dong & Cory, 2022). The answers to multiple choice questions are easy to correct, especially for a large group of students (Osadebe, 2015).

In contrast, essay type tests allow students to communicate their ideas freely by writing. It has no restriction to list of choices and students can express themselves in their own language (Opara, 2021). On the other hand, it is difficult to cover the objectives of the course through this item type of testing, the scoring process could be subjective and difficult, it is not easy to computerize such type of examination especially in terms of the scoring process and in addition there is a bluffing problem (Effiom & Bassey, 2018). Essay type questions are wonderful way to test higher-level learning, but they require careful construction to maximize their assessment effectiveness (Karjanto & Yong, 2015). While essay questions can assess all the cognitive domains, most educators suggest that due to the time required to answer them, essay questions should not be used if the same material can be accessed through a multiple-choice item.

The completion item or supply objective test type demands that the testee supplies the answer by filling in or supplying the correct response. Completion items may evaluate a

student's ability to recall specific facts or apply particular formulas (Igbojinwaekwu 2015). Understanding the impact of these varied item type on student performance is essential for educators aiming to design effective assessments that not only measure knowledge but also promote learning.

Research indicates that the type of assessment can affect cognitive processes differently. For instance, MCQs often assess recall and recognition, while essay-type questions may engage students in higher-order thinking, requiring analysis and synthesis of information (Zalmon et al., 2021). Examining the impacts of these test types on the learning outcomes of students in quadratic equation is the focal point of this investigation.

However, some variables such as gender and school location may influence how students learn when presented with test items types, format arrangement of test items and their academic performance, thus it is important to consider these intervening variables in research in educational test, measurement and evaluation.

Gender is the state of being either a male or female. The debate regarding the potential impacts of gender on students' academic performance is ongoing and has yet to be conclusively resolved (Duru *et al.*, 2024). Gender-related disparities in Mathematics performance and ability are a long-standing source of distress due to the lack of female representation in Mathematics, physical sciences and engineering fields. Hence, more research on gender differences in academic performance is needed to make conclusive implications of the impact of testing on gender may have on students' performance. The inconsistent results on gender are also an area to look into in this study.

Location of schools matters in learner's performance. Ajai and Imoko (2015) opined that school location implies urban-rural setting. Some schools are located in rural while some are in urban areas. It is observed that schools located in the urban areas tend to have more facilities, manpower, and government attention as against those located in the rural areas (Ajai & Imoko, 2015). Duru et al. (2023) have reported significant difference in performance between urban and rural located schools in their studies. Such performance in favor of urban schools, for instance, must have been borne out of many facilities they were used to which not available in the rural locations. Students attending rural schools face challenges of higher poverty than those attending urban schools and with these to a great extent, may have significant impact on the students' performance in Mathematics.

Despite the efforts of government, concerned science educators and educational test, measurement and evaluators to bring about improve student' performance in Mathematics; the level of students' achievement which is a function of their performance in their public examination is still inconsistent. The available statistics from West African Examination Council shows that students continue to perform poorly in Mathematics in the May/June examinations of Mathematics WASSCE result in Akwa Ibom State from 2023 – 2026 (WAEC Result portal Lagos, Nigeria, 2026).

It is still imperative for researchers to consider the contribution of item type arrangement which may also be possible contributors to students' inconsistent performance in Mathematics. The actual performance of students as observed remains a mirage (Umanah et al., 2025; Eduwem & Umoinyang, 2014; Tata et al., 2014). It is based on this persistent inconsistencies in Mathematics performance that made the researcher to further presume item type as a possible factor responsible for or contributing to this problem. In this study, effort will be directed towards finding out if type of test of presenting test items can determine senior secondary school students' performances in Mathematics.

Statement of the Problem

There is a lack of empirical evidence regarding the effectiveness of different item type (MCQs, essay, and completion) on students' performance in Mathematics. This raises questions about which assessment types best facilitate learning and understanding of mathematical concepts. Senior secondary students may exhibit varying levels of performance based on the type of assessment they encounter. It is unclear whether certain item type favors specific groups of students or learning styles, leading to disparities in overall performance. Different item type may induce varying levels of anxiety among students. Understanding how assessment types influence students' confidence and performance can provide valuable insights into improving assessment strategies.

