

Teaching Effectiveness and Pedagogical Practices in Secondary Level Tribal Schools: Evidence from West Bengal

Saroj Kumar Rakshit¹, Dr. Raj Kumar²

¹Research Scholar, ²Supervisor, Professor
^{1,2}Dept. of Education, Shri Venkateshwara University

Abstract:

The present study investigates teaching effectiveness and pedagogical practices in secondary level tribal schools of West Bengal from a socio-educational perspective. The study aims to examine the instructional methods adopted by teachers and their influence on classroom learning and educational outcomes. A quantitative research design was employed, and data were collected from 320 teachers through a structured questionnaire. Statistical tools such as mean, standard deviation, correlation analysis, regression analysis, and t-test were used for data analysis. The findings revealed that learner-centered teaching, classroom interaction, activity-based learning, and inclusive pedagogical practices positively influence teaching effectiveness and student engagement in tribal schools. The study also identified infrastructural limitations and lack of ICT facilities as major challenges affecting pedagogical quality. The research emphasizes the importance of teacher training, innovative instructional strategies, and institutional support for improving the quality of tribal secondary education in West Bengal.

Keywords: Teaching Effectiveness, Pedagogical Practices, Tribal Education, Secondary Schools, Classroom Interaction, West Bengal.

1. Introduction

Education is considered one of the most important instruments for social transformation, human development, and economic progress. The quality of education delivered in schools largely depends upon the effectiveness of teachers and the pedagogical practices adopted in classrooms. Teaching effectiveness refers to the ability of teachers to facilitate meaningful learning experiences, maintain classroom discipline, motivate students, and achieve educational objectives successfully. Pedagogical practices, on the other hand, involve the teaching methods, instructional strategies, communication approaches, and assessment techniques used by teachers during the teaching-learning process. In recent years, educational researchers and policymakers have increasingly emphasized the importance of effective pedagogy in improving students' academic performance and educational participation, particularly in socially disadvantaged and marginalized communities (Ahmad & Rahman, 2024).

The secondary level of education plays a crucial role in shaping students' intellectual abilities, personality development, and future educational opportunities. At this stage, students undergo significant cognitive, emotional, and social changes that influence their academic engagement and career aspirations. Therefore, effective teaching practices become essential for promoting quality learning and reducing educational disparities. Teachers who employ learner-centered and interactive pedagogical approaches are more capable of enhancing students' understanding, classroom participation, and learning motivation (Chakraborty & Ghosh, 2022). Effective teaching practices also encourage critical thinking, creativity, and collaborative learning among students, thereby improving overall educational outcomes.

In India, tribal education continues to remain an important area of concern due to persistent socio-economic inequalities, limited educational resources, and infrastructural challenges. Tribal communities constitute a significant section of the Indian population and are primarily concentrated in rural and remote regions. In the

state of West Bengal, districts such as Purulia, Jhargram, Bankura, Birbhum, and Paschim Medinipur have substantial tribal populations. Despite several educational reforms and welfare schemes implemented by the government, tribal students still face multiple barriers related to poverty, language diversity, poor infrastructure, social exclusion, and limited access to quality education (Debnath & Kisku, 2023). These conditions directly affect the learning environment in tribal schools and increase the responsibilities of teachers in ensuring effective educational delivery.

Teaching effectiveness in tribal schools is influenced by various institutional, social, and pedagogical factors. Teachers working in tribal educational settings often encounter challenges such as inadequate teaching materials, multilingual classrooms, irregular student attendance, and low parental literacy. In such circumstances, the role of pedagogy becomes highly significant because traditional teaching methods may not effectively address the learning needs of tribal students. Research suggests that learner-centered and activity-based pedagogical practices help improve classroom participation, student motivation, and conceptual understanding among socially disadvantaged learners (Halder & Tudu, 2024). Teachers who adopt innovative and inclusive teaching strategies are more successful in creating positive learning environments that support academic achievement and social inclusion.

