

Psychological Factors as Predictors of Science Teachers' Attitudes Toward Test Item Construction in Ondo State, Nigeria

Lawrence Olu Gbore

Department of Guidance and Counselling,
Adekunle Ajasin University, Akungba-Akoko, Ondo State

Thomas Olabode Abe

Department of Counselling Psychology,
Bamidele Olumilua University of Education, Science and
Technology, Ikere-Ekiti, Ekiti State.

Olayiwola Ogunbadejo

Department of Guidance and Counselling,
Adekunle Ajasin University, Akungba-Akoko, Ondo State.

Ogunleye Sunday Owabumoye

Department of Guidance and Counselling,
Adekunle Ajasin University, Akungba-Akoko, Ondo State

Ayodeji Johnson Ajele

Department of Guidance and Counselling,
Adekunle Ajasin University, Akungba-Akoko, Ondo State

Ifeyinwa Ogechi Obi

Department of Guidance and Counselling,
Federal College of Education, Okene, Kogi State.

doi: <https://doi.org/10.37745/ijqqr.13/vol14n11729>

Published August 03, 2026

Citation: Gbore L.O., Abe T.O., Ogunbadejo O., Owabumoye O.S., Ajele A.J., Obi I.O. (2026) Psychological Factors as Predictors of Science Teachers' Attitudes Toward Test Item Construction in Ondo State, Nigeria, *International Journal of Quantitative and Qualitative Research Methods*, 14(1),17-29

Abstract: *The study investigated selected psychological factors as predictors of secondary school science teachers' attitudes toward efficient test item construction in Ondo State, Nigeria. Descriptive survey research design was adopted for the study. The sample consisted of one hundred and eight (108) science teachers drawn from the entire population through multistage sampling procedures. The data for the study were collected using structured questionnaire developed by the researchers. The reliability of the two instruments was determined using test-retest method with the coefficient (r) equal 0.68 and 0.73. Descriptive statistics were used to answer two research questions while Multiple Regression and t-test were used for the hypotheses and tested at .05 level of significance. The findings revealed that psychological factors (Teachers' motivation, stress at work, teachers' perception,*

perseverance/endurance and self-efficacy) significantly predicted secondary school science teachers' efficient item construction attitudes ($F = 84.411$; $p < 0.05$), and each with beta weight as teachers' motivation ($\beta = 0.282$, $p < 0.05$) stress at work ($\beta = 0.187$, $p < 0.05$), teachers' perception ($\beta = 0.375$, $p < 0.05$), perseverance/endurance ($\beta = 0.305$, $p < 0.05$) and self-efficacy ($\beta = 0.223$, $p < 0.05$). There was no significant difference between the attitude of male and female science teachers towards efficient items construction ($t = -.028$, $df = 106$, $p > 0.05$). Based on the findings, it was concluded that teachers' attitudes toward efficient test item construction are largely determined by their psychological dispositions rather than gender while teacher's perception was the best predictor among the predictors. Therefore, it was recommended that educational stakeholders should focus on enhancing teachers' motivation, self-efficacy and more on teachers' perception and stress, while implementing strategies to reduce work-related stress.

Keywords: Psychological factors, test item construction, teachers' attitudes

INTRODUCTION

Education is a key tool in the development of the nation, and teachers and learners play a pivotal role in the learning-teaching process. Teachers, especially, are distributors of knowledge, moulders of students' abilities and the quality of education. The actual value of any educational program is thus strongly related to the competence and commitment of the teacher to undertake his/her professional duties. Studies in the last years have highlighted the significant role of teachers even in technologically advanced education settings, as they are irreplaceable in the process of interaction and learning in the classroom (Absolor, 2023). Assessment is an integral part of this process, providing systematic procedures for documenting the learners' knowledge, skills, attitudes and beliefs.

One of the most common approaches to the assessment of education is testing. It is a way of assessing the effectiveness of teaching and pupils' learning. Current studies have shown that appropriate assessment methods like essay and objective tests, formative tests, improve instructional alignment and student learning outcomes (Akcan et al., 2023). It has been widely accepted that both essay and objective test formats have complementary roles in the assessment process, but multiple-choice objective tests are noted for their reliability, efficiency, ease in scoring, and coverage of content domains (Al Hamad et al., 2024). As a result, it is necessary to make valid and reliable test items in order to make meaningful evaluation in education.

