

Research Paper

Investigating the Impact of Different Assessment Techniques at Primary Level

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ABSTRACT

The present study intended to study classroom assessment practices and teaching effectiveness among primary school teachers in Keonjhar district of Odisha. The primary objectives of the study were to examine the impact of different assessment practices of teachers at primary level students from class I to class V on the basis of gender and locality. The study employed descriptive survey methodology. The sample were randomly selected which includes 7 Government upper primary schools, from which four are from rural and three from urban locality. A total of 140 students, 20 students per school were randomly selected. The 140 participants comprise of 65 boys and 75 girls. The data were collected by administering structured questionnaires and observation checklists. The collected data were analysed by using descriptive statistics, t-tests, and chi-square tests. The findings revealed that while teachers were aware of the importance of formative and summative assessment, there were significant differences in implementation strategies between male and female teachers. In other hand, engagement of students depends upon the continuous assessments by teachers in systematic way with innovative way of teaching and evaluation.

Keywords: Classroom Assessment, Primary Education, Teachers' Practices, Academic Performance, Assessment practices

Teaching is important in 21st century but good teaching and outcome depends upon the effective evaluation process and objective value judgements. Educational assessment techniques are influencing the outcome, development of cognitive, affective and psychomotor of students widely. According to Black, P., & Wiliam, D. (1998) One of best classroom assessment is the formative assessment reason that impact the students' improvement immediately with suitable progressive feedback through continuous process. Assessment and evaluation approaches are the most important in students' progress in learning outcome Shepard, L. A. (2000). Effective assessment is impacting positive improvements of student's academic improvement and constructive mindset day by day. Assessment is important approach in evaluation field and play a vital road to provide constructive feedback strategy which helps to motivate students for self-regulations, self-monitoring and construct their own things and make original and effective improvement in teaching learning process Sadler, D. R. (1989). Researcher like Hattie, J., & Timperley, H.

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(2007). highlighted that feedback is one of the most powerful influences in field of education and enhance student achievement. The assessment for learning (formative assessment) is essential for improving teaching learning more effectiveness and positive reinforce to student for holistic developments Harlen, W. (2007). In other researcher evidence, Wiliam, D. (2011). recognized that classroom assessment is vital process during teaching learning process of pedagogical improvement and student engagement. Further reported that effective assessment systems help to improve teaching quality, learning outcomes and educational equity in 21st era of evolution OECD, (2013).

In the Indian educational perspective, assessment and evaluation practices have historical roots in the pre-independence era, Gurukul and Madrasa systems where oral examinations, memorization and teacher observations were used to evaluate learners. The Sargent Commission (1944) recommended systematic evaluation procedures that improve of elementary education Sargent, J. (1944). Mudaliar, A. L. (1953) highlighted that reducing the dominance of external examinations and strengthening internal assessment for better enhancement in teaching learning process. The Kothari Commission (1964–66) emphasized that continuous evaluation and all types of assessment are more improvements of student's achievement with educational objectives Government of India. (1966). *Education and national development: Report of the Education Commission (1964–66)*. The National Policy on Education (NPE) 1968 focused on improving the reliability and validity of examinations in transform manner Government of India. (1968). *National policy on education, 1968*. Ministry of Education, Government of India While NPE 1986 introduced a most innovative ideas on the field of evaluation were Continuous and Comprehensive Evaluation (CCE) to reduce examination stress and promote holistic development of children Government of India. (1986). *National policy on education, 1986*. Ministry of Human Resource Development. The National Education Policy (NEP) 2020 marked a paradigm shift toward competency-based, formative and performance-based assessments to reduce rote learning and promote critical thinking, creativity and experiential learning in affective way

The National Curriculum Framework (NCF) developed by NCERT. It recommends that assessment should be valid, reliable, objective and strongly associated with learning objective and outcomes National Council of Educational Research and Training. (2023). Educational measurement scholars have classified assessment into various types such as placement, formative, summative, diagnostic, ipsative, objective, subjective, formal, informal, internal and external assessments Bloom, B. S., Hastings, J. T., & Madaus, G. F. (1971); Gronlund, N. E. (1998); Nitko, A. J., & Brookhart, S. M. (2011). The assessment approaches have more conceptualized as Plan–Do–Check–Act (PDCA) that provides a continuous improvement framework for educational evaluation Kerma, S., & Ouahmiche, G. (2018).