There is a concern that the type of assessments used may not align with the curriculum objectives. Investigating the alignment between item type and curriculum goals can help ensure that assessments accurately measure students' mathematical competencies. The feedback provided through different item type may vary in effectiveness. Understanding how students respond to feedback from MCQs, essay questions, and completion items can inform educators about how best to support student learning.

Though available information suggest that they have been some findings on the positioning of items and its effect on students performance, but not conclusive and also not much has been done in senior secondary schools in Akwa Ibom State, Nigeria. A comprehensive knowledge of the construction of a good test item type can enable us to create more effective test besides standardizing the existing tests. The key question to be answered in the study is: to what extent does item type determine senior secondary students' academic performance in Mathematics?

Purpose of the Study

The purpose of the study is to determine the influence of item type on SS Students' academic performance in Mathematics. Specifically, the objectives of this study will seek to:

1. examine the academic performance of students in Mathematics based on item type
2. determine the performance of male and female students in Mathematics based on item type
3. find out the performance of rural and urban students in Mathematics based on item type.

Research Questions

The following research questions were raised and answered in this study.

1. What difference exists in the academic performance of students in Mathematics based on item type?
2. What is the difference between male and female students academic performance in Mathematics based on item type?
3. What is the difference between rural and urban students academic performance in Mathematics based on item type?

Research Hypotheses

The following hypotheses were formulated and tested at 0.05 alpha level.

1. There is no significant difference in the academic performance of students in Mathematics based on item type.
2. There is no significant difference between male and female academic performance of students in Mathematics based on item type.

3. There is no significant between rural and urban academic performance of students in Mathematics based on item type.

Methodology

The research design adopted in this study is the descriptive survey design and the Instrumentation design was adopted for this study since test instruments was developed and administered on three categories based on item type (Eduwem and Umoinyang, 2014). The item type was arranged in a multiple choice, essay type and completion item assessment questions. The study was carried out in Abak Local Government Area of Akwa Ibom State, Nigeria. Population for the study comprised of all the 4,483 senior secondary two (SS2) Mathematics students in the eleven public secondary schools during 2026/2027 academic session in Abak Local Government Area of Akwa Ibom State, Nigeria. The sample size for the study consisted of 389 SS2 Mathematics students drawn from six selected co-educational public secondary schools using simple random sampling and stratified random sampling techniques was used to select three schools from the urban and three schools from the rural. Students from the six schools were used in their intact classes.

A researcher made instruments titled: Mathematics Performance Test based on Item type (MPTIT) was used for this study. MPTIT is in three parallel forms which are multiple choice, essay and completion. The instrument used primarily for data collection is the Mathematics Performance Test (MPT). The Mathematics Performance Test (MPT) instruments was adopted from a standard examination past question and adapted accordingly into item types (multiple choice, essay and completion item). The instrument were divided into two section A and B. Section A is designed to capture data of students and section B on the other hand is comprised of 90 Mathematics performance test items based on item type. The number of items bearing in each of the three parallel forms of item type include 30 items which elicit information on Item type for multiple choice items from 1-30; for essay type from 31-60; for completion items from 61-90; while each item type were varied by timing of the test administration. The draft of the research instruments MPTIT duly validated and the reliability of the instrument were established through the Kuder Richardson 21 reliability method to ascertain the internal consistency of the instruments. The reliability coefficient obtained was 0.87, 0.85 and 0.83. A correct response/answer was scored one (1) point while a wrong response was scored a zero (0) point in accordance with the examination bodies marking guide.

The research procedure lasted for two weeks. The researcher administered the instrument in each of the respective sampled schools in the urban located schools for one week and the rural located schools for another week on contact with the SS2 students who are intact in their classes during the research procedure. The instruments was administered to students at varying time interval since some of the items are the same considering the parallel form of the test instruments based on item types. The completed instrument was retrieved from the respondents without any loss indicating 100 percent return rate of the administered instrument. In all, the researcher used two weeks to obtain relevant data such as students' answer script from the respective sample schools. Mean and standard deviation were used to answer the research questions while the null hypotheses were tested using repeated measures analysis of variance at 0.05 alpha level of significance. If the p-value is less than 0.05 alpha level, the null hypotheses were rejected, but if otherwise, they were not rejected.