Special skills are needed to construct test items such as test item writing, test blueprint development, and statistical item analysis. These processes guarantee content validity and the reliability of measures. This is especially important in the field of science education because of the abstractness and complexity of scientific concepts. Hence, pedagogical content knowledge and competence in assessment is expected from teachers. The study reveals that teachers' knowledge, skills, and self-efficacy play a pivotal role in shaping their instructional effectiveness (Wawire et al., 2025).

Although the importance of assessment practices is known, students' performance in science subjects in many settings like Nigeria seemed to be inconsistent and in Ondo state, it was abysmal. Achievement has been found to vary from one year to the next due to a number of factors, such as teaching quality and assessment. Research indicates that inadequate assessment designs can negatively affect learning

outcomes due to the inaccurate representation of students' competencies (Akcan et al., 2023). This shows that teachers' proficiency and attitude in the construction of test items is important.

Many teachers as noted by Alonge (2004) are found to be deficient in test construction skills perhaps due to less training and less exposure to modern assessment techniques. This act does not relate only to one sex, male or female, teachers but to both. The discussions of issue of dichotomy in performing endeavors when it comes to gender, has been long in literature and still remains current probably due to fragile and ruggedness of female and male persons respectively. Males tend to take risk than female and probably it makes male persons involve in difficult and high-level perseverance, energy demanding, calculating and technical and skillful task such as test construction and standardization. A non-committed, dedicated, internally motivated locus of control male or female teacher is likely to see all the steps of test construction procedures as unnecessary, avoidable and ridiculous demands. The gender debate is getting more and more compelling. From the past, men have performed better than women in traditional sense and women seem to lack esteem and self-confidence in doing academic work compared to men (Gbore, 2006) as stressed by Hermann (1992). Oluwatoyo (2003) revealed that there is no difference in the performance of male and female students in science subjects. However, Anaso (2000) refers to the females as weaker sex and required not to get involved in any form of herculean task such as test construction and standardization. Teachers' attitudes to test construction are likely to be shaped by their perceptions of the complexity and demands of the arts and skills of the task of test construction and validation of good test items. In some instances, construction of tests is seen as stressful and time consuming and this results in non-compliance to standard procedures. This is in line with the fact that the effectiveness of teachers in their duties is closely related to their beliefs, attitudes, competencies, and psychological disposition (Okoye, 2024 and Gbore 2013).

Significantly, teachers' attitudes towards test item construction depend on a few psychological factors (Ogunbadejo, 2025). Of these, self-efficacy appears to be getting primary substantial consideration. According to Aytac (2022), teacher self-efficacy is a teacher's belief in the ability to successfully complete the tasks of teaching and learning and to have an impact on students' learning. Research has consistently demonstrated that teachers who possess high self-efficacy tend to employ effective teaching practices, persevere in the face of difficulties, and ultimately produce superior students' learning achievements (Sellami et al., 2024; Hendricks et al., 2024). Low self-efficacy, on the other hand, has been linked to avoidance of challenging instructional and assessment tasks.

In addition to this, another key psychological determinant that is likely to influence teacher's performance is motivation as it appears to impact commitment, effort and persistence in task execution. Studies reveal that motivated teachers are more effective in class and their students are more motivated as well (Yidana & Acquah, 2024). But it seems that the lack of motivation and working conditions can affect teachers' attitudes towards commitments and responsibilities in their profession, including in assessment practices.

Additionally, occupational stress and anxiety are significant factors that could likely affect teachers' performance and attitudes. Stress has been correlated with decreasing teacher satisfaction, productivity and turnover. Research has shown that stress can have a detrimental effect on teachers' teaching effectiveness and engagement in African contexts (Nwoko, et al (2023). In addition, anxiety, especially for tasks that are high in complexity-like designing a test, can make it more difficult for teachers to effectively discharge classroom assessment of students' learning.

Teacher behaviors in the context of professional tasks are related to psychological constructs like locus of control or perseverance/endurance. Teachers with an internal Locus of Control tend to believe that they are responsible for their actions and results; teachers who have an external Locus of Control may believe that the outcomes are caused by other people or circumstances. On the other hand, perseverance/endurance will help teachers weather the strictures of test construction and standardization.