In Odisha, elementary education is administered by the Department of School and Mass Education under the govt of Odisha. It fosters positive academic support from SCERT and national initiatives such like SSA and RMSA for instructional infrastructure, student's achievement in elementary level of Odisha. State-level programs such as Ujjwala and Utthan for Classes I–VIII focus on improving foundational literacy like alphabetically and word spelling etc. And basic numeracy like addition, subtraction and multifaction among students through structured teaching and assessment frameworks. However, research indicates that summative assessment continues to dominate classroom practices but formative and diagnostic assessments are underutilized NCERT. (2020); Government of Odisha. (2022). Therefore, investigating the impact of different assessment techniques at the primary level is

essential to understand their effectiveness in improving student learning outcomes, motivation and instructional practices.

REVIEW OF RELATED LITERATURE

Many researchers have studied on classroom assessment practices and their impact on student's learning and academic performance in primary schools. Previous studies show that teachers are generally understand the importance of assessment but there are differences between what teachers believe and application strategies and what they actually do in classrooms. Researcher like Monteiro, V., Mata, L., & Santos, N. N. (2021) found that teachers had believed that assessment should support learning and their actual practices were influenced by accountability in learning, demands of contents, learning environment, need and interest of students. Similarly, Nrathakoon, A., Sapsirin, S., & Subphadoongchone, P. (2020). prove that primary English teachers in Thailand valued assessment process and used various assessment methods for better development of students critical thinking. Current research of Ahmed, V. (2019) reported a positive relationship between teachers' attitudes toward formative assessment and their classroom practices. Though teachers' attitudes were more positive than their real implementation of formative assessment. similarly, Mufeed, M. (2018). found that elementary school teachers in Delhi area were valued school-based assessment is grater then test but they faced challenges in using different assessment tools to monitor student progress effectively. Observations of Kerma, S., & Ouahm iche, G. (2018). revealed that Algerian primary teachers preferred traditional assessment methods rather than competency-based approaches. Research has also shown difficulties in using formative assessment in practice during teaching learning process. The research of Sargent, J. (1944). prove that through real life experiences was Chinese mathematics teachers used classroom assessment techniques but struggled to modify instruction based on formative feedback. Hondrich, A. L., Hertel, S., Adl-Amini, K., & Klieme, E. (2015) identified gaps between the intended purpose and actual practice of continuous comprehensive assessment in Ethiopian primary schools. Furthermore, Ara, A., & Saeed, M. (2022) ; reported that teacher's assessment is literacy significantly influenced student's academic performance, and scholastic area that showing, teacher's knowledge and skills in utilization assessment are important for student achievement. Studies by Aturinzire, P. (2020) and Nduhura, D., Aturinda, I., & Mugisha, J. (2022). revealed that continuous assessment improved pupils' academic performance and confidence and conceptual clarity although factors such as overcrowded classrooms and teacher shortages limited may affect negatively. The reviewed literature shows that assessment plays a crucial role in primary education but there are gaps between teacher's beliefs and classroom practices. These findings highlight the need for improving teacher's assessment skills, trained and ensuring effective implementation of assessment practices during teaching learning process to enhance students' academic performance.

Theoretical Framework

A theoretical framework provides the conceptual basis for understanding how assessment techniques influence student learning and teaching processes. The present study is grounded in multiple educational and psychological theories that explain the role of assessment in learning, motivation, and instructional improvement Black, P., & Wiliam, D. (1998); Shepard, L. A. (2000).

The framework highlighted that Constructivist Learning Theory is a modern approach which emphasizes that learners actively and focus on construction of knowledge through interaction with their environment; therefore, assessment should focus on understanding