Results and Discussion of Findings

This work presents the data analysis, results, interpretation and discussion of findings.

Answering the Research Questions

Three research questions and three hypotheses were formulated to guide this study. The research questions were answered using mean and standard deviation while the hypotheses tested using repeated measures analysis of variance.

Research Question 1: What difference exists in the academic performance of students in Mathematics based on item type?

In order to answer research question one, mean and standard deviation were used and the result is presented in Table 1.

Table 1: Summary of mean and standard deviation of difference in academic performance of students in Mathematics based on item type

Item types	N	Mean	SD
Essay Test	389	17.97	5.43
Multiple Choice Test	389	17.81	5.34
Completion Test	389	17.92	5.41

n = 389

The result in Table 1 shows if a difference exists in the academic performance of students in Mathematics based on item types. The result indicates that the mean of students' performance in mathematics is 17.97 with standard deviation of 5.43 in essay test; 17.81 with standard deviation of 5.34 in multiple-choice test and 17.92 with standard deviation of 5.41 in completion test. The result shows that there is difference in the academic performance of students in Mathematics based on item type.

Research Question 1: What is the difference between male and female students academic performance in Mathematics based on item type?

In order to answer research question two, mean and standard deviation were used and the result is presented in Table 2.

Table 2: Summary of mean and standard deviation of difference between male and female students academic performance in Mathematics based on item type

Item type	Gender	N	Mean	SD
Essay Test	Male	186	19.92	4.74
	Female	203	16.19	5.42
Multiple Choice Test	Male	186	19.74	4.62
	Female	203	16.04	5.35
Completion Test	Male	186	19.92	4.74
	Female	203	16.08	5.35

n = 389

The result in Table 2 shows the difference between male and female students academic performance in Mathematics based on item type. The result indicates that the mean of male students' performance in Mathematics is 19.92 with standard deviation of 4.74 while

the mean of female students is 16.19 with standard deviation of 5.42 in essay test. The mean of male students' performance in Mathematics is 19.74 with standard deviation of 4.62 while the mean of female students is 16.04 with standard deviation of 5.35 in multiple-choice test. The mean of male students' performance in Mathematics is 19.92 with standard deviation of 4.74 while the mean of female students is 16.08 with standard deviation of 5.35 in completion test. The result shows that there is difference between male and female students academic performance in Mathematics based on item type.

Research Question 3: What is the difference between rural and urban students' academic performance in Mathematics based on item type?

In order to answer research question three, mean and standard deviation were used and the result is presented in Table 3.

Table 3: Summary of mean and standard deviation of difference between urban and rural students academic performance in Mathematics based on item type

Item type	Location	N	Mean	SD
Essay Test	Urban	208	19.90	4.72
	Rural	181	15.76	5.35
Multiple Choice Test	Urban	208	19.73	4.60
	Rural	181	15.61	5.29
Completion Test	Urban	208	19.90	4.72
	Rural	181	15.63	5.26

n = 389

The result in Table 3 shows the difference between urban and rural students academic performance in Mathematics based on item type. The result indicates that the mean of urban students' performance in Mathematics is 19.90 with standard deviation of 4.72 while the mean of rural students is 15.76 with standard deviation of 5.35 in essay test. The mean of urban students' performance in Mathematics is 19.73 with standard deviation of 4.60 while the mean of rural students is 15.61 with standard deviation of 5.29 in multiple-choice test. The mean of urban students' performance in Mathematics is 19.90 with standard deviation of 4.72 while the mean of rural students is 15.63 with standard deviation of 5.26 in completion test. The result shows that there is great difference between urban and rural students academic performance in Mathematics based on item type.

Testing the Hypotheses

Research Hypothesis 1: There is no significant difference in the academic performance of students in Mathematics based on item type.

In order to test hypothesis one, repeated measures analysis of variance was employed and the result is shown in Table 4.