Given the critical role of assessment in education and the challenges associated with test item construction, it is essential to examine the psychological factors influencing science teachers' attitudes toward the task of test construction. Understanding these factors will provide insights into improving teachers' assessment practices and enhancing the quality of science education. It is against this backdrop that this study investigates some psychological factors as predictors of science teachers' attitudes toward test item construction in Ondo State, Nigeria. Specifically, it:

1. examined the psychological predictors of science teachers' items construction attitudes.
2. examined the contribution of each of the psychological predictors to teachers items construction attitude
3. examined the difference between the items construction attitude of male and female science teachers'

Research Questions

The following research questions were raised to guide the study

1. What is the level of science teachers' perception of psychological factors influencing efficient science teachers' test items construction attitude in secondary schools?
2. What is the attitude of science teachers towards construction of secondary school science achievement test items?

Research Hypotheses

The following hypotheses were generated and tested at 0.05 level of significance:

Ho1: Psychological factors (Teachers' motivation, stress at work, teachers' perception, perseverance/endurance and self-efficacy) will not significantly predict secondary school science teachers' efficient item construction attitudes

Ho2: There is no significant difference between the attitudes of male and female science teachers' towards construction of efficient science achievement test items.

METHODOLOGY

The descriptive survey research was adopted for the study. The sample in this study consisted one hundred and eight (108) science teachers selected from nine schools as respondents in the selected Local Government Area from three senatorial districts constituting Ondo State. The sample was selected from the entire population by using multistage sampling procedures. In the first stage, simple random sampling technique was used to select one Local Government from each of the three senatorial districts in Ondo State. In the second stage, simple random sampling technique was used to select three public secondary schools from each of the selected Local Government Areas to make up nine schools. In the third stage, purposive sampling technique was used to select only science teachers teaching science subjects from senior secondary school classes one to three. Purposive sampling was used in this stage because the target population for this study consisted of only science teachers in public secondary schools.

The data for this study were collected using questionnaire title: Psychological Factors and Science Teachers Item Construction Attitude Questionnaire (PSTICAQ). It comprises two sections (Sections A and B). Section A was used to collect demographic data of the respondents (science teachers) while section B which was designed in the four-point likert scale format of strongly agree (4), agree (3), disagree (2) and strongly disagree (1) was used to collect data on each of the five predictors of science teachers' item construction attitude examined in this study, which was sub-divided into six parts. Part one was used to collect data on motivation, Part two for stress at work. Part three for teachers' perception of their students. Part four for perseverance/endurance and part five with five items for self-efficacy. Each of the parts had five items and as such, the total items of the questionnaire were twenty-five (25)

Science Teachers' Item Construction Attitude Questionnaire (STICAQ). The Science Teachers' Item construction Attitude Questionnaire was developed by the researchers. It was designed to measure science teachers' item construction attitude. It comprises two sections (sections A and B). Section A was used to collect demographic data of the respondents (science teachers) while section B was designed in the 4-point likert scale format of strongly agree (4), agree (3), disagree (2) and strongly disagree (1). There were 15 items in section B, and the respondents were expected to indicate their level of agreement or disagreement to each of the statements.

The reliability of the instruments was determined through the use of test-retest method. The sets of questionnaires were administered to 20 teachers outside the study areas who were not part of the actual study twice at interval of two weeks. The scores obtained from first and second administration of the instruments were subjected to Pearson Product Moment Correlation. The computed correlation coefficient SPTICAQ was 0.68, and SICAQ was 0.73. The data collected were analysed using descriptive and inferential statistics. The two research questions were answered using descriptive statistics. Multiple Regression was used to test hypothesis one while t-test was used to test hypothesis two. The two hypotheses were tested at 0.05 level of significance.

RESULTS

Research Question 1: What is the level of science teachers' perception of psychological factors influencing efficient science teachers' test items construction attitude in secondary schools?