learners' thinking processes and providing continuous feedbacks, learner-cantered feedback that prompt internal motivation for unique construction Piaget, J. (1972). Vygotsky, L. S. (1978). [Fosnot, C. T. (2013). In alignment with this, Assessment for Learning (AFL) theory highlights the importance of formative assessment practices such as continuous feedback, self-assessment and peer assessment in classroom that enhancing student motivation and achievement in the field of education Black, P., & Wiliam, D. (1998); Wiliam, D. (2011). Furthermore, Bloom's Taxonomy provides a structured framework that connecting with cognitive, affective and psychomotor domains of children that ensuring continuous comprehensive evaluation of learning outcomes Anderson, L. W., & Krathwohl, D. R. (2001). In other research evidence highlighted that Feedback and Self-Regulated Learning Theory emphasizes the role of timely and constructive feedback in promoting student's metacognition, reflection and independent learning Zimmerman, B. J. (2002); Hattie, J., & Timperley, H. (2007). Hattie, J., & Timperley, H. (2007). The framework is also informed by Systems Theory and the PDCA (Plan-Do-Check-Act) which conceptualized that assessment as a continuous and cyclical process aimed at improving teaching-learning practices through planning, implementation, evaluation and refinement Deming, W. E. (1986). Banathy, B. H. (1992). Additionally, Sociocultural Theory underscores the importance of social interaction, scaffolding and collaborative learning which helps to shaping student achievement and holistic development Vygotsky, L. S. (1978). Rogoff, B. (1990). Finally, Outcome-Based Education (OBE) concern with the emphasizes competency-based assessment connected with clearly defined learning outcomes, ensuring that students achieve desired knowledge and skills Spady, W. G. (1994); Biggs, J., & Tang, C. (2011). Together, these theoretical perspectives provide a comprehensive and clear statement foundation for designing assessment practices that are continuous, context-sensitive, learner-cantered and focused on improving student's understanding, skills and overall learning outcomes Gipps, C. V. (1994). Pellegrino, J. W., Chudowsky, N., & Glaser, R. (2001).

Objective of The Study

1. To examine the impact of various assessment techniques on academic achievement of primary school students.
2. To compare the achievement scores of students taught using different assessment techniques.
3. To compare the mean achievement scores of boys and girls at the primary level

Research Questions

1. What is the impact of different assessment techniques on the academic achievement of primary level students?
2. Is there a significant difference in achievement scores of students taught by using different assessment techniques?
3. Is there a significant difference in the mean achievement scores of boys and girls at the primary level?

RESEARCH METHODOLOGY

This study used a descriptive survey research design to understand the impact of different assessment techniques on students' learning at the primary level. Prior to data collection permission had been taken from district education officer at the same time informed consent of teachers and students ascent were taken on ethical ground.

Population and Participants

The population of the study included all government primary schools in Keonjhar district, Odisha. From this population, a sample of seven government upper primary schools (4 rural and 3 urban) was randomly selected from the Sadar block. A total of 140 students were selected for the study, with 20 students from each school, including 65 boys and 75 girls, to ensure equal representation.

Tools of the research

The collected data through the administration of questionnaires, classroom observation and semi-structure interview helps to gathered information form stakeholder like teacher, students, etc. The semi-structure interview helps to explore different assessment techniques at different class level. Through the classroom observation the researcher understand that how different assessment techniques were actually used during class room transaction.

The data were analysed in three phases, in first phase descriptive statistics then comparison of mean through inferential statistics (t-test), in the second phase and finally through non-parametric statistics (chi-square test). The results were organized and presented in tables and graphs to make them easy to understand.

Table 1 Methodology of The Research

Research Methodology	
Research Design	Descriptive Survey Research
Population	All government primary students in Keonjhar district, Odisha
Participants	7 government upper primary schools from Sadar block (4 rural, 3 urban)
Total Participants	140 students (20 per school)
Gender Distribution	65 boys, 75 girls =140
Sampling Technique	Random selection
Tools of Research	Questionnaires: Structured data from students and teachers
	Semi-structured Interviews: In-depth insights on experiences with assessment methods
	Classroom Observations: Observing actual use of assessment techniques in teaching
Data Analysis Methods	Descriptive Statistics: Mean, Percentage, Standard Deviation - Inferential Statistics: t-test (compare group means), Chi-square test (categorical differences)
Presentation of Results	Tables and graphs for clarity and easy understanding