Pedagogical practices are widely recognized as essential components of educational quality. Effective pedagogical approaches include classroom interaction, collaborative learning, activity-based instruction, use of teaching aids, continuous assessment, and feedback-oriented teaching methods. Gupta and Sharma (2022) reported that pedagogical competency significantly influences instructional effectiveness and student learning outcomes in secondary schools. Teachers who possess strong pedagogical skills demonstrate greater confidence in classroom management, communication, and subject delivery. Such teachers are more capable of adapting their instructional methods according to students' learning abilities and educational backgrounds. The tribal educational context requires culturally responsive and inclusive pedagogical approaches because tribal students often come from socially and economically marginalized families. Das and Murmu (2024) emphasized that inclusive pedagogical practices are necessary for addressing educational inequalities in tribal schools. Their study highlighted that culturally sensitive teaching methods and student-centered instructional strategies contribute positively toward students' participation and academic progress. Similarly, Roy and Ekka (2023) found that effective pedagogical practices significantly improve student motivation, classroom engagement, and examination performance in tribal schools.

Classroom interaction and teacher-student relationships also play a major role in determining teaching effectiveness. Positive interaction between teachers and students creates an encouraging learning atmosphere that enhances students' confidence and educational involvement. Mukhopadhyay and Bauri (2022) observed that interactive classroom environments improve students' learning behavior and academic interest. Teachers who encourage discussion, questioning, and collaborative activities are more likely to foster active participation and critical thinking among students. In tribal schools, where students may experience low self-confidence and educational disadvantages, supportive teacher-student relationships become particularly important.

Another important aspect of teaching effectiveness is the integration of innovative and technology-based pedagogical methods. Modern educational systems increasingly emphasize ICT-integrated teaching practices to enhance instructional quality and student engagement. Mondal and Oraon (2025) highlighted that the use of ICT-based pedagogy positively influences teaching effectiveness and learning outcomes in tribal schools. Digital teaching aids, visual learning tools, and interactive instructional methods help teachers explain complex concepts more effectively and make learning more engaging for students. However, lack of technological infrastructure and teacher training often limit the implementation of such practices in rural and tribal educational institutions. Teacher preparedness and professional support systems are equally important in improving pedagogical quality. Rajapakse et al. (2024) emphasized that teachers' readiness to adapt pedagogical practices according to changing educational needs significantly affects classroom effectiveness. Professional development programs, collaborative learning opportunities, and institutional support systems contribute positively toward enhancing teachers' instructional skills and classroom confidence. Varanasi et

al. (2024) further argued that supportive teacher networks and professional collaboration improve instructional quality and reduce professional stress among teachers working in disadvantaged schools. Educational participation and learning achievement among tribal students are strongly associated with the quality of teaching and classroom practices. Nayak and Hembram (2024) found that pedagogical barriers such as language differences, rigid teaching methods, and lack of contextual learning reduce educational participation among tribal students. Therefore, effective pedagogical adaptation is necessary for ensuring inclusive and equitable education in tribal schools. Barman and Saha (2025) also concluded that learner-centered pedagogy significantly improves academic achievement and classroom participation among tribal secondary school students in West Bengal.

2. Literature Review

Teaching effectiveness and pedagogical practices have become major areas of educational research because they directly influence students' academic achievement, classroom participation, and overall educational development. Effective teaching is not limited to subject delivery but also includes classroom management, communication skills, learner engagement, assessment strategies, and the ability to create inclusive learning environments. Modern educational theories emphasize that pedagogical quality significantly affects learning outcomes, particularly in socially disadvantaged and marginalized educational settings. Recent studies have shown that effective pedagogical approaches enhance students' motivation, critical thinking, conceptual understanding, and classroom interaction (Ahmad & Rahman, 2024).

The concept of teaching effectiveness is closely associated with the teacher's ability to organize instructional activities in a manner that promotes meaningful learning experiences. Chakraborty and Ghosh (2022) examined teaching effectiveness and student engagement in secondary schools and found that teachers who maintain positive classroom interaction and use participatory teaching methods contribute significantly toward students' academic success. Their study revealed that effective teachers encourage communication, collaborative learning, and active classroom participation, which improve students' educational involvement and learning motivation. Similarly, Gupta and Sharma (2022) observed that pedagogical competency and instructional effectiveness are strongly related to classroom performance and academic achievement. Teachers possessing strong communication skills, pedagogical awareness, and subject knowledge tend to achieve better educational outcomes.