To answer research question one, data collected on science teachers' perception of psychological factors influencing efficient science teachers' items construction in secondary schools in Ondo State as rated by science teachers were used to answer research question one. The decision rule in likert formant scale where strongly agree = 4, agree = 3, disagree = 2 and strongly disagree = 1, was used, this gave the total of 10 points, that is, $4 + 3 + 2 + 1 = 10$ divided by 4 which is equal to 2.50 was used as benchmark. The result is presented on Table 1 to show the level of science teachers' perception of psychological factors influencing efficient science teachers' items construction attitude in secondary schools in Ondo State, Nigeria.

Table 1: The level of science teachers' perception of Psychological factors influencing efficient science teachers' test items construction attitude in secondary schools in Ondo State

S/N	Items		Responses					
			SA	A	D	SD	$\bar{x}$	RM K
A	Teachers' Motivation							
1	If teachers are motivated, they will construct better test items.	F	58	32	12	6	3.3	SA
		%	53.7	29.6	11.1	5.6		
2	Recommendations are given to teachers in my school based on their performances.	F	75	23	8	2	3.6	SA
		%	69.4	21.3	7.4	1.9		
3	Teachers are well motivated in my school.	F	62	20	16	10	3.2	SA
		%	57.4	18.5	14.8	9.3	3.2	
B	Stress at Work							
4	I do not like giving assignments to my students because of the stress of marking it.	F	30	28	45	5	2.8	SA
		%	27.8	25.9	41.7	4.6		
5	I take more than six classes in a day.	F	23	33	17	35	2.4	SD
		%	21.3	30.6	15.7	32.4		
6	If I have my way I'll leave this teaching profession because of the stress		10	5	28	65	1.6	SD
			9.3	4.6	25.9	60.2		
C	Teachers' Perception							
7	Students learning progress should be a thing of concern to all teachers.	F	83	10	5	10	3.5	SA
		%	76.9	9.3	4.6	9.3		
8	Individual differences that exist among students should be taken into consideration by the teachers.	F	86	5	9	8	3.6	SD
		%	79.6	4.6	8.3	7.4		
9	All students are teachable if good methods of teaching are used.	F	92	6	10	0	3.8	SA
		%	85.2	5.6	9.3	0		
D	Perseverance/Endurance							
10	I am determined to succeed in my teaching career despite all setbacks.	F	89	5	7	7	3.6	SA
		%	82.4	4.6	6.5	6.5		
11	Though teaching is burdensome but I made efforts to improve my teaching skills.	F	72	15	13	8	3.3	SA
		%	66.7	13.9	12.0	7.4		
12	I made it a point of duty to cover the scheme of work for every term.	F	77	12	15	4	3.5	SA
		%	71.3	11.1	13.9	3.7		
13	Determination is the key to the construction of good items.	F	82	8	9	9	3.5	SA
		%	75.9	7.4	8.3	8.3		
14	I can construct good test item.	F	37	30	27	14	2.8	SA
		%	34.3	27.8	25	13.0		
E	Self-efficacy							
15	Based on teaching experience, all teachers should be able to construct good test items.	F	41	22	18	27	2.7	SA
		%	38.0	20.4	16.7	25		
16	I am a master over my subject	F	38	28	32	10	2.8	SA
		%	35.2	26.0	29.6	9.3		
17	No area is too difficult to handle in my subject area.	F	44	20	23	21	2.8	SA
		%	40.7	18.5	21.3	19.4		
Percentage Average/ Av. of Means		F	58.8	17.8	17.3	14.2	3.4	
		%	54.4	16.5	16.0	13.2		

Source: Field Work, 2025

The analysis of data on Table 1 by mean point revealed the level of science teachers' perception of psychological factors influencing efficient science teachers' test items construction attitude in secondary schools in Ondo State. On motivation, a mean value of 3.4 was recorded which is far greater than the benchmark of 2.5, this means that the level of science teachers' perception of the influence of motivation towards efficient science teachers' test items construction attitude in Ondo State secondary schools is very high. Stress at work recorded a mean value of 2.7 was recorded which is greater than the benchmark of 2.5 but with less degree to that of motivation, this implies that the level of science teachers' perception of the influence of stress at work towards efficient science teachers' test items construction attitude in Ondo State secondary schools is highly low based critically on the negative response of the respondents.

