

Impact of Modified Testing Patterns on Confidence and Academic Performance in Primary School Students

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Abstract: *Assessment plays a crucial role in shaping students' learning experiences, confidence levels, and academic performance. Traditional testing patterns often emphasize rote memorization and high-stakes examinations, which may contribute to exam-related anxiety and reduced confidence among young learners. In recent years, modified testing patterns such as formative assessments, low-stakes quizzes, project-based evaluation, open-book tests, and competency-based assessments have gained attention for their potential to enhance student engagement and learning outcomes. The present study aims to examine the effect of modified testing patterns on confidence and exam performance among students aged 9 and 10 years. This study mainly focuses on understanding whether changes in assessment methods can positively influence students' self-confidence, reduce exam anxiety, and improve academic achievement. This study involves quantitative research approach using standardized confidence scales and academic performance records. The data are collected from students exposed to modified testing patterns and compared with those following traditional testing methods. The study found that modified testing methods significantly improve objective student achievement compared to traditional assessments, though students in traditional formats report higher academic confidence despite lower actual performance—a phenomenon related to the "illusion of competence." Correlation analysis showed strong interrelations among affective confidence dimensions but revealed that self-reported confidence does not predict actual academic outcomes. These results highlight the value of incorporating formative, modified assessments in higher education to better foster genuine cognitive mastery rather than overinflated self-efficacy*

Keywords: Modified testing patterns, student confidence, exam performance, formative assessment, primary education

1. Introduction

Assessment is a cornerstone of the educational process, serving not only as a mechanism for measuring academic learning but also as a key determinant of student motivation, self-perception, and psychological well-being. At the primary school level, particularly for children aged 9 to 10 years, students navigate a critical developmental stage characterised by rapid cognitive growth, increasing academic expectations, and heightened emotional sensitivity to evaluation. Consequently, classroom assessment practices during these formative years profoundly influence students' academic self-concept, exam-related anxiety and attitudes toward long-term learning.

Traditionally, primary education assessment systems have relied heavily on summative, high-stakes testing patterns. These conventional evaluation methods are predominantly characterised by time-bound, pen-and-paper written examinations that prioritise rote memorisation, speed, and content reproduction. While standardised summative tests offer procedural uniformity and administrative ease, growing evidence in educational psychology indicates that high-stakes testing environments often induce severe test anxiety, fear of failure and diminished intrinsic motivation among young learners. For many 9- and 10-year-olds, punitive or overly rigid evaluation structures foster negative self-perceptions, leading to task avoidance and reduced classroom engagement.

In response to the limitations of traditional testing, contemporary pedagogical frameworks and global educational reforms increasingly advocate for modified testing patterns. Modified testing patterns encompass child-centred and formative evaluation strategies, including low-stakes quizzes, activity-based assessments, project-based tasks, open-book evaluations, oral presentations and continuous comprehensive feedback mechanisms. By embedding evaluation into the daily instructional process, modified testing patterns aim to shift the academic focus from high-pressure comparison to continuous improvement, skill acquisition and conceptual mastery. From a psychological standpoint, reducing assessment pressure can nurture self-efficacy, foster resilience and encourage active learning participation.

2. Literature Review

2.1 Traditional testing patterns and learner stress

Conventional evaluation relies heavily on summative, time-bound written examinations that emphasize memorization and standardized content reproduction. Studies show that performance-oriented, high-stakes testing structures foster an intense fear of failure and heighten exam anxiety. Kohn (2006) noted that high-stakes evaluation systems can erode intrinsic motivation and self-esteem, leading to cognitive overload and reduced academic engagement among primary school learners

2.2 Modified testing patterns and formative assessment

Progressive educational frameworks advocate for modified testing patterns, including low-stakes quizzes, activity-based evaluation, project work, oral presentations and continuous comprehensive assessment. In a seminal meta-analysis, Black and Wiliam (1998) demonstrated that continuous feedback and low-stakes assessment significantly improve learning outcomes, particularly for low-achieving or test-anxious students. Harlen and Deakin Crick (2003) and Harlen (2007) confirmed that child-centered, low-pressure evaluation fosters self-regulation, curiosity and intrinsic motivation at the primary level.

2.3 Student confidence and academic performance

Students with strong self-efficacy display greater persistence, effort and resilience when encountering challenging tasks. Empirical evidence shows that supportive assessment environments enhance confidence, which correlates positively with examination performance, whereas repeated failure in high-stakes testing lowers perceived competence and academic achievement.

2.4 Assessment dynamics in primary school students

Children aged 9 to 10 years are at critical developmental stage where academic self-concept, social comparison and sensitivity to evaluation take shape. While activity-based and low-pressure assessments help reduce exam anxiety and improve classroom participation, existing studies predominantly examine psychological well-being and academic performance in isolation rather than together.