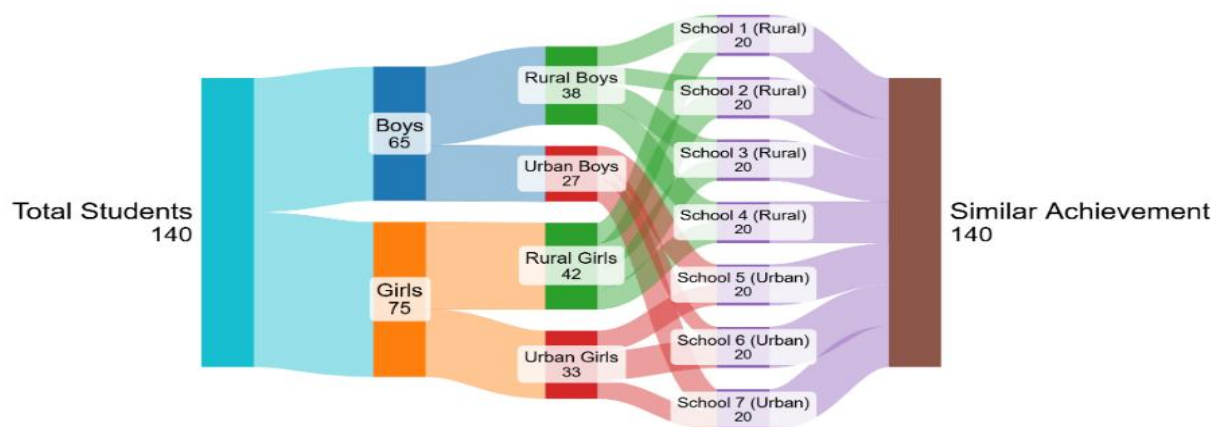
Planning for the study

The study was conducted over a period of 3months from 1st January 2025 to 25th April 2025 encompassing the academic session of 2023-2024 to ensure comprehensive data collection & analysis. The present study was carried out in a planned manner and steps. The study includes the steps like identification of the research site, permission from the authorities of institutions and Block Education Officer (BEO) for field visit, collection of data, and Note taking. Finally, data were organized for analysis, interpretations to reach with some findings.

Table 2 *Distribution of a participants on the basis on types of school and gender*

SL. No	Type of school	Gender Distribution		Sum up
		Male	Female	Total
1.	School 1 (Rural)	10	10	20
2.	School 2 (Rural)	08	12	20
3.	School 3(Rural)	10	10	20
4.	School 4(Rural)	10	10	20
5.	School 5 (Urban)	10	10	20
6.	School 6 (Urban)	06	14	20
7.	School 7(Urban)	11	09	20
8.	Total	65	75	140

This table presents the gender distribution across seven different schools, categorized into rural and urban types, with each school having a total of 20 individuals. The first four schools are rural, and the remaining three are urban. Overall, the total number of males across all schools is 65, while the total number of females is 75, making a grand total of 140 individuals of total schools.



[Source: www.sankeyMATIC.com]

Fig 01. *Representing the distribution of a participants on the basis on types of school and gender*

The Sankey diagram (Fig 01) is representing the distribution of 140 students across gender, location, and school categories, culminating in their achievement outcomes. The sample consists of boys (N=65) and girls (N=75). In terms of geographical location, the representation of boys (N=38) and girls (N=42) in rural areas in comparison to urban areas where boys' representation (N=27) and girls (N=33) which indicates a rural dominating sample. The student's distribution shows across seven government schools which includes which includes four rural and three urban school. The researcher selected an equal number of students (N=20) form each school. Though minor variation in term of sender composition was observed still over all distributions were balanced. The result shows similar achievement for all class level with different assessment techniques. The absence of divergence in the learning achievement signifies that achievement scores were consistence across geographical location, gender and different school context. the findings are aligned with the findings of independent samples t-test and chi-square analysis. form these it was revealed that there were no significant differences among group. These findings indicate and

also support the view that equitable assessment practices will minimize the outcome disparities across different student groups Black, P., & Wiliam, D. (1998); . Furthermore, the uniformity of outcomes is consistent with research suggesting that well-designed instructional and assessment strategies promote comparable academic achievement irrespective of demographic variables Hattie, J. (2009). Overall, the Sankey diagram provides a compelling visual confirmation that demographic and contextual factors exert minimal influence on students' academic performance.

