A Study On Understanding Primary School Teachers' Awareness And Adoption Of Innovative Pedagogic Practices In Medchal-Malkajgiri District Of Hyderabad, Telangana

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Abstract
Innovative pedagogical practices play a critical role in enhancing the quality of teaching and learning in primary education, yet teachers often encounter barriers such as limited training, infrastructural gaps, and lack of resources (Panda, Kharwar, & Patel, 2025). This study explored primary school teachers' awareness and implementation of innovative pedagogical approaches in the Medchal-Malkajgiri district of Hyderabad, Telangana, India.
A mixed-methods design was employed, combining a descriptive survey with semi-structured interviews and classroom observations. Stratified random sampling included teachers from government, private, and international schools. Quantitative data were analyzed using descriptive statistics and ANOVA, while qualitative data provided contextual insights into classroom practices.
Findings revealed that while teachers exhibited moderate to high awareness of strategies such as activity-based learning, digital tools, experiential learning, and collaborative methods (Ghose & Behera, 2024), adoption levels varied by school type. Government school teachers reported lower implementation due to infrastructural and curricular limitations, private school teachers showed higher use of technology and activity-based learning, and international school teachers demonstrated the greatest adoption, supported by flexible curricula and ample resources. Demographic factors such as age, experience, and qualifications showed limited influence, whereas institutional type significantly shaped adoption patterns (Sahu & Bankira, 2025).
The study underscores the importance of professional development, resource support, and favorable policy frameworks in fostering innovation. By addressing the gap between awareness and practice, stakeholders can strengthen teaching effectiveness and student engagement in primary schools (Panda et al., 2025).
Keywords: *Awareness and Adoption of Innovative Pedagogic Practices, Primary Education, Holistic Understanding, mixed-methods research, school types*

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I.   Introduction

Education has always been fundamental to social progress, and primary education plays a crucial role in shaping young learners' cognitive, social, and emotional growth. Teachers are central in this process, serving not only as transmitters of knowledge but also as facilitators of skills essential for children's holistic development. In modern educational paradigms, innovative pedagogic practices—which promote creativity, critical thinking, and collaboration—have gained traction. These approaches move away from traditional rote learning towards student-centred methods such as experiential learning, activity-based instruction, and the integration of technology. As Mishra and Koehler (2006) argue, effective teaching with technology is not merely about using tools but about understanding their pedagogical affordances and constraints.

In India, the education system underwent significant changes following the implementation of the *National Education Policy (NEP) 2020*, which emphasizes a constructivist pedagogy where students engage in hands-on and reflective learning (Ministry of Education, 2020). The policy mandates that teachers acquire competencies to adopt innovative teaching strategies, aligning with global standards. Despite these reforms, evidence suggests that the implementation of innovative pedagogies remains inconsistent, particularly in regional or semi-urban/rural settings (Jhingran, 2005; Srivastava, 2020).

The Medchal-Malkajgiri district in Hyderabad, Telangana, presents a context marked by demographic diversity—urban, semi-urban, and rural zones—which offers a unique setting to study how primary school teachers perceive and enact pedagogical innovation. In similar Indian contexts, challenges have included limited access to professional development, inadequate infrastructure, and low awareness of modern educational methods (Ghose & Behera, 2024; Sahu & Bankira, 2025). These barriers raise important questions about how ready teachers are to adopt and sustain innovative pedagogic practices in their classes.

This study focuses on exploring teacher awareness and adoption of such pedagogic innovations among primary school educators in Medchal-Malkajgiri. It investigates their attitudes towards innovation, availability of training, and the role of institutional support. It also seeks to identify obstacles to adoption and to suggest strategies for overcoming them.

The findings are expected to provide important insights for policymakers, teacher training institutions, and school leaders. By revealing the current state of pedagogic innovation in primary schools in Medchal-Malkajgiri, stakeholders will be better equipped to design interventions that address gaps in awareness and practice. The insights also contribute to the broader discussion on improving primary education in India to meet the needs of 21st-century learners (Panda, Kharwar, & Patel, 2025; Srivastava, 2020).

In conclusion, this research underscores the importance of empowering teachers with the knowledge, resources, and institutional support needed to embrace innovative pedagogies. By analyzing how pedagogic innovation unfolds in Medchal-Malkajgiri, the study adds to efforts aimed at transforming primary education into a more inclusive, engaging, and effective system.

II. Review Of Literature

Innovative pedagogical practices—such as collaborative learning, inquiry-based instruction, and technology integration—have been shown to enhance student engagement and learning outcomes (Means et al., 2013). However, the extent to which primary school teachers are aware of and implement such practices is influenced by factors including training, institutional support, and teacher attitudes (Ertmer & Ottenbreit-Leftwich, 2010).

This study is guided by two complementary theoretical models: the Technological Pedagogical Content Knowledge (TPACK) framework and Kolb's Experiential Learning Theory (ELT).

The TPACK framework (Mishra & Koehler, 2006; Koehler & Mishra, 2008) expands Shulman's (1986) Pedagogical Content Knowledge (PCK) by integrating technology as a critical dimension. TPACK emphasizes the interplay of Content Knowledge (CK), Pedagogical Knowledge (PK), and Technology Knowledge (TK), along with their intersections—PCK, TCK, TPK, and TPACK. This framework provides a lens for evaluating teachers' preparedness to integrate technology meaningfully with pedagogy and content, particularly in elementary and multi-subject classrooms. Assessments using TPACK help identify areas where teachers require professional development to implement innovative strategies effectively (Mansour et al., 2024).

Kolb's ELT (1984) complements TPACK by describing the learning process through which teachers internalize and apply new knowledge. The four-stage cycle—Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE)—illustrates how awareness translates into classroom adoption. Teachers progress through cycles of experience, reflection, conceptualization, and application, allowing iterative improvement of instructional strategies (Healey, 1998; Zuber-Skerritt, 1992b).

By integrating TPACK and ELT, this study examines both the "what" (knowledge domains) and the "how" (experiential processes) of pedagogical innovation. TPACK identifies the competencies teachers need, while ELT explains the mechanisms through which teachers develop, reflect on, and apply these competencies in practice. This dual-theoretical framework provides a comprehensive lens for analyzing awareness, adoption, and professional development needs in primary education contexts.