Teachers' perception recorded a mean value of 3.6 which was greater than the benchmark of 2.5, this means that the level of science teachers' perception of the influence of teachers' perception towards efficient science teachers' test items construction attitude in Ondo State secondary schools is very high. Perseverance/endurance recorded a mean value of 3.5 which is also greater than the benchmark of 2.5, this means that the level of science teachers' perception of the influence of perseverance/endurance towards efficient science teachers' test items construction attitude in Ondo State secondary schools is very high. Self-efficacy recorded a mean value of 2.8 which is greater than the benchmark of 2.5, this means that the level of science teachers' perception of the influence of self-efficacy towards efficient science teachers' test items construction attitude in Ondo State secondary schools is high. The grand mean of 3.2 implies that the level of science teachers' perception of psychological factors towards efficient science teachers' test items construction attitude in secondary schools is very high in Ondo State, Nigeria.

Research Question 2: What is the attitude of science teachers towards construction of secondary school science achievement test items?

In answering this research question, data collected on the attitude of science teachers towards construction of secondary school science achievement test items in Ondo State as rated by science teachers were used to answer research question two. The results were presented on Tables 2 to show the attitude of science teachers towards construction of secondary school science achievement test items in Ondo State.

Table 2: The attitude of science teachers' towards construction of secondary school science achievement test items in Ondo State.

S/N	Items		Responses					
			SA	A	D	SD	$\bar{x}$	RM K
1	Good items are components of learning objectives	F	35	50	20	3	3.1	A
		%	32.4	46.3	18.5	2.8		
2	I like to always write items with the same difficulty level	F	56	22	22	8	3.2	SA
		%	51.9	20.4	20.4	7.4		
3	Planning a test is needed in test construction	F	21	28	42	17	2.5	D
		%	19.4	25.9	38.9	15.7		
4	Crafted items need to match learning objectives.	F	18	25	40	25	2.3	D
		%	16.9	23.1	37.0	23.1		
5	I like to always write items with the same difficulty level	F	65	32	7	4	3.5	SA
		%	60.2	29.6	6.5	3.7		
6	I always refer to test specification table when constructing items	F	92	8	3	5	3.7	SA
		%	85.2	7.4	2.8	4.6		
7	It is compulsory to review constructed items before it is administered	F	20	25	40	23	2.4	D
		%	18.3	23.1	37.0	21.3		
8	It is bad to take items verbatim from textbooks used in teaching	F	45	30	20	13	3.0	SA
		%	41.7	27.8	18.5	12.0		
9	Checking for the item difficulty and discrimination is necessary	F	56	42	4	6	3.4	SA
		%	51.9	38.9	3.7	5.6		
10	Items should be arranged according to difficulty level.	F	15	18	35	40	2.1	D
		%	13.9	16.7	32.4	37.0		
11	Clear directions for examinees on the test instrument should be provided	F	26	30	30	22	2.6	-
		%	24.1	27.8	27.8	20.4		
12	It is not the best option to rely on past questions when constructing a test.	F	16	20	32	40	2.1	SD
		%	14.8	18.5	29.6	37.0		
13	I like to prepare marking scheme after the test have been administered.	F	40	26	40	2	2.2	-
		%	37.0	24.1	37.0	1.9		
14	It is necessary to check for the clarity of crafted items	F	30	20	38	20	2.6	D
		%	27.8	18.5	35.2	18.5		
15	It is necessary to craft more items than actually needed in test construction.	F	43	30	27	8	3	SA
		%	39.8	27.8	25	7.4		
Percentage Average/ Av. of Means		F	38.2	37.8	26.9	15.7	2.8	
		%	35.7	27.9	23.2	14.7		

Source: Field Work, 2025.

The analysis of data on Table 2 by percentage point revealed the attitude of science teachers towards construction of secondary school science items achievement test in Ondo State: strongly agree (35.7%), agree (27.9%), disagree (23.2%), and strongly disagree (14.7%). The grand mean of 2.8 implies that

science teachers have moderate attitude towards construction of secondary school science items achievement test in Ondo State, Nigeria.