Table 3 Mean scores comparison table for male, female, rural and urban with respect to academic performance

Group	Group	N	Mean (M)	Sd	df	Calculated t-value	Critical t-value (0.05)	Remarks
Class I	Female	16	37.56	3.96	26	0.54	2.06	Not Significant
	Male	12	35.66	5.49				
Class II	Female	16	35.54	6.96	26	0.39	2.06	Not Significant
	Male	12	36.47	5.55				
Class III	Female	15	36.82	7.18	26	0.36	2.06	Not Significant
	Male	13	37.69	5.73				
Class IV	Female	15	34.69	5.45	26	0.86	2.06	Not Significant
	Male	13	36.33	5.17				
Class V	Female	13	29.05	4.94	26	0.18	2.06	Not Significant
	Male	15	29.4	5.43				
Area	Rural	80	34.73	5.99	138	0.45	1.962	Not Significant
	Urban	60	35.17	6.62				

The table no 03 highlighted that comparative analysis of student's academic performance based on gender (Class I–V) and location (rural and urban). It also includes statistical measures such as sample size (N), mean scores(M), standard deviation (Sd), degrees of freedom (df), calculated t-values and critical t-values at the 0.05 level of significance. The calculated t-values show lower than the critical t-values at the 0.05 level of significance which indicates that the differences in academic performance between boys and girls (Class I–V) also rural and urban students are not statistically significant. Another site gender and location do not significantly affect academic performance in this study.

Objective 1: “To examine the impact of various assessment techniques on the academic achievement of primary school students.”

The findings of the study prove that various assessment techniques have a positive role in supporting student's learning and academic achievement at the primary level. Different assessment techniques such as class tests, assignments, oral questioning, observation and continuous evaluation that help to teachers for better understand student's learning progress and difficulties in teaching-learning process. These techniques provide regular feedback to both teachers and students which enforce the improvement of teaching strategies and learning outcomes. The analysis of academic performance data indicates that students benefit from continuous and diverse assessment practices rather than only on traditional examinations and rote learning. Overall, the use of multiple assessment techniques supports better understanding, active participation and gradual improvement in student's academic achievement.

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The objective of the study “*To examine the impact of various assessment techniques on the academic achievement of primary school students*” is supported by the findings which indicate a positive role of diverse assessment practices for promoting teaching efficiency and learning outcomes. Techniques such as class tests, assignments, oral questioning, observation and continuous evaluation help to teachers monitor student’s progress and helps to make identify learning difficulties effectively for remedial classes. These findings associated with the principles of Assessment for Learning and emphasizing continuous feedback as a key factor in improving achievement Black, P., & Wiliam, D. (1998); Wiliam, D. (2011). Regular feedback is a regular improvement that help to enables students for understand their strengths and weakness areas for improvement and thereby promoting better academic performance Hattie, J., & Timperley, H. (2007). The results also support Constructivist Learning Theory believed that learning as an active process. Assessment methods like observation and oral questioning encourage participation and reflection in teaching -learning process that helping students construct knowledge meaningfully Vygotsky, L. S. (1978); Piaget, J. (1972). Moreover, the study highlights that continuous and varied assessment practices are more effective than that solely on traditional examinations. Such approaches enhance motivation, engagement and inclusivity by addressing individual learner differences Shepard, L. A. (2000); Gipps, C. V. (1994). Therefore, the integration of multiple assessment techniques improve teaching strategies, fosters active participation and leads to gradual improvement and achievements of leering outcome in student’s academic achievement. Therefore, continuous and learner-cantered assessment practices are essential for enhancing primary school student’s learning outcomes.

Objective 2: “*To compare the achievement scores of students taught using different assessment techniques.*”

The findings of the study indicate that there are slight differences in the achievement scores of students taught using different assessment techniques. However, the statistical analysis prove that these differences are not significant at the 0.05 level of significance. In other research analysis evidence highlighted that some students performed slightly better under certain assessment techniques and the calculated statistical values suggest that the variation in scores may be due to normal variation rather than a strong effect of a particular assessment technique. Therefore, it can be concluded that different assessment techniques produced relatively similar academic achievement among the students in the sample.

This finding suggests that while certain techniques may appear to with marginally better results such as variations are likely due to normal fluctuations rather than the effectiveness of a specific method in teaching-learning environment. This aligns with research indicating that the quality of implementation of assessment practices is more influential than the type of assessment itself Hattie, J. (2009). According to Assessment for Learning principles, the effectiveness of assessment lies in feedback, clarity of objectives and student engagement rather than the specific form of assessment used Black, P., & Wiliam, D. (1998); Wiliam, D. (2011); The constructivist viewpoint, learning depends on active engagement and meaningful interaction rather than assessment format alone Vygotsky, L. S. (1978).