Rationale and Significance of the Study

The National Education Policy (NEP) 2020 provides a foundational framework for exploring teachers' awareness and adoption of innovative pedagogic practices, particularly in primary education. NEP 2020 emphasizes achieving foundational literacy and numeracy by Grade 3 through play-based, activity-driven, and inquiry-oriented approaches, alongside experiential, competency-based, and technology-enabled learning (Government of India, 2020). The policy also mandates at least 50 hours of annual continuous professional development (CPD) to equip teachers with emerging pedagogical strategies and digital tools, while encouraging autonomy and reflective practice in teaching (Government of India, 2020).

Empirical studies reveal variability in teachers' awareness and adoption of innovative teaching methods. Experienced educators may demonstrate deeper understanding, yet certain practices, such as metacognition, remain underutilized (Colognesi et al., 2024; Panda, Kharwar, & Patel, 2025). Factors affecting adoption include professional development opportunities, access to resources, motivation, and institutional support (Liashenko, 2022; Ostrovska, 2022; Kichuk, 2022; Cooke et al., 2023). Adoption of innovative pedagogy positively impacts

student engagement, learning outcomes, and teacher motivation, but barriers such as insufficient technology, rigid curricula, and inadequate training persist (Iqbal et al., 2024; Ogwazu, 2024).

Despite these findings, research on the Medchal-Malkajgiri district of Hyderabad remains limited. Existing studies largely focus on other regions or isolated aspects of innovation, such as technology integration or professional development, without examining the combined effects of awareness, adoption, enabling factors, and barriers in a local primary education context (Panda et al., 2025; Mansour et al., 2024). Moreover, few studies explore how NEP 2020 directives are operationalized at the classroom level or how teachers progress from awareness to sustained adoption of innovative practices.

The present study addresses these gaps by examining both awareness and adoption of innovative pedagogic strategies among primary school teachers in Medchal-Malkajgiri. Using the TPACK framework (Mishra & Koehler, 2006) and Kolb's Experiential Learning Theory (Kolb, 1984), the research investigates the knowledge domains teachers require and the experiential processes through which they translate awareness into classroom practice. This dual-theoretical approach allows for a comprehensive analysis of teachers' preparedness, professional development needs, and the contextual factors influencing pedagogical innovation.

The significance of this study lies in its potential to inform policy, teacher training, and school leadership strategies, enabling targeted interventions to enhance professional readiness, resource allocation, and institutional support. By fostering student-centered, technology-enhanced, and inquiry-driven learning, the study contributes to improving teaching effectiveness and student outcomes in line with NEP 2020's vision for quality and equitable primary education in India.

III. Methodology

Research Design

This study adopted a mixed-methods design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of primary school teachers' awareness and adoption of innovative pedagogical practices. A descriptive survey design served as the primary method, complemented by semi-structured interviews and classroom observations to capture nuanced insights into teachers' lived experiences (Creswell & Plano Clark, 2018; Cohen, Manion & Morrison, 2018). The mixed-method approach ensured methodological triangulation, enhancing validity and depth in interpretation (Johnson, Onwuegbuzie & Turner, 2007).

Population and Sample

The study population comprised primary school teachers from government, private, and international schools in the Medchal-Malkajgiri district, Hyderabad, Telangana, in India, reflecting diverse institutional contexts (Bray, 2011; Tilak, 2020).

A stratified random sampling technique was employed, with disproportionate allocation to ensure adequate representation from each school type (Creswell & Creswell, 2018; Lohr, 2019). The final sample included 61 teachers: 15 from government, 24 from private, and 22 from international schools. Within each stratum, schools and participants were randomly selected, accounting for age, type of school and educational qualifications.

Tools and Instruments

Quantitative: Structured questionnaires to measure teachers' awareness and adoption of innovative pedagogical practices.

Qualitative: Semi-structured interviews and classroom observation checklists to explore perceptions, challenges, and real-time teaching practices (Kvale & Brinkmann, 2015).

All instruments underwent expert review for content validity to ensure alignment with research objectives (Creswell & Creswell, 2017).

Data Collection

Data were collected systematically while adhering to ethical standards, including voluntary participation, confidentiality, and transparency (AERA, 2011). Questionnaires were administered first, followed by interviews and classroom observations to provide contextual depth. The process maintained reliability and rigour, guided by the study objectives and research questions (Cohen et al., 2018).

Data Analysis

Quantitative data: Descriptive and inferential statistics were used to assess awareness levels and adoption patterns across variables (age, school type, qualifications).

Qualitative data: Thematic analysis was applied to interviews and observations to identify patterns, perceptions, and contextual influences (Braun & Clarke, 2006).

The integration of statistical and thematic analysis provided both breadth and depth, allowing the study to answer both "what" (patterns of adoption) and "why" (underlying reasons and contextual factors) (Johnson & Onwuegbuzie, 2004).

Table 1: Distribution of sample with respect to age

S.No.	Age	Count of Primary School Teachers	% Distribution
1	Below 25	1	1.64
2	25-35	14	22.95
3	36-45	32	52.46
4	46 and above	14	22.95
Total		**61**	**100**