3. Problem Definition

Despite the recognised benefits of child-centered evaluation, many primary schools continue to rely on traditional, high-stakes written examinations that emphasise rote memorization. For children aged 9 and 10, these conventional testing patterns often trigger test anxiety and lower self-confidence, negatively impacting their overall academic performance. While modified testing patterns are advocated to alleviate this pressure, there is a lack of quantitative, comparative evidence evaluating their combined impact on both confidence and objective exam scores within primary education. This study addresses this gap by empirically examining how modified testing patterns influence psychological well-being and academic achievement in young learners.

Objectives of the Study

The study was guided by the following objectives:

- 1) To examine the influence of modified testing patterns on the confidence levels of students aged 9 and 10 years.
- 2) To compare the exam performance of students assessed through traditional testing patterns and modified testing patterns.
- 3) To analyze the relationship between testing patterns, students' confidence and academic performance.

Hypothesis

The following hypotheses were proposed:

- H1: There is a significant influence on the confidence levels of students aged 9 and 10 years.
- H2: There is a significant difference in exam performance between students assessed through traditional testing patterns and modified testing patterns.
- H3: There is a significant relationship between testing patterns, students' confidence and academic performance

4. Methodology

4.1 Research design

This study employs a quantitative, descriptive and comparative research design to examine the influence of modified testing patterns on student confidence and academic performance. A quasi-experimental, non-equivalent two-group comparative framework is adopted to evaluate differences between students exposed to traditional testing methods and those evaluated through modified testing approaches

4.2 Participants

The target population consists of primary school students aged 9 and 10 years enrolled in recognised primary school following standardised curricula. A purposive sampling technique will be utilised to recruit participants from selected schools. Participants have been divided into two comparative cohorts: Group A and Group B. Group A is control/traditional testing, which assesses students through conventional, time-bound written examinations that emphasize rote memorization and periodic summative evaluation. Group B is intervention/modified testing, which assesses students through child-centered modified patterns, including continuous low-stakes quizzes, activity-based assessments, project assessments, open-book evaluations and oral presentations. The schools was selected from comparable demographic backgrounds, grade levels and subject curricula to ensure baseline equivalence across non-experimental variables.

4.3 Measures

1) Student Confidence Scale

A quantitative self-report instrument adapted and standardised for children aged 9 to 10 years. The scale measures self-perceived academic confidence, test-taking self-efficacy and emotional comfort during assessment situations using an age-appropriate response scale.

2) Academic Performance Records

Objective assessment scores obtained directly from institutional records. For Group A, performance will be represented by standardized marks from traditional written examinations. For Group B, academic performance will be derived from cumulative, standardized scores across the modified evaluation components.

4.4 Procedure

Permission was obtained from school authorities before data collection. Informed consent was obtained from parents or guardians, and students were assured of confidentiality and anonymity. The data were administered to students in a classroom setting under the guidance of the researcher. Clear instructions were given to the students, and encouraged to respond honestly. Academic records were collected from school authorities after completion of the assessment cycle.

4.5 Ethical Considerations

Ethical principles are strictly followed throughout the study. Participation in the study is voluntary and students' identities remain confidential. The collected data are used solely for research purposes.

4.6 Statistical Analysis

The collected data were analysed using SPSS statistical software Version 23. Descriptive statistics were used to summarise the overall distribution of student confidence levels and exam performance scores across both cohorts. An independent t-test compares the mean confidence levels and academic achievement scores between students assessed via traditional testing and those evaluated through modified testing patterns. Additionally, Pearson's product-moment correlation measures the strength and direction of the linear relationship between students' self-reported confidence and their objective examination performance.

5. Results and Discussion

1) Demographic characteristics of the sample (N=122)

Demographic Variable	Category	N	Percentage
Gender	Male	59	48.4
	Female	63	51.6
Testing Method Group	Group A (Traditional)	61	50.0
	Group B (Modified)	61	50.0
Total Sample		122	100.0

Table 1 presents the demographic profile of the research sample, which consists of 122 participants representing the entire study population. The sample is almost evenly split between 59 males (48.4%) and 63 females (51.6%), providing balanced gender representation, reducing the risk of gender-related bias, and enhancing the generalizability of the findings across both male and female cohorts. Participants were equally assigned to one of two testing methods: Group A used the traditional method while Group B used the modified method, with each group containing exactly 61 participants. This balanced allocation maximizes statistical power of comparative analyses while minimizing variance errors between the baseline and modified conditions, offering a robust empirical foundation for experimental, clinical or educational research.