Objective3: “*To compare the mean achievement scores of boys and girls at the primary level.*”

After analysis of above data shows that the mean achievement scores of boys and girls at the primary level are almost similar across all classes. Although slight differences were observed in some classes, the calculated t-values are lower than the critical value at the 0.05 level of significance. This indicates that the differences in mean scores between boys and

girls are not statistically significant. Therefore, the study concludes that gender does not significantly influence the academic achievement of primary school students in the selected sample.

After analysis of data, it indicated that gender similarities hypothesis proposed by Janet Shibley Hyde (2005) which suggests that males and females are similar in the context of cognitive, mental process and academic achievements. In other researcher highlighted that empirical evidence from meta-analyses data indicated that negligible gender differences in overall academic achievement and evaluation process Voyer, D., & Voyer, S. D. (2014). The zero absence of significant result of gender differences indicate that modern educational practices are fostering the more inclusive and equitable opportunities among students that enhance similar achievement rate in this era. In another context, the various factors such as teacher support, feedback, students' readiness and instructional quality content may play a more crucial for improving the achievement ate rather than gender Hattie, J. (2009).

RQ₁. *What is the impact of different assessment techniques on the academic achievement of primary level students?*

As per the findings, different assessment techniques have a positive role in monitoring student's learning at the same time there is no significant difference in achievement scores between the different assessment techniques. Mean scores are very nearer to each other result and the t-value is lower than the critical value in all cases that suggesting all assessment methods contribute equally to student's academic performance.

Table 4 Repeated Measure ANOVA table

Variables	Sum of square (SS)	df	Mean square	F	P-Values	η^2
Assessment Techniques	1.20	02	0.60	0.012	.988	0.000
Error	13850.00	278	49.82			
Total	13851.20	280				

From the repeated measure ANOVA table, no 04, it can be inferred that, the effect of different assessment techniques is not statistically significant, with $F(2, 278) = 0.012$ and a p-value of (0.988). Since the P-value is much greater than the typical significance level of 0.05, we can conclude there is no significant difference between the groups. The effect size, indicated by (partial $\eta^2=0.000$), suggests that, different assessment techniques having negligible effect on academic performance.

RQ₂: *Is there a significant difference in achievement scores of students taught by using different assessment techniques?*

The comparison of achievement scores between students taught using different assessment techniques is presented in Table 2. Students in Technique A had a mean score of 35.14 with a standard deviation of 6.05, while those in Technique B had a mean score of 34.89 with an SD of 5.92. The calculated t-value of 0.41 with $df = 138$ was much lower than the critical t-value of 1.962 at the 0.05 level of significance. This finding indicates that difference in mean achievement scores between the two groups is not statistically significant. In other words, this difference is minimal and may be due to random variation rather than the effect of the assessment method itself. Therefore, it can be concluded that both assessment techniques produced comparable academic outcomes and suggesting that the choice of assessment method does not significantly influence student's achievement at the primary

level. This finding highlights that multiple assessment approaches can be effectively used without creating disparities in academic performance.

RQ3: *Is there a significant difference in the mean achievement scores of boys and girls at the primary level?*

The comparison of academic achievement between boys and girls is presented in the table 03. Boys (N = 65) obtained a mean score $M = 35.51$ with a standard deviation of $Sd = 5.68$, while girls (N = 75) scored slightly higher with a mean of $M = 35.89$ and an $Sd = 6.01$. The calculated value of t-value of 0.52 with $df = 138$ is lower than the critical t-value of 1.962 at the 0.05 level of significance. This highlighted that the difference in mean achievement scores between boys and girls are not statistically significant in this analysis. In other site girls' mean score is marginally higher. In this small difference is likely due to chance rather than gender-related factors. It concluded that gender does not have a significant effect on the academic performance of primary school students in this study. The results indicate that both boys and girls performed at a similar level of achievement and highlighting the equitable impact of the teaching and assessment practices implemented in the selected schools.