Figure 1: Distribution of sample with respect to age
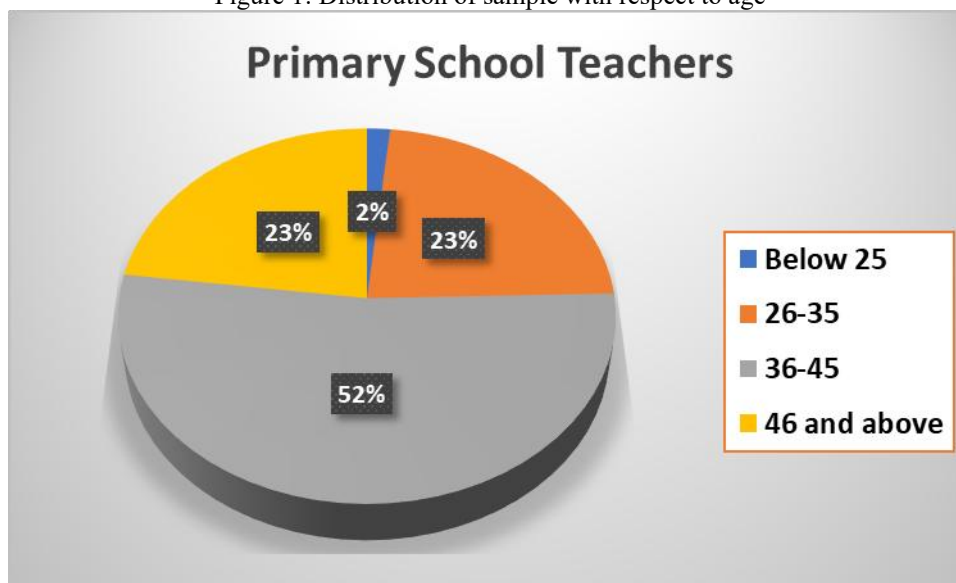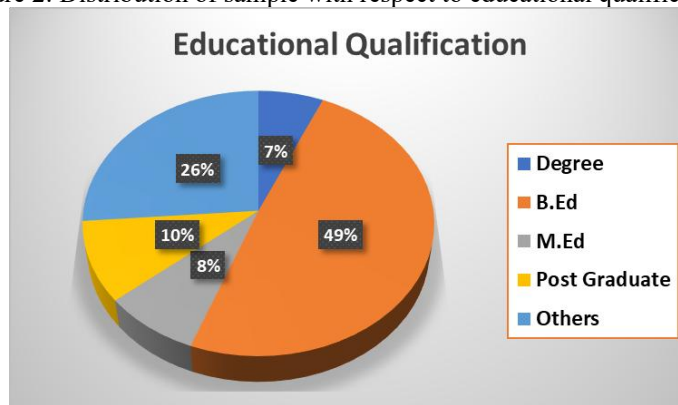

Interpretation

Based on Table 1, it is observed that the age distribution of the sample consists of 2% below 25 years, 23% between 26–35 years, 52% between 36–45 years, and 23% above 46 years. This indicates that the sample is not equally stratified across age groups and therefore is not evenly distributed.

Table 2: Distribution of sample with respect to educational qualifications

S.No.	Qualification	Count of Educational Qualifications	% Distribution
1	Degree	4	6.56
2	B.Ed	30	49.18
3	M.Ed	5	8.20
4	Post Graduate	6	9.84
5	Others	16	26.23
Total		**61**	**100**

Figure 2: Distribution of sample with respect to educational qualifications
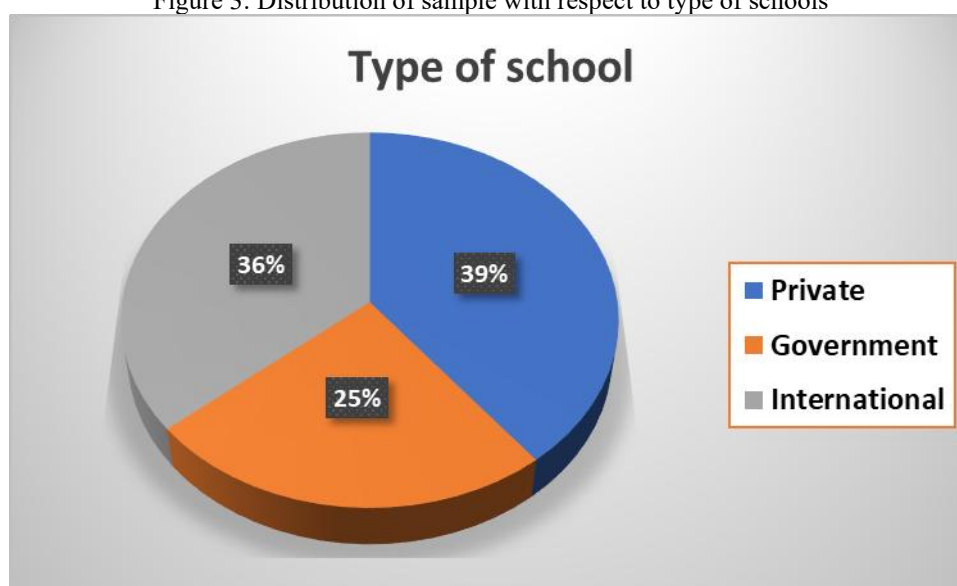
Interpretation

Based on Table 2, it is observed that the educational qualifications of the sampled primary school teachers are as follows: Degree – 7%, B.Ed – 49%, M.Ed – 8%, Post Graduate – 10%, and Others – 26%**.** This distribution clearly indicates that the sample is neither equally stratified nor uniformly distributed across the different qualification categories.

Table 3: Distribution of sample with respect to type of schools

S.No.	School Type	Count of School Type	% Distribution
1	Government	15	39.34
2	Private	24	24.59
3	International	22	36.07
Total		**61**	**100**

Figure 3: Distribution of sample with respect to type of schools

Interpretation

Based on Table 3, it is observed that the distribution of teachers taken as a sample for the study includes 25% from government primary schools, 39% from private schools, and 36% from international schools. This indicates that the sample is not equally stratified and not uniformly distributed across the three categories of schools.

Data Collection

The study was conducted in the Medchal-Malkajgiri district of Hyderabad between June and August 2025, using a mixed-methods approach to examine primary school teachers' awareness and adoption of innovative pedagogic practices. A stratified random sample of 61 teachers from government, private, and international schools participated in the research.

Procedure

Data collection was implemented in sequential phases:

1. *Ethical approval and consent*: Formal permission was obtained from school authorities, and teachers were informed about the study's objectives, voluntary participation, confidentiality, and anonymity (Cohen, Manion, & Morrison, 2018; BERA, 2018).
2. *Pilot testing:* A preliminary survey was administered to 15 teachers to refine ambiguous items and ensure clarity and contextual relevance (van Teijlingen & Hundley, 2001).
3. *Survey administration:* Teachers completed a structured questionnaire comprising 90 items on a five-point Likert scale to assess awareness and adoption of innovative practices.
4. *Interviews and observations:* Semi-structured interviews with 15 teachers and classroom observations (two to three classrooms per school type) were conducted to validate responses and provide in-depth qualitative insights (Kvale & Brinkmann, 2015; McMillan & Schumacher, 2014).