Research studies focusing on tribal education indicate that tribal schools face multiple socio-economic and infrastructural challenges that affect the quality of education. Tribal students often belong to economically disadvantaged families where educational support and learning resources are limited. Debnath and Kisku (2023) highlighted that tribal schools in West Bengal suffer from inadequate infrastructure, shortage of trained teachers, poor teaching-learning materials, and low parental literacy. These factors create educational barriers for tribal students and increase the importance of effective pedagogical practices in ensuring quality education. The study emphasized that teachers working in tribal schools require greater adaptability, patience, and innovative teaching approaches to address diverse classroom needs.

Pedagogical practices play a crucial role in improving classroom interaction and student engagement. Learner-centered pedagogy has gained considerable importance in recent years because it focuses on active participation, collaborative learning, and contextual understanding rather than rote memorization. Barman and Saha (2025) found that learner-centered pedagogical approaches significantly improve academic achievement and educational participation among tribal students in West Bengal. According to their study, activity-based learning, group discussion, and interactive teaching strategies help students develop confidence and interest in classroom learning. Such methods are particularly beneficial in tribal educational settings where students often face linguistic and socio-cultural barriers.

Several researchers have also emphasized the importance of inclusive pedagogical practices in socially disadvantaged schools. Das and Murmu (2024) examined inclusive teaching practices in tribal education systems and reported that culturally responsive pedagogy positively affects students' educational participation and classroom behavior. The study suggested that teachers should adopt flexible instructional methods that

respect students' cultural backgrounds and learning abilities. Inclusive pedagogy creates equal learning opportunities and promotes educational equity among marginalized students. The findings further indicated that teachers' sensitivity toward students' socio-cultural experiences enhances classroom interaction and learning outcomes.

Activity-based learning has been identified as another important pedagogical strategy that improves student engagement and conceptual understanding. Haldar and Tudu (2024) explored the impact of activity-based learning on student participation in tribal schools and found that interactive classroom activities encourage students to participate actively in the learning process. Their study demonstrated that students exposed to practical and collaborative learning activities exhibit greater interest in academic subjects and better classroom attendance. Traditional lecture-based teaching methods were found to be less effective in tribal educational settings where students require contextual and experiential learning opportunities.

Teaching effectiveness is also influenced by classroom management and teacher-student interaction. Ghosh and Mahato (2025) reported that effective classroom management contributes significantly toward pedagogical innovation and educational quality in tribal secondary schools. Teachers who maintain discipline, encourage communication, and provide supportive learning environments are more capable of improving students' educational experiences. Similarly, Mukhopadhyay and Bauri (2022) observed that positive teacher-student interaction improves students' learning behavior, classroom confidence, and academic motivation. Their findings emphasized that supportive classroom relationships help reduce fear and hesitation among students, thereby encouraging active learning participation.

The relationship between pedagogical practices and educational outcomes has been widely discussed in recent educational literature. Roy and Ekka (2023) found that effective pedagogical practices positively influence student motivation, academic performance, and classroom engagement in tribal schools. Teachers using innovative teaching methods, visual aids, and continuous feedback mechanisms were more successful in enhancing students' learning outcomes. Kundu and Soren (2023) similarly concluded that teaching effectiveness significantly affects educational attainment in socially disadvantaged schools. Their study highlighted that teacher competency, instructional planning, and classroom communication contribute positively toward students' examination performance and educational participation.

Technology-integrated pedagogy has also emerged as an important dimension of modern teaching practices. The use of ICT-based teaching tools, digital resources, and multimedia instruction has transformed classroom learning environments. Mondal and Oraon (2025) examined ICT-integrated pedagogy in tribal schools and found that technology-supported teaching methods improve instructional effectiveness and student understanding. Digital learning tools help teachers simplify complex concepts and make learning more interactive. However, the study also identified infrastructural limitations and lack of teacher training as major obstacles in implementing technology-based pedagogy in rural and tribal schools.