Chi-Square Test of Academic Achievement (Categorical Differences)

The calculated Chi-square values showed that both gender ($\chi^2 = 0.92$) and geographical location ($\chi^2 = 1.05$) were less than the critical value at the 0.05 significance level ($\chi^2 = 5.991$). So that there is no significant between gender, geographical area such as urban and rural and the distribution of students across achievement categories. In other words, the boys and girls and rural and urban students were similarly distributed across different achievement levels that confirming the neither gender nor geographical location significantly affects student's academic achievement.

Findings

After analysis of data, we found that the class-wise level, minor variations were observed between boys and girls. So that none of these differences reached statistical significance. In Class I, girls ($M = 37.56$, $SD = 3.96$) indicated slightly outperformed boys ($M = 35.66$, $SD = 5.49$), the difference was not significant ($t = 0.54$, $p > .05$). Similarly, in Class II, boys ($M = 36.47$) scored was higher than girls ($M = 35.54$), but the difference remained insignificant ($t = 0.39$, $p > .05$). In Class III and Class IV, boys demonstrated slightly higher mean scores than girls, but the differences were negligible and statistically non-significant ($t = 0.36$ and 0.86 , respectively, $p > .05$). In Class V, the mean scores of boys ($M = 29.40$) and girls ($M = 29.05$) were nearly identical, further confirming the absence of meaningful variation ($t = 0.18$, $p > .05$). The overall gender comparison also indicated no significant difference between boys ($M = 35.51$, $SD = 5.68$) and girls ($M = 35.89$, $SD = 6.01$), as the obtained t-value (0.52) was lower than the critical value at the 0.05 level. Likewise, the rural–urban comparison showed that rural ($M = 34.73$, $SD = 5.99$) and urban students ($M = 35.17$, $SD = 6.62$) did not differ significantly ($t = 0.45$, $p > .05$). Furthermore, the Chi-square analysis ($\chi^2 = 0.92$ and 1.05 , $p > .05$) confirmed that there is no significant association between students' achievement categories and their demographic variables.

DISCUSSION

The present findings reveal no statistically significant differences in students' achievement scores across gender, class levels and locality (both rural–urban). This pattern suggests a relative uniformity in academic performance that indicating the demographic variables such as gender and residence may no longer be strong determinants of achievement in contemporary educational contexts. These findings connecting with the growing body of

literature that focus the diminishing gender gap in academic outcomes due to increased access to education, gender-sensitive policies and inclusive pedagogical practices.

There is no significant on gender differences across all classes supports earlier research indicating that boys and girls perform and when provided with equal learning opportunities and resources, gender is no important factor for achievement. Several researchers support the finding that gender and locality do not significantly influence academic achievement. The gender similarities hypothesis proposed by Hyde, J. S. (2005). It argues that males and females are similar on most cognitive and educational variables. Empirical evidence prove that gender does not work differences in academic performance Voyer, D., & Voyer, S. D. (2014). Additionally, Hattie, J. (2009) highlighted that factors such as teaching quality, feedback and classroom environment have a far greater impact on achievement than demographic variables. Like the researcher, Vygotsky, L. S. (1978). proved that role of social interaction and learning context that suggesting achievement is shaped more by instructional conditions than by inherent learner characteristics. Currently, the global reports also indicate a reduction in rural–urban disparities due to policy interventions and improved access to education UNESCO. (2021); World Bank. (2020).

Disagreements shown by different researchers

In contrast, some researchers prove that gender and locality still play a significant role in shaping academic outcomes but does not impact on achievement outcome. For instance, Sirin, S. R. (2005); found that socioeconomic status often linked with rural–urban differences have a strong effect on academic achievement. Studies have also reported gender differences in specific domains. For example, Else-Quest, N. M., Hyde, J. S., & Linn, M. C. (2010). found that variations in mathematics achievement across countries, suggesting that gender gaps may persist depending on socio-cultural contexts. Furthermore, ASER. (2018). reported learning disparities between rural and urban students in India, primarily due to differences in infrastructure, teacher availability and learning resources. These findings indicate that the absence of differences in the present study may be context-specific rather than universal.