Table 4: Summary of repeated measures analysis of variance of difference in the academic performance of students in Mathematics based on item types

Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon				
				Greenhouse-Geisser	Huynh-Feldt	Lower-bound		
.582	209.423	2	.000	.705	.707	.500		
Sources of variation				Type III Sum of Squares	Df	Mean Square	F	Sig.
Item type	Sphericity Assumed			5.404	2	2.702	6.823	.061
	Greenhouse-Geisser			5.404	1.411	3.831	6.823	.064
	Huynh-Feldt			5.404	1.414	3.821	6.823	.064
	Lower-bound			5.404	1.000	5.404	6.823	.069
Error (Item type)	Sphericity Assumed			307.263	776	.396		
	Greenhouse-Geisser			307.263	547.281	.561		
	Huynh-Feldt			307.263	548.686	.560		
	Lower-bound			307.263	388.000	.792		

*Significant at $p \leq .05$, $n = 389$

As shown in Table 4, the Mauchly's test of sphericity reveals that the assumption of sphericity has been violated since the p-value of .000 is less than .05 at χ^2 of 209.423 with degree of freedom of 2. When assumption of sphericity is violated, the degrees of freedom can be corrected using Greenhouse-Geisser estimate of sphericity ($\epsilon = .705$). Thus, this result indicates that the hypothesis is not significant because p-value of .064 is greater than .05 at F of 6.823 with degree of freedom of 1.411. Therefore, there is no significant difference in the academic performance of students in Mathematics based on item type.

Research Hypotheses 2: There is no significant difference between male and female academic performance of students in Mathematics based on item type.

In order to test hypothesis two, repeated measures analysis of variance was employed and the result is shown in Table 5.

Table 5: Summary of repeated measures analysis of variance of difference between male and female students academic performance in Mathematics based on item type

Item type	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon				
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound		
	.580	209.968	2	.000	.704	.708	.500		
Sources of variation					Type III Sum of Squares	Df	Mean Square	F	Sig.
Item type		Sphericity Assumed			5.479	2	2.739	6.927	.071
		Greenhouse-Geisser			5.479	1.409	3.889	6.927	.074
		Huynh-Feldt			5.479	1.416	3.869	6.927	.074
		Lower-bound			5.479	1.000	5.479	6.927	.079
Item type * Gender		Sphericity Assumed			1.167	2	.583	1.475	.229
		Greenhouse-Geisser			1.167	1.409	.828	1.475	.231
		Huynh-Feldt			1.167	1.416	.824	1.475	.231
		Lower-bound			1.167	1.000	1.167	1.475	.225
Error (Item type)		Sphericity Assumed			306.096	774	.395		

Greenhouse-Geisser	306.096	545.242	.561
Huynh-Feldt	306.096	548.055	.559
Lower-bound	306.096	387.000	.791

*Significant at $p \leq .05$, $n = 389$

As shown in Table 5, the Mauchly's test of sphericity reveals that the assumption of sphericity has been violated since the p-value of .000 is less than .05 at χ^2 of 209.968 with degree of freedom of 2. When assumption of sphericity is violated, the degrees of freedom can be corrected using Greenhouse-Geisser estimate of sphericity ($\epsilon = .704$). Thus, this result indicates that the hypothesis is not significant because p-value of .231 is greater than .05 at F of 1.475 with degree of freedom of 1.409. Therefore, there is no significant difference between male and female academic performance of students in Mathematics based on item type.

Research Hypotheses 3: There is no significant between rural and urban academic performance of students in Mathematics based on item type.

In order to test hypothesis three, repeated measures analysis of variance was employed and the result is shown in Table 6.

Table 6: Summary of repeated measures analysis of variance of difference between rural and urban students' academic performance in Mathematics based on item type

Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon			
				Greenhouse-Geisser	Huynh-Feldt	Lower-bound	
.586	210.512	2	.000	.707	.709	.500	
Sources of variation				Type III Sum of Squares	Df	Mean Square	F Sig.
Item type	Sphericity Assumed			5.262	2	2.631	6.656 .001
	Greenhouse-Geisser			5.262	1.408	3.737	6.656 .004
	Huynh-Feldt			5.262	1.415	3.718	6.656 .004
	Lower-bound			5.262	1.000	5.262	6.656 .000
Item type * Location	Sphericity Assumed			1.330	2	.665	1.683 .006
	Greenhouse-Geisser			1.330	1.408	.945	1.683 .004
	Huynh-Feldt			1.330	1.415	.940	1.683 .004
	Lower-bound			1.330	1.000	1.330	1.683 .005
Error (Item type)	Sphericity Assumed			305.933	774	.395	
	Greenhouse-Geisser			305.933	544.928	.561	
	Huynh-Feldt			305.933	547.737	.559	
	Lower-bound			305.933	387.000	.791	