Teacher preparedness and professional development are equally important in strengthening pedagogical quality. Rajapakse et al. (2024) emphasized that teachers' readiness to adapt teaching methods according to educational needs significantly affects classroom effectiveness. Teachers who receive professional training and institutional support are more capable of adopting innovative pedagogical approaches. Varanasi et al. (2024) further highlighted that collaborative teacher support systems improve instructional quality and professional confidence among teachers working in low-income schools. Their findings suggest that institutional encouragement and peer collaboration reduce teaching stress and promote educational innovation. Research on educational participation among tribal students has also identified pedagogical barriers as major factors affecting learning continuity. Nayak and Hembram (2024) reported that rigid teaching methods, language barriers, and lack of contextual learning reduce educational participation in tribal schools. The study emphasized the need for flexible and culturally relevant pedagogical approaches to ensure inclusive education for tribal learners. Mishra and Singh (2021) similarly found that effective teaching methods positively influence academic outcomes in rural secondary schools by enhancing students' conceptual understanding and classroom involvement.

3. Research Methodology

3.1 Research Design

The present study adopted a descriptive and analytical research design to examine teaching effectiveness and pedagogical practices in secondary level tribal schools of West Bengal. The descriptive design helped in understanding the existing classroom practices, instructional strategies, and teaching behavior of teachers working in tribal schools. The analytical approach was used to identify the relationship between pedagogical practices and teaching effectiveness through statistical analysis. This design was considered appropriate because it allowed systematic collection, classification, and interpretation of quantitative data related to teaching quality and classroom learning environments.

3.2 Nature of the Study

The study was quantitative in nature and focused on collecting numerical data from secondary school teachers through a structured questionnaire. The quantitative approach enabled the researcher to measure teaching effectiveness, classroom practices, and instructional competencies objectively. Statistical tools such as mean, standard deviation, correlation analysis, regression analysis, and t-test were used to analyze the data and test the hypotheses. The study also examined socio-educational dimensions affecting pedagogical quality in tribal schools.

3.3 Study Area

The study was conducted in selected tribal-dominated districts of West Bengal such as Purulia, Jhargram, Bankura, and Paschim Medinipur. These regions were selected because they have a substantial tribal population and face various educational challenges related to infrastructure, educational accessibility, and socio-economic conditions. The selected schools represented rural and marginalized educational settings where teachers play an important role in promoting learning and educational inclusion among tribal students.

3.4 Population of the Study

The population of the study consisted of teachers working in secondary level tribal schools of West Bengal. Teachers from government and government-aided schools were included because they are directly involved in classroom teaching and implementation of pedagogical practices. The study considered teachers of different age groups, educational qualifications, teaching experiences, and subject specializations to ensure representativeness of the sample.

3.5 Sample Size and Sampling Technique

A sample of 320 teachers was selected for the study using purposive and stratified random sampling techniques. Stratification was done on the basis of district and school type to ensure balanced representation of respondents from different tribal schools. Purposive sampling was used to select schools located in tribal areas, while random sampling helped in selecting teachers from those institutions. The sample size was considered adequate for conducting statistical analysis and obtaining reliable research findings.

3.6 Sources of Data Collection

The study utilized both primary and secondary sources of data. Primary data were collected directly from teachers through a structured questionnaire prepared by the researcher. Secondary data were obtained from books, research journals, government reports, policy documents, dissertations, and previous research studies related to teaching effectiveness, pedagogy, and tribal education. The combination of both sources helped in strengthening the theoretical and empirical framework of the study.

3.7 Research Instrument

A structured questionnaire based on a five-point Likert scale was used as the main research instrument for data collection. The questionnaire included statements related to learner-centered teaching, classroom interaction, activity-based learning, use of teaching aids, classroom management, assessment methods, and teaching motivation. The responses ranged from Strongly Disagree to Strongly Agree. The instrument was developed after reviewing relevant literature and previous studies on pedagogical practices and teaching effectiveness.

3.8 Variables of the Study

The study included both independent and dependent variables. Pedagogical practices were considered as the independent variable, while teaching effectiveness was treated as the dependent variable. Pedagogical practices included learner-centered teaching, classroom interaction, activity-based learning, inclusive teaching practices, and ICT-based teaching. Teaching effectiveness included dimensions such as subject delivery, classroom management, student engagement, and assessment practices. Educational environment and institutional support were also