Contradictory perspectives of different researchers

Some scholars provide a more nuanced interpretation, suggesting that gender and locality differences are conditional rather than absolute. Researcher like Geary, D. C. (2011).; highlighted that in his research the gender differences may emerge in specific cognitive domains but does not vital factor in overall achievement. Similarly, Ladson-Billings, G. (2021). emphasized that culturally responsive pedagogy can minimize achievement gaps between both gender implying that differences are influenced by teaching practices rather than fixed traits. proves that inclusive and equitable instruction strategy help to reduce disparities and discrimination among diverse learner groups. In another researcher like Bronfenbrenner, U. (1979). ecological systems theory suggests that multiple environmental areas such as (family, school and community) interact to influence achievement that which may explain why differences are not always directly observable and measurable.

In current studies highlighted that disparities due to lack of infrastructural limitations and resource gaps in rural areas ASER. (2018). However, recent research data indicated that digital learning initiatives, policy reforms and improved school access have contributed to reducing these inequalities and established inclusive environment UNESCO. (2021); World Bank. (2020). When curriculum and content delivery, assessment methods and classroom environments are consistent without disparities and discrimination. This is supported by

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research on equitable pedagogy and culturally responsive teaching which help to connecting content and subject matter also indicated that inclusive instructional approaches can minimize achievement gaps Gay, G. (2018). Ladson-Billings, G. (2021).

Combine of all the above study represented that findings were associated with the growing consensus that achievement differences based on gender and locality are diminishing, especially in equitable and inclusive educational environment. However, contrasting evidence reminds us that such equality may depend on contextual factors such as socio-economic conditions, quality of schooling, student interest and cultural influences contents. Thus, the discussion indicates that while demographic variables may not show direct statistical effects on academic achievements. In other evidence of their indirect influence through environmental and instructional factors cannot be ignored. In conclusion, the study contributes to the growing evidence that gender and locality are becoming low influential predictors of academic achievement in school education. The findings prove that the importance of focusing on instructional quality, learner-cantered pedagogy and equitable educational practices to sustain and further enhance in this field.

CONCLUSION

This study aimed to analysis the impact of different assessment techniques on the academic achievement of primary school students and to compare performance across gender and geographical location. The findings indicate that various assessment methods, including continuous assessment, classroom tests, observations and oral questioning that encourages student learning by providing feedback and monitoring progress. Statistical analysis of academic performance proved that the mean scores of students taught using different assessment techniques were very similar and the calculated t-values were lower than the critical values at the 0.05 significance level. In other hand a comparison of boys and girls across Classes I–V showed no significant difference in mean achievement scores, suggesting that gender does not influence academic performance. Similarly, rural and urban students demonstrated comparable performance, with t-test and Chi-square analyses confirming that location had no significant effect on learning outcomes. Overall, the study concludes that the use of multiple assessment techniques positively contributes to learning, but neither gender nor geographical location creates significant differences in academic achievement. These findings highlight the importance of implementing diverse and continuous assessment practices in primary education to enhance learning for all students equitably.

Recommendation

Teachers should implement diverse and continuous assessment techniques during teaching learning process and it including formative, performance-based and observational methods indicate to monitor learning and provide timely feedback which support to continuous improvements in this field. Equal opportunities should be ensured for all students, regardless of gender, geographical location to enhance academic achievement and support holistic development at the primary level. Future researcher may support in different geographical areas such as urban and rural for better understanding about different assessment technique and its impact on achievement on diverse students as well for higher classes.

Scope For Further Research

This study examines the impact of assessment techniques on academic achievement among primary school students in selected government schools. Other research analysis can expand the sample to include private and semi-urban schools to compare the effectiveness of assessment practices at different educational contexts. Future studies may also examine the

long-term effects of specific assessment strategies on student's cognitive, affective, social and emotional development. Research can explore the relationship between teacher training, classroom environment and assessment practices as well as student's perceptions of different assessment methods. Additionally, mixed-method approaches could be implemented to study both quantitative outcomes and qualitative experiences that providing a more holistic understanding of assessment effectiveness. Studies can also investigate how technology-based assessments, such as digital quizzes and e-portfolios and influence learning outcomes. Expanding research in these areas will help policymakers and educators design more effective, inclusive and context-sensitive assessment strategies for primary education.

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Conflict of Interest

The author declares no conflict of interest for publications, no financial, personal, or institutional relationships have influenced the design, data collection, analysis, interpretation, or reporting of the study. The research was conducted independently, and all findings are presented objectively without any bias or influences.

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