Testing of Hypotheses

Hypothesis 1: Psychological factors (Teachers' motivation, stress at work and teachers' perception, perseverance/endurance and self-efficacy) will not significantly predict secondary school science teachers' efficient item construction attitudes

To test hypothesis 1, data collected on the psychological factors and science teachers' item construction attitudes were pooled and analysed to arrive at Table 3.

Table 3: Multiple Regressions analysis of psychological predictors of science teachers' item construction attitude

<i>Model</i>	β	<i>Std Err</i>	<i>Beta</i>	<i>Rank</i>	<i>T</i>	<i>Sig</i>	<i>R</i>	<i>R</i> ²	<i>Adj R</i> ²	<i>F</i>
(Constant)	4.713	2.536			1.858	0.066	.897 ^a	.805	.796	84.411
Teachers' motivation	.222	.041	.282	3 rd	5.466	0.000				
Stress at work	-.193	.057	-.187	5 th	-3.372	0.001				
Teachers' perception	.263	.038	.375	1 st	6.994	0.000				
Perseverance/endurance	.165	.025	.305	2 nd	6.697	0.000				
Self-efficacy	.139	.030	.223	4 th	4.600	0.000				

Dependent Variable: *Teachers' item construction attitude*

Table 3 showed a coefficient of correlation (R) of 0.897, R square of 0.805. This implies that 80.5% of the variability in the science teachers' item construction attitude is accounted for by the five predictor variables when taken together. The relative contribution of the independent variables to the dependent variable is expressed as beta weights. The positive values of four variables: Teachers' motivation, teachers' perception, perseverance/endurance and self-efficacy, implies that teachers' item construction attitude can be influenced by the four variables and their contributions are significant. The negative relationship between stress at work and item construction attitudes of science teachers implies that increased occupational stress significantly reduces teachers' willingness, enthusiasm, and effectiveness in constructing quality test items. However, teachers' perception contributed most out of the five psychological variables investigated (Beta 0.375, $P < 0.05$), Perseverance/endurance (Beta 0.305, $P <$

0.05), Teachers' motivation (Beta 0.282, $P < 0.05$), Self-efficacy (Beta 0.223, $P < 0.05$), Stress at work was the least contributor; however, its contribution was very significant (Beta -0.187, $P < 0.05$).

Hypothesis 2: There is no significant difference between the attitudes of male and female science teachers' towards construction of efficient science achievement test items.

To test hypothesis 2, data collected on the attitudes of male and female science teachers' towards construction of efficient science achievement test items were pooled and analysed to arrive at Table 4

Table 4: t-test showing the difference between male and female science teachers' efficient items construction attitude

Gender	N	$\bar{x}$	STD	$\bar{x}D$	t	df	Sig
Male	48	52.4375	5.38677	-.02917	-.028	106	.978
Female	60	52.4667	5.39763				

Source: Computed from Field Work *Significant 0.05 (two tailed)

From table 4, the mean for male science teachers is 52.4375 while that of female science teachers is 52.4667, the value of difference between the two groups was -.02917. An independent samples t-test showed that the t calculated value was -.028 and differences between the two means was not significant ($t = -.028$, $df = 106$, $p \text{ value} = .978$), since the $p \text{ value} > 0.05$, therefore it was concluded that there was no significant difference between the attitudes of male and female science teachers' towards construction of efficient science achievement test items. Therefore, the null hypothesis of no significant difference was not rejected. By implication, both male and female science teachers exhibit similar or almost the same attitude towards construction of efficient science achievement test items in secondary schools in Ondo State

DISCUSSION OF FINDINGS

The findings of this study provide compelling evidence that psychological factors are central to shaping secondary school science teachers' attitudes toward efficient test item construction. The significant influence of teachers' motivation suggests that when teachers are intrinsically driven and professionally committed, they are more likely to engage thoughtfully and diligently in assessment practices. This aligns with existing literature which emphasizes that teacher motivation enhances instructional quality and assessment engagement (Deci, & Ryan 2020). Motivated teachers tend to invest greater effort in planning and executing evaluation tasks, thereby improving the quality of test items they construct.

Teachers' perception also emerged as a critical factor, indicating that how teachers interpret the purpose and value of assessment strongly shapes their attitudes toward item construction. When teachers view assessment as a tool for improving student learning, they are more likely to approach it with commitment and professionalism. This supports findings by Brown et al (2021) and Brown (2021), who reported that positive teacher perceptions of assessment significantly enhance their engagement and effectiveness in test development.