5. *Data processing:* Responses were cleaned, coded, and analyzed using descriptive statistics (mean, SD) and inferential tests (One-way ANOVA), while qualitative data were thematically analyzed and triangulated with quantitative findings (Creswell & Plano Clark, 2018).

Ethical Considerations

Ethical protocols were strictly observed throughout, including informed consent, voluntary participation, confidentiality, and protection of identities (Creswell & Creswell, 2018; BERA, 2018). Teachers were encouraged to clarify doubts and assured that their responses would be used solely for research purposes.

Reliability and Validity

Reliability: Internal consistency was verified using Cronbach's Alpha (α = 1.033 for awareness; α = 0.961 for adoption), indicating excellent reliability (Nunnally, 1978; Tavakol & Dennick, 2011).

Validity: Content, construct, and contextual validity were established through expert review, alignment with theoretical frameworks, and pilot testing, ensuring the instrument accurately captured teachers' awareness, adoption, and barriers to innovative pedagogy (Haynes, Richard, & Kubany, 1995; Creswell & Creswell, 2018).

This systematic and ethically grounded procedure ensured comprehensive, reliable, and contextually valid data, enabling a robust analysis of primary school teachers' engagement with innovative pedagogical practices.

Data Analysis and Interpretation

This chapter presents the analysis of data collected from 61 primary school teachers in Medchal-Malkajgiri district, examining both independent variables (age, educational qualification, teaching experience, type of school, and academic discipline) and dependent variables (awareness and adoption of innovative pedagogic practices). Organizing data in this way allows meaningful patterns to emerge between demographic factors and research outcomes (Creswell & Creswell, 2018).

Test of Normality

Before applying parametric tests, normality of the datasets was assessed using the Shapiro–Wilk test, a reliable method for small to moderate sample sizes (Razali & Wah, 2011; Ghasemi & Zahediasl, 2012). Results indicated that both awareness (W = 0.9909, p = 0.9307) and adoption (W = 0.9536, p = 0.0789) scores did not significantly deviate from a normal distribution, validating the use of parametric analyses.

Figure 3: Graphical representation of Normality of Awareness and Adoption
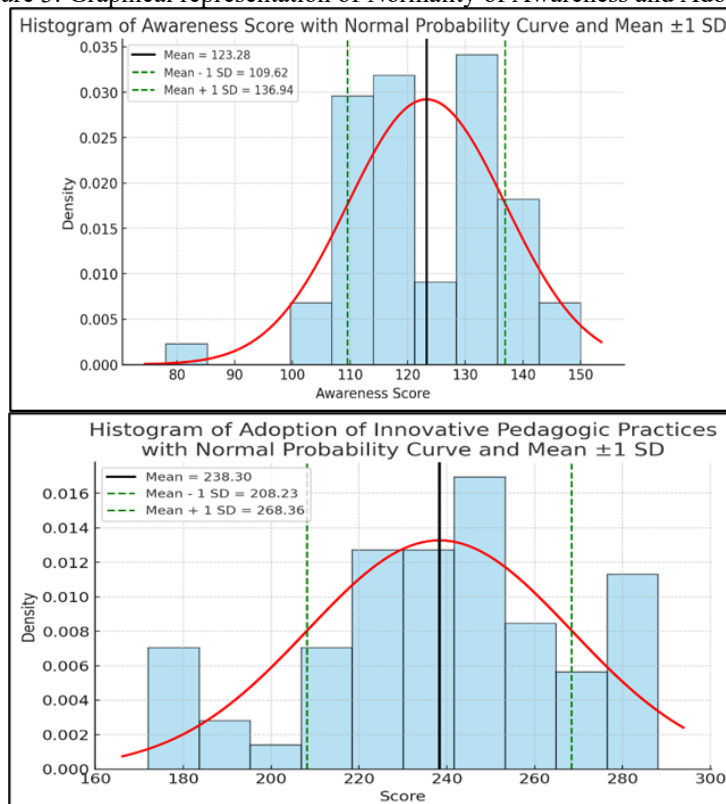
Descriptive Statistics

Awareness of Innovative Pedagogies: Scores ranged from 78 to 150, with a mean of 123.28 (SD = 13.66), slight positive skew (0.539), and platykurtic distribution (–0.320), indicating moderate to high awareness among teachers. Component-wise analysis showed moderate-to-high levels in Familiarity, Challenges, and Support, while Knowledge was comparatively lower (Field, 2018).

Adoption of Innovative Pedagogic Practices: Scores ranged from 172 to 288, with a mean of 238.30 (SD = 29.81), slight negative skew (–0.386), and platykurtic distribution (–0.283), reflecting generally high adoption with variability across individuals. Technological integration, student-centered approaches, collaborative learning, and assessment awareness were particularly strong, whereas inclusive practices and reflective professional development showed moderate variability.

Table 4: Descriptive Statistics of the Main Study

Variable (DV)	N	Min	Max	Mean	SD	Skewness	Kurtosis
1. Awareness of Innovative Pedagogies	61	78	150	123.278	13.656	0.539	−0.320
2. Adoption of Innovative Pedagogic Practices	61	172	288	238.295	29.813	−0.386	−0.283

Overall Interpretation

The data indicate that teachers' awareness and adoption of innovative pedagogic practices are relatively high. Awareness scores were more consistent, while adoption showed greater variability, suggesting that while teachers recognize modern strategies, their classroom implementation differs. Approximate normality supports the application of parametric tests, including One-way ANOVA, to examine group differences (Tabachnick & Fidell, 2019; Pallant, 2020).

IV.   Results And Findings

Innovative Pedagogic Practices Awareness Scale

Findings Based on Independent Variable – Age

To examine differences in teachers' awareness of innovative pedagogical practices, findings were presented both in tables and graphs, enabling clear visual and numerical comparisons of mean scores across age groups (Miles, Huberman, & Saldaña, 2019). This approach highlights trends and variations while providing a structured basis for hypothesis testing.