Table 2: Descriptive Statistics for the Confidence, Academic Performance Scales and Student Perceptions of Traditional and Modified Testing Methods (N=122)

Variable	Mean	Standard Deviation
Academic Confidence	26.22	4.26
Exam Confidence	27.29	4.62
Participation Confidence	23.63	4.38
Total Confidence	77.14	11.29
Academic Performance	80.81	17.25
Tradition testing Perception		
Fair Assessment of Ability	31.6	1.47
Alignment with Learning Goals	3.87	1.30
Anxiety generation during exams	4.06	1.07
Reflection of true knowledge	4.07	1.21
Preference for Traditional Format	3.00	1.40
Modified Testing Perception		
Reduced Exam- related stress	4.11	1.25
Encouragement of continuous study	4.11	1.18
Accurate reflection of skills	3.93	1.09
Clarity of Evaluation Criteria	4.07	1.20
Preference for Modified Format	3.66	1.26

Table 2 summarizes descriptive statistics across 122 students evaluating confidence, academic performance and perceptions of assessment methods. Among confidence sub-domains, exam confidence scored highest, followed by academic confidence and participation confidence. Academic performance averaged a strong, though a wide standard deviation indicates significant variance in achievement. For traditional testing, students acknowledged alignment with learning goals and accurate knowledge reflection, but reported high test anxiety along with lower scores for fairness and general preference. In contrast, perceptions of modified testing were consistently positive, with strong agreement that it reduce stress, encourages continuous study, provides clear criteria and accurately reflects skills, leading to clear overall preference for modified assessment strategies.

Table 3: Independent sample t-test comparing overall confidence, academic performance and subscales across testing methods (N=122)

Variable	Group A (Traditional)		Group B (Modified)		t	df	P	Cohen's d
	M	SD	M	SD				
Overall Confidence	79.77	11.33	74.51	10.69	2.64	120	.009	0.48
Academic Confidence	28.08	4.19	24.36	3.46	5.34	120	<.001	0.97
Exam Confidence	27.59	4.60	26.98	4.67	0.72	120	.471	0.13
Participation Confidence	24.10	4.46	23.16	4.28	1.18	120	.240	0.22
Academic Performance	75.88	20.47	85.74	11.47	-3.28	94.28	.001	-0.59

Table 3 compares outcomes between Group A (traditional testing) and Group B (modified testing) using independent sample t-test. Group B demonstrated significantly higher academic performance than Group A, supporting research that continuous, modified assessments enhance cognitive engagement and learning outcomes. Conversely, Group A reported significantly higher overall confidence than Group B, a difference driven specifically by academic confidence, while exam confidence and participation confidence showed

no significant differences. This inverse relationship reflects illusion of competence where familiar summative testing creates an inflated sense of mastery, whereas modified formats lower self-reported confidence by highlighting gaps in understanding, ultimately driving superior academic achievement.

Table 4: Pearson Correlation between confidence subscales and academic performance (N=122)

Variable	1	2	3	4
Academic Confidence	-			
Exam Confidence	.608*	-		
Participation Confidence	.547**	.602**	-	
Academic Performance	-.103	-.058	0.17	-

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

Table 4 presents a correlation matrix examining bivariate relationships among domain-specific confidence subscales and actual academic performance. The findings demonstrate strong statistically significant positive inter-correlations among academic confidence, exam confidence and participation confidence. In contrast, none of the confidence subscales significantly correlated with actual academic performance, with academic and exam confidence showing weak negative associations, and participation confidence showing a weak positive association. This disconnects highlights metacognitive calibration error, where subjective self-perceptions of ability fail to predict objective scholastic achievement due to low-performing students overestimating their readiness and high-performing students reporting more cautious self-assessments.

6. Conclusion

This study provides valuable empirical insights into the comparative efficacy of traditional versus modified testing methods, as well as their distinct effects on student academic performance, confidence subscales, and metacognitive calibration. The descriptive and inferential analyses collectively demonstrate that while modified testing formats significantly enhance objective student achievement ($M=85.74$) compared to traditional assessment methods ($M=75.88$), they also induce a recalibration of self-reported academic confidence. Students exposed to traditional testing reported significantly higher levels of overall and academic confidence, despite lower actual academic outcomes—a pattern consistent with the "illusion of competence" documented in cognitive literature. Furthermore, the correlation analysis revealed that while affective confidence dimensions are strongly inter-correlated ($r=.547$ to $.608$), subjective self-confidence does not significantly predict objective academic performance ($p>.05$). These findings underscore the importance of incorporating continuous, formative, and modified assessment practices in higher education to promote authentic cognitive mastery over uncalibrated self-efficacy.

7. Future Scope

Future research should expand upon these findings by broadening the demographic and geographical scope to include secondary and higher education contexts, thereby

testing whether these outcomes hold across varied school environments, which will enhance generalizability and reduce selection bias. Additionally, future studies should isolate individual modified assessment strategies to determine which specific mechanisms drive gains in performance and metacognitive calibration. Incorporating a mixed-method design, objective metacognitive tracking and qualitative observations alongside self-report inventories will help mitigate response bias among young learners. Finally, longitudinal studies spanning multiple assessment cycles are needed to determine if the academic improvements and reduced exam stress associated with modified testing are sustained over time.

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