Perseverance or endurance further highlights the importance of sustained effort and resilience in handling the complexities involved in test construction. Developing valid and reliable assessment items requires patience, persistence, and attention to detail. Teachers who demonstrate higher levels of perseverance are better equipped to cope with challenges such as workload and time constraints. This is consistent

with the work of Duckworth et al. (2021a, 2021b) who emphasized that perseverance is a key determinant of sustained professional performance and task accomplishment.

Self-efficacy also plays a significant role, as teachers who believe in their ability to construct effective test items are more confident and proactive in engaging with assessment practices. High self-efficacy encourages teachers to adopt appropriate strategies and continuously refine their skills. This finding is supported by Schunk and Pajares (2020), who highlighted that self-efficacy beliefs strongly influence teachers' instructional decisions and performance outcomes.

Interestingly, stress at work suggests a complex relationship with teachers' attitudes toward item construction. While excessive stress can negatively impact performance, moderate levels of stress may enhance focus and productivity. This aligns with the perspective of Cooper et al. (2020), who noted that manageable stress can sometimes act as a motivator, improving task engagement and efficiency when properly regulated.

The absence of a significant difference between male and female teachers' attitudes indicates that gender does not influence how teachers approach tests item construction. This suggests that both male and female teachers possess similar capacities and dispositions toward assessment practices when provided with equal opportunities and support. This finding corroborates the study by Darling-Hammond (2021) and Darling-Hammond et al (2020), which found no substantial gender-based differences in teachers' professional competencies and classroom practices.

CONCLUSION

The study concludes that psychological factors are vital determinants of secondary school science teachers' attitudes toward efficient test item construction. Teachers' motivation, perception, perseverance/endurance, self-efficacy, and work-related stress collectively shape how they approach and execute assessment tasks. These factors influence not only teachers' engagement but also the overall quality of test items developed. Additionally, gender does not play a significant role in determining teachers' attitudes, indicating that effective assessment practices are not gender-dependent but rather psychologically driven.

Recommendations

Based on the findings, the following were recommended

1. Educational authorities should organize regular professional development programmes that enhance teachers' motivation, reshape positive perceptions of assessment, and strengthen their resilience in handling assessment-related tasks.
2. Teacher training institutions and school administrators should focus on building teachers' self-efficacy through practical, hands-on workshops, mentoring, and continuous feedback on test construction practices.
3. School management should create supportive work environments by managing workload effectively, providing adequate instructional resources, and implementing strategies to reduce harmful levels of work-related stress.

4. Curriculum planners and policymakers should integrate psychological skill development—such as motivation enhancement, stress management, and reflective practice—into teacher education and continuous professional development programmes to improve assessment competence.