Addressing Objective 1—comparing awareness levels across age groups—the following null hypothesis was formulated: *There is no significant difference in the mean awareness scores of primary school teachers across different age groups.*

A One-way ANOVA was employed to test this hypothesis, as it is appropriate for comparing means across more than two independent groups (Pallant, 2020; Field, 2018). Statistical analysis was conducted using MS Excel, with results presented in the below Tables. This method allowed the study to rigorously assess whether age significantly influences teachers' awareness of innovative pedagogical practices.

Table 4.1: Descriptive Statistics

Awareness of Innovative Pedagogic Practices						
Age	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
<25 years	1	111	-	-	111	111
26-35 years	14	120.786	13.862	3.705	102	149
36-45 years	32	124.625	14.657	2.590	78	150
>46 years	14	123.571	11.553	3.087	106	142
Total	61	123.27	13.656	1.748	78	150

Figure 4.1: Graphical Representation
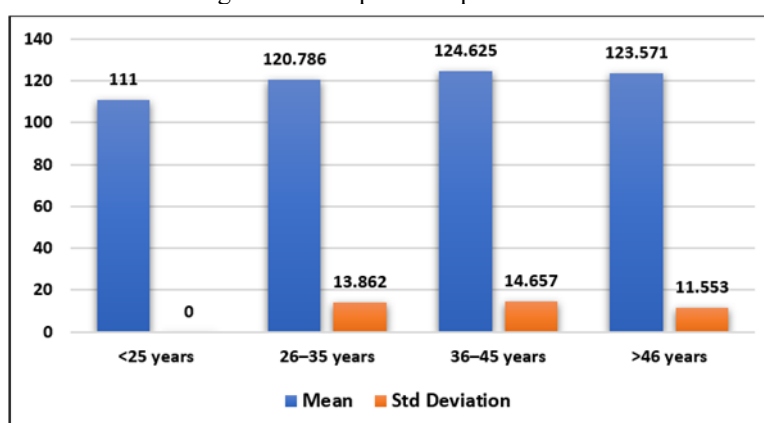
Table 4.2: Summary

Summary				
Age Groups	Count	Sum	Average	Variance
<25 years	1	111	111	-
26-35 years	14	1691	120.7857	192.1813
36-45 years	32	3988	124.625	214.8226
>46 years	14	1730	123.5714	133.4945
Total	61			

Table 4.3: One-way ANOVA table for Age

Source of Variation	SS	df	MS	F	p-value	F crit
Between Groups	296.9766	3	98.992	0.517	0.671	2.766
Within Groups	10893.29	57	191.110			
Total	11190.26	60				

The descriptive statistics indicate an overall mean awareness score of 123.27 (SD = 13.65) across age groups. The 36–45 years group had the highest mean (124.63, SD = 14.66), followed by >46 years (123.57, SD = 11.55), 26–35 years (120.79, SD = 13.86), and <25 years (111; based on a single respondent). The widest score spread was observed in the 36–45 years group (78–150).

One-way ANOVA results show F = 0.517, F-critical = 2.766, and p = 0.671, indicating no statistically significant differences in awareness across age groups. Thus, while mid- and older-aged teachers show slightly higher awareness descriptively, age does not significantly influence awareness of innovative pedagogic practices in this sample.

Findings Based on Independent Variable - Educational Qualification

Objective 2 aimed to examine the influence of educational qualification on primary school teachers' awareness of innovative pedagogic practices. The corresponding null hypothesis (H$_0$) stated that qualification levels do not significantly affect awareness.

To test this, a One-way ANOVA was applied, as it effectively compares means across three or more groups while controlling Type I error (Field, 2018; Pallant, 2020). Data analysis was conducted using MS Excel, and results are summarized in Tables 4.4–4.6, providing empirical evidence on whether qualification levels influence teachers' awareness.

Table 4.4: Descriptive Statistics

Awareness of Innovative Pedagogic Practices						
Educational Qualifications	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Bachelor of Education	30	123	13	2.4	102	150
Master of Education	5	117.2	22.88	10.23	78	134
Post-Graduation	6	119	7.925	3.235	114	135
Degree	4	113	5.7	2.9	106	120
Others	16	130	13	3.2	110	149
Total	61	123.27	13.656	1.748	78	150

Figure 4.2: Graphical Representation
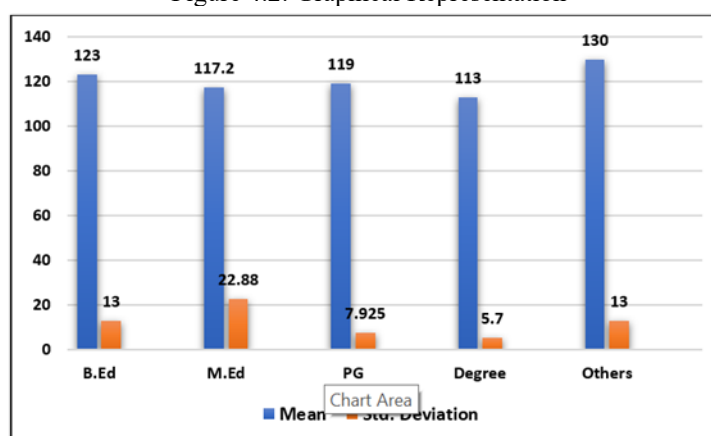
Table 4.5: Summary

Summary				
Groups	Count	Sum	Average	Variance
Bachelor of Education	30	3689	122.9667	166.9989
Master of Education	5	586	117.2	523.7
Post-Graduation	6	714	119	62.8
Degree	4	452	113	32.66667
Others	16	2079	129.9375	160.7292
Total	61			

Table 4.6: One-way ANOVA table of Educational Qualification

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1429.558	4	357.3895	2.050448	0.099661	2.536579
Within Groups	9760.704	56	174.2983			
Total	11190.26	60				

Descriptive statistics showed an overall mean awareness score of 123.27 (SD = 13.65) across educational qualifications. The highest mean was observed in the "Others" category (M = 130), followed by B.Ed. teachers (M = 123), while Degree holders scored lowest (M = 113). M.Ed. teachers showed the greatest variability (SD = 22.88), and B.Ed. teachers had the widest score range (102–150).