*Significant at $p \leq .05$, $n = 389$

As shown in Table 6, the Mauchly's test of sphericity reveals that the assumption of sphericity has been violated since the p-value of .000 is less than .05 at χ^2 of 210.512 with degree of freedom of 2. When assumption of sphericity is violated, the degrees of freedom can be corrected using Greenhouse-Geisser estimate of sphericity ($\epsilon = .707$). Thus, this result indicates that the hypothesis is significant because p-value of .004 is less than .05 at F of 1.683 with degree of freedom of 1.408. Therefore, there is significant difference between rural and urban students' academic performance in Mathematics based on item type.

Discussion of Findings

From the data analysis done, the discussion of findings is carried out in this sub-section.

Item Type and Students' Academic Performance in Mathematics

The result of this study discovered that there is no significant difference in the academic performance of students in Mathematics based on item type. The finding of this study is consistency with the findings from the studies of Owan and Ekaette (2019) who found that there was no significant difference in the academic achievement of students in Mathematics based on item type. Although students sometimes report that multiple-choice exams are than essay type and completion items, they in some situations could consider multiple-choice type more difficult than essay type and completion item. This study is in contrast with the works of Zalmon et al., (2021) who found that a significant difference exists between the cognitive achievements mean scores of students in algebra evaluated with multiple-choice test types and supply, alternative-response and matching type in favor of multiple-choice test type. Finding from the study highlights the importance of considering the variety of item type in mathematics assessments to provide a comprehensive evaluation of students' academic performance. By incorporating a mix of multiple-choice questions, essay type and completion item task, educators can assess students' knowledge, skills, and understanding in a more accurate reflection of their mathematical proficiency.

Male and Female Students' Academic Performance in Mathematics based on Item Type

The result of analysis indicated that there is no significant difference between male and female academic performance of students in Mathematics based on item types. This study is in line with works of Zalmon *et al.* (2021), who found that male and female students evaluated using the item types showed no significant difference in students' academic achievement in Mathematics. The repeated measures analysis of variance showed that the students evaluated using the multiple-choice test type, essay type with those assessed using the completion item type did not vary significantly over achievement in algebra. Earlier finding by Galle *et al.* (2021) revealed that there is no significant difference in the achievement of students evaluated with item types. It is important to consider the different strengths and weaknesses of male and female students in Mathematics based on item type when designing assessments and implementing instructional strategies. By recognizing and addressing these differences, educators can help all students reach their full potential in Mathematics.

Rural and Urban Students' Academic Performance in Mathematics based on Item Type

The result of analysis indicated that there is significant difference between rural and urban students' academic performance in Mathematics based on item type. The finding of this study is in consonance with the work of Ntibi and Edoho (2017), who found that urban students tend to perform better on multiple-choice, essay and completion item type questions compared to rural students. This could be due to differences in access to resources, quality of education, and teaching methods between urban and rural schools. Urban schools often have more resources, specialized teachers, and technology that may better prepare students for item type's assessments. This study is in consistency with the works of Aramude and Omokhomion (2024) who found that there is a significant difference in academic performance in the urban students' compared to the rural students based on item type.

Additionally, the present study further revealed the difference between urban and rural students academic performance in Mathematics based on item type. The result indicates that the urban students' performed better in Mathematics than the rural students' in essay test while urban students' performed better in mathematics than rural students' in multiple-choice test. Also, urban students' performed better in Mathematics than the rural students in completion test. The result shows that there is a significant difference between male and female students academic performance in Mathematics based on item type.

Conclusion

From the findings, it can be concluded that there is no significant difference in the academic performance of students in Mathematics based on item type; there is no significant difference between male and female academic performance of students in Mathematics based on item type; there is significant difference between rural and urban students' academic performance in Mathematics based on item type.

Recommendations

Based on the conclusion drawn from this study, the following recommendations were made:

- (i) Teachers, examination officers should be educated on the psychometric properties of test and the effects it has on item type
- (ii) The West African Examination Council and other examinations bodies should lead a further research into the use of different types of item type test with the view to finding appropriate adjustment which will automatically adjust the impact of the difference in performances.

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