REFERENCES

- Absolor, J. (2023). Teachers' role in modern classroom interaction and learning outcomes. *Multidisciplinary Science Journal*, 7, Article e2025181.
- Akcan, A. T., Yildirim, B., Karataş, A. R., & Yılmaz, M. (2023). Teachers' views on the effect of STEM education on the labor market. *Frontiers in Psychology*, 14, Article 1184730. <https://doi.org/10.3389/fpsyg.2023.1184730>
- Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., & Chisom, O. N. (2024). Innovative approaches to STEM education. *International Journal of Science and Research Archive*, 11(1), 244–252. <https://doi.org/10.30574/ijrsra.2024.11.1.0026>
- Alonge, M.F (2004). Measurement and evaluation in education and psychology (2nd Edition) Ado-Ekiti: Adedayo Printing (Nig.) Ltd.
- Anaso, J.N & Anaso, G.N(2000). Gender differences in understanding science. Implications for women education. *Nigeria Journal of Curriculum and Instructions*, 84, 261-271.
- Brown, G. T. L., Gebril, A., & Michaelides, M. P. (2021). Teachers' conceptions of assessment: A global phenomenon or a global localism. *Frontiers in Education*, 6, Article 628059. <https://doi.org/10.3389/educ.2021.628059>
- Brown, H. L. (2021). Teachers' perceptions of assessment and their impact on instructional practices. *Journal of Educational Assessment*, 29(2), 145–162.
- Cooper, C. L., Quick, J. C., & Schabracq, M. J. (2020). *International handbook of work and health psychology* (3rd ed.). Wiley.
- Darling-Hammond, L. (2021). *The right to learn: A blueprint for creating schools that work*. Jossey-Bass.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- Deci, E. L., & Ryan, R. M. (2020). *Intrinsic motivation and self-determination in human behavior* (Updated ed.). Springer.
- Duckworth, A. L., Kirby, T. A., Tsukayama, E., Berstein, H., & Ericsson, K. A. (2021a). Deliberate practice spells success: Why grit matters. *Current Directions in Psychological Science*, 30(1), 12–17.
- Duckworth, A. L., Quinn, P. D., & Tsukayama, E. (2021b). Revisiting the factor structure of grit: A meta-analysis. *Journal of Personality and Social Psychology*, 120(3), 710–728. <https://doi.org/10.1037/pspp0000282>
- Gbore, L.O. (2006). Cognitive entry characteristics, study habits and self-concept as predictors of academic performance of university undergraduates in South West, Nigeria. (Unpublished Phd Thesis) university of Ado- Ekiti, Ekiti state, Nigeria.
- Gbore, L.O. (2013). Relative contributions of selected teachers' variables and students' attitudes towards academic achievement in Biology among senior secondary school students' in Ondo State, Nigeria. *Mediterranean Journal of social sciences*, 4(1), 243-250.
- Hendricks, W., Olawale, B. E., & Saddiq, K. (2024). An investigation of high school preservice teachers' self-efficacy in teaching mathematics. *Education Sciences*, 14(11), Article 1262. <https://doi.org/10.3390/educsci14111262>

- Herrmann, D.J (1992). Gender – linked differences in everyday memory performance. *British Journal of Psychology*, 83(3), 221-231.
- Ntsayakgosi, I., Mutua, J. N., & Olendo, R. (2024). Teacher self-efficacy as a correlate of academic achievement among grade seven learners in Botswana. *International Journal of Research and Innovation in Social Science*, 8(8), 1200–1207.
- Nwoko, J. C., Emeto, T. I., & Malau-Aduli, A. E. O. (2023). A systematic review of the factors that influence teachers' occupational wellbeing. *International Journal of Environmental Research and Public Health*, 20(12), Article 6070. <https://doi.org/10.3390/ijerph20126070>
- Ogunbadejo, O. (2025). Psychosocial predictors of efficient science teachers' items construction attitudes and science students' test taking behavior in Ondo State, Nigeria. (Unpublished Phd Thesis) Adekunle Ajasin University, Akungba- Akoko, Ondo State, Nigeria.
- Okoye, M. C. (2024). Teachers' teaching efficacy as a predictor of teachers' effectiveness in Nigeria: A literature review. *International Journal of Educational Research and Innovation*, 12, 45–58.
- Oluwatayo, J.A (2003). Mode of entry and performance of undergraduates in science courses in Nigeria universities. (Unpublished Phd Thesis) University of Ado- Ekiti, Ado- Ekiti.
- Schunk, D. H., & Pajares, F. (2020). Self-efficacy theory in education. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA educational psychology handbook* (pp. 35–54). American Psychological Association.
- Sellami, A., Santhosh, M. E., Michaleczek, I., Alazaizeh, M., & Madad, J. (2024). Teachers' instructional self-efficacy in STEM education. *Canadian Journal of Science, Mathematics and Technology Education*, 24, 418–438. <https://doi.org/10.1007/s42330-025-00359-z>
- Wawire, B. A., Nkunica, F., Robinette, J., Manyau, M., Koo, J. B., & Barnes-Story, A. E. (2025). Teacher educator knowledge, skills, and self-efficacy: Impacts on teacher education. *Trends in Higher Education*, 4(3), Article 43. <https://doi.org/10.3390/higheredu4030043>
- Yidana, M. B., & Acquah, B. Y. S. (2024). Influence of professional learning communities on teachers' self-efficacy. *Cogent Social Sciences*, 10(1), Article 2334113. <https://doi.org/10.1080/23311886.2024.2334113>