One-way ANOVA results (F = 2.05, p = 0.099 > 0.05) indicated no statistically significant difference in awareness across qualification levels. Although some groups (B.Ed. and Others) showed relatively higher awareness, the effect of educational qualification on innovative pedagogy awareness was not significant in this sample (Pallant, 2020; Field, 2018).

Findings Based on Independent Variable – Types of School

The objective 3 aimed to compare primary school teachers' awareness of innovative pedagogical practices across government, private, and international schools.

Null Hypothesis H₀: There is no significant difference in awareness levels among teachers across the three school types.

A One-way ANOVA was conducted using Microsoft Excel to compare mean scores across the groups while controlling for Type I error (Field, 2018). This method aligns with prior research showing that school type and institutional culture can influence teachers' engagement with innovative practices (Tondeur et al., 2017; Hennessy et al., 2022).

Table 4.7: Descriptive Statistics

Awareness of Innovative Pedagogic Practices						
Type of Schools	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
International Schools	22	130	11.0927	2.365	112	150
Private Schools	24	123.708	15.627	3.189	78	147
Government Schools	15	112.733	1.240	1.240	102	120
Total	**61**	**123.27**	**13.656**	**1.748**	**78**	**150**

Figure 4.3: Graphical Representation
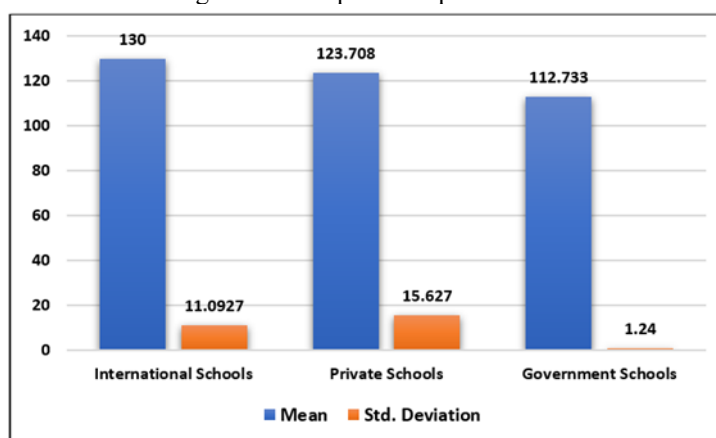
Table 4.8: Summary

Summary				
Groups	Count	Sum	Average	Variance
International Schools	22	2860	130	123.05
Private Schools	24	2969	123.71	244.22
Government Schools	15	1691	112.73	23.07

Table 4.9: One-way ANOVA table of Types of School

Source of Variation	SS	df	MS	F	p-value	F crit
Between Groups	2666.371	2	1333.185	9.071531	0.000373	3.155932
Within Groups	8523.892	58	146.9636			
Total	11190.26	60				

Descriptive statistics indicate variation in teachers' awareness of innovative pedagogical practices across school types. International school teachers reported the highest mean awareness (M = 130, SD = 11.09), followed by private schools (M = 123.71, SD = 15.63), while government school teachers had the lowest (M = 112.73, SD = 1.24). Overall, the sample mean was 123.27 (SD = 13.66).

The One-way ANOVA results confirmed these differences were statistically significant (F = 9.07, p < 0.001), indicating that school type significantly influences awareness. Teachers in international schools benefit from institutional support, training, and resources, whereas government school teachers face systemic constraints (Tondeur et al., 2017; Kozma, 2010; Hennessy et al., 2022).

Innovative Pedagogic Practices Adoption Scale
Findings Based on Independent Variable – Educational Qualification
The fourth objective was to examine whether primary teachers' educational qualification levels influence their adoption of innovative pedagogical practices. The null hypothesis (H₀) stated that qualification levels do not significantly affect adoption. A one-way ANOVA was conducted using MS Excel, and the results are presented in Tables 4.10–4.12.

Table 4.10: Descriptive Statistics

Adoption of Innovative Pedagogic Practices						
Educational Qualifications	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Bachelor of Education	30	237.933	29.597	5.403	179	288
Master of Education	5	209.6	36.841	16.476	172	264
Post-Graduation	6	243.167	23.318	9.519	220	288
Degree	4	237.5	18.556	9.278	216	253
Others	16	246.313	30.918	7.729	175	287
Total	61	238.29	30.06	3.84	172	288

Figure 4.4: Graphical Representation
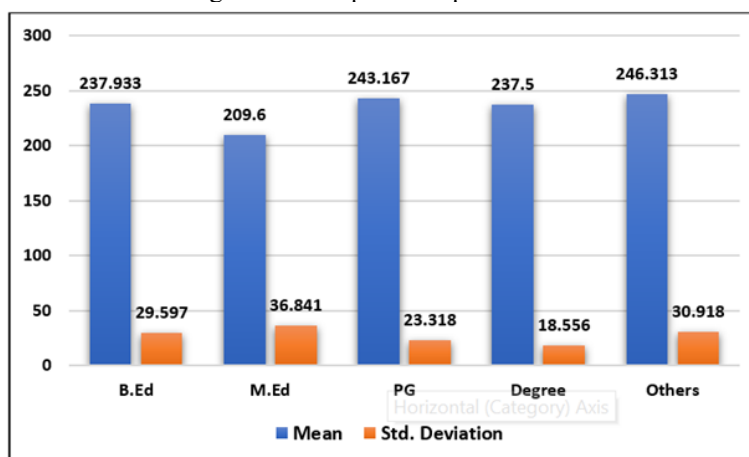
Table 4.11: Summary

Summary				
Groups	**Count**	**Sum**	**Average**	**Variance**
Bachelor of Education	30	7138	237.9333	875.9954
Master of Education	5	1048	209.6	1357.3
Post-Graduation	6	1459	243.1667	543.7667
Degree	4	950	237.5	344.3333
Others	16	3941	246.3125	955.9625

Table 4.12: One-way ANOVA table of Educational Qualification

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5294.351	4	1323.588	1.515011	0.210241	2.536579
Within Groups	48924.34	56	873.6489			
Total	**54218.69**	**60**				

Descriptive statistics (Table 4.7) showed some variation in adoption scores across qualification levels, with the "Others" group recording the highest mean (M = 246.31) and M.Ed. holders the lowest (M = 209.60). However, the one-way ANOVA (Tables 4.11 & 4.12) yielded F = 1.515, p = 0.210 (p > 0.05), indicating that these differences were not statistically significant. Thus, the null hypothesis could not be rejected, confirming that educational qualification levels do not significantly influence the adoption of innovative pedagogical practices among primary school teachers.

Findings Based on Independent Variable – Types of School
The fifth objective was to compare the adoption of innovative pedagogical practices among primary teachers in government, private, and international schools. The null hypothesis (H_0) stated that no significant differences exist across school types. A one-way ANOVA was conducted using MS Excel (Tables 4.11–4.12).

Prior studies suggest that adoption is shaped by institutional context, resource availability, and organizational culture. International schools often encourage experimentation due to curriculum flexibility and better resources (Paniagua & Istance, 2018), while government schools face structural barriers that restrict adoption (Srivastava, 2019). Private schools generally occupy a middle ground, adopting innovations selectively in response to market and stakeholder pressures (Sharma & Sriprakash, 2021). As Fullan (2007) reminds, meaningful educational change ultimately depends on teachers' beliefs and practices.

Table 4.13: Descriptive Statistics

Adoption of Innovative Pedagogic Practices						
Type of Schools	**N**	**Mean**	**Std. Deviation**	**Std. Error**	**Minimum**	**Maximum**
International Schools	22	247.23	27.75	6.20	184	288
Private Schools	24	233.80	35.99	7.19	172	287
Government Schools	15	232.851	18.28	4.88	194	253
Total	**61**	**238.29**	**30.06**	**3.84**	**172**	**288**

Figure 4.5: Graphical Representation
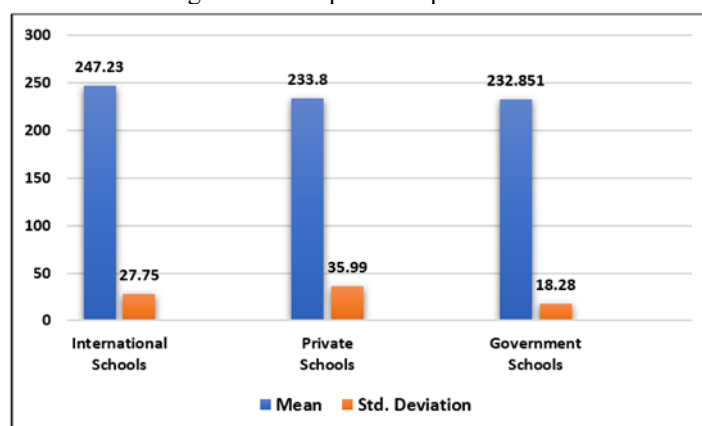
Table 4.14: Summary

Summary				
Groups	**Count**	**Sum**	**Average**	**Variance**
International Schools	22	5219	248.5238095	769.9619048
Private Schools	24	5599	233.2916667	1345.519928
Government Schools	15	3718	232.375	300.9166667
Total	61			

Table 4.15: One-way ANOVA for Types of school

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3358.742096	2	1679.371	1.915	0.156	3.155
Within Groups	50859.94643	58	876.8956			
Total	**54218.68852**	**60**				

The one-way ANOVA (Table 4.15) revealed no significant differences in adoption of innovative pedagogical practices among teachers in government, private, and international schools (F = 1.915, p > 0.05). This indicates that school type did not significantly influence adoption, and the null hypothesis could not be rejected.

These findings suggest that adoption levels are relatively consistent across institutional contexts, with teacher-level factors such as commitment, adaptability, and openness to innovation playing a more decisive role than school type (Admiraal et al., 2017; Fullan, 2007).

Factors Influencing the Adoption of Innovative Pedagogical Practices
Qualitative Data Analysis

Thematic analysis of interviews and observations revealed five major factors influencing adoption of innovative pedagogical practices: institutional support, professional competence, motivation and attitudes, resource availability, and community/parental expectations (Braun & Clarke, 2019; Creswell & Creswell, 2018).

Institutional support emerged as crucial—schools offering training, peer-learning, and leadership encouragement fostered higher adoption, while lack of support constrained innovation (Fullan, 2016). Teachers' professional competence and confidence also mattered; those skilled in technology or creative strategies integrated innovation more easily, whereas others reverted to traditional methods (Harris & Hofer, 2011). Motivation shaped adoption too—intrinsically motivated teachers embraced experimentation, while those seeing innovation as burdensome resisted change (Deci & Ryan, 2017).

Resource availability strongly influenced practice: well-equipped classrooms enabled innovation, while limited infrastructure restricted it (Ertmer & Ottenbreit-Leftwich, 2010). Finally, community and parental

expectations shaped pedagogy—schools valuing creativity encouraged innovation, while exam-driven contexts reinforced conventional teaching (Leithwood et al., 2010).

Overall, adoption of innovative practices was found to be multidimensional, shaped not only by teacher willingness but also by institutional, infrastructural, and socio-cultural contexts (Ary et al., 2018; Patton, 2015).

Challenges faced by Primary Teachers in Implementing Innovative Pedagogical Practices
Qualitative Data Analysis

Qualitative data from semi-structured interviews and classroom observations were analyzed using thematic analysis to identify challenges in implementing innovative pedagogical practices (Braun & Clarke, 2019; Creswell & Creswell, 2018). Seven key themes emerged: time constraints, inadequate training, limited infrastructure, classroom management challenges, resistance to change, parental expectations, and emotional/workload stress. These themes revealed both systemic and context-specific barriers that affect teachers' ability to sustain innovative methods (Patton, 2015).

The findings complement the quantitative results by showing that awareness of innovative practices does not guarantee classroom application, as adoption is constrained by structural, professional, and socio-cultural factors (Ary et al., 2018; Fullan, 2016). For instance, curriculum pressures and testing demands limited experimentation (Harris & Hofer, 2011), professional development often lacked practical relevance (Ertmer & Ottenbreit-Leftwich, 2010), and inadequate resources further restricted implementation (Leithwood et al., 2010). Teachers also cited difficulties in managing large classes (Deci & Ryan, 2017), reluctance to depart from traditional practices (Fullan, 2016), and parental focus on academic scores (Leithwood et al., 2010). Additional planning demands without workload adjustments contributed to fatigue (Ary et al., 2018).

In sum, while teachers recognize the value of innovative pedagogies, their adoption is hindered by systemic pressures, resource gaps, and socio-cultural expectations. Addressing these requires sustained professional development, adequate infrastructure, supportive policies, and greater community awareness.

V. Discussion

The present study revealed a gap between primary school teachers' awareness and adoption of innovative pedagogical practices, indicating that knowledge alone does not ensure implementation.

Awareness of Innovative Practices:

Teachers demonstrated satisfactory awareness of student-centered, technology-integrated, and experiential pedagogies, with a mean score of 123.28 (SD = 13.66, range = 78–150). The distribution was approximately normal (skewness = –0.320, kurtosis = 0.539), showing most teachers were conceptually familiar with contemporary strategies, including activity-based and collaborative methods (Creswell & Creswell, 2018; Ary et al., 2018).

Adoption of Innovative Practices:

Despite high awareness, adoption was moderate (M = 238.30, SD = 30.06, range = 172–288; skewness = –0.386, kurtosis = –0.283), reflecting partial or inconsistent implementation, with many still relying on conventional, exam-oriented methods (Fullan, 2016; Ertmer & Ottenbreit-Leftwich, 2010).

Impact of Demographics:

Age, gender, and educational qualifications did not significantly influence awareness or adoption. Slightly higher adoption among teachers with interdisciplinary or higher qualifications was not statistically significant, suggesting institutional and systemic factors outweigh individual characteristics in shaping classroom practices (Field, 2018; Pallant, 2020).

Institutional and Contextual Factors:

Adoption varied by school type. Government school teachers showed moderate awareness but lower adoption due to limited infrastructure and rigid curricula. Private school teachers adopted innovative methods more, aided by ICT access and professional development. International school teachers recorded the highest adoption, supported by flexible curricula and leadership (Leithwood et al., 2010; Ertmer & Ottenbreit-Leftwich, 2010).

Interpretation:

The findings highlight that awareness alone does not ensure adoption. Institutional support, access to resources, and ongoing professional development are critical enablers of innovative pedagogy, suggesting that interventions should focus on systemic support rather than solely teacher characteristics (Fullan, 2016; Braun & Clarke, 2019).

VI. Conclusions

The study found that primary school teachers in the Medchal–Malkajgiri district exhibited satisfactory awareness of innovative pedagogical practices (M = 123.28, SD = 13.66, range = 78–150), with most scores within one standard deviation of the mean, indicating familiarity with student-centered, technology-integrated, and experiential strategies (Creswell & Creswell, 2018; Ary et al., 2018).

However, adoption of these practices was moderate (M = 238.30, SD = 30.06, range = 172–288), showing partial and inconsistent classroom implementation. The awareness–adoption gap was primarily influenced by systemic constraints, such as limited instructional time, rigid curricula, and insufficient resources (Fullan, 2016; Ertmer & Ottenbreit-Leftwich, 2010).

Demographic factors—age, qualifications, type of schools—did not significantly affect awareness or adoption. Slightly higher adoption among teachers with interdisciplinary or higher qualifications was not statistically significant, highlighting the predominance of institutional factors, including professional development, infrastructure, and leadership support, in shaping pedagogical practices (Leithwood et al., 2010; Braun & Clarke, 2019).

In conclusion, while teachers are conceptually aware of modern strategies, actual classroom adoption is constrained by contextual and institutional factors, emphasizing the need for targeted interventions to bridge the gap between knowledge and practice.

VII. Educational Implications Of The Study

The study highlights several key implications for teachers, schools, and policymakers:

Teacher Training: Despite moderate adoption (M = 238.30), teachers need ongoing professional development focusing on practical strategies for activity-based, ICT-integrated, and experiential teaching, beyond theoretical knowledge (Ertmer & Ottenbreit-Leftwich, 2010; Darling-Hammond et al., 2017).

Curriculum Reform: Rigid, content-heavy curricula hinder innovation. Flexible, project- and inquiry-based designs can facilitate student-centered pedagogies (Fullan, 2016; Zhao, 2018).

School Support: Institutional backing is crucial. Investment in ICT infrastructure, activity spaces, and administrative encouragement can motivate adoption of non-traditional strategies, especially in government schools (Leithwood et al., 2010; Harris & Jones, 2017).

Policy Directions: Policymakers should link innovation to teacher appraisal, school evaluation, and professional advancement to institutionalize sustainable change (OECD, 2019; Hattie, 2015).

Student-Centered Learning: Consistent implementation of innovative practices enhances engagement, creativity, collaboration, and critical thinking, supporting 21st-century competencies (Bransford et al., 2000; Darling-Hammond et al., 2017).

VIII. Suggestions

Recommendations
For Teachers:

Engage in continuous professional learning and participate in professional learning communities to share best practices and innovative strategies. Integrate educational technology tools, including interactive whiteboards, online platforms, and digital simulations, to enhance engagement and support student-centered learning (Darling-Hammond et al., 2017; Hattie, 2015; Ertmer & Ottenbreit-Leftwich, 2010; Koehler & Mishra, 2009).

For Schools and Parents:

Schools should provide regular workshops, refresher courses, and hands-on training, alongside adequate ICT infrastructure and digital resources, to support adoption of innovative pedagogy (Fullan, 2016; Leithwood et al., 2010). Parents can encourage creative classroom activities and support teachers' innovative approaches, fostering a holistic learning environment (OECD, 2019).

For Future Research:

Replicate studies in other regions for comparative analyses, conduct longitudinal studies to track adoption over time, and examine student outcomes in relation to innovative practices. Qualitative methods such as observations, case studies, and interviews can explore systemic and contextual barriers to implementation (Creswell & Creswell, 2018; Ary et al., 2018; Bransford et al., 2000; Braun & Clarke, 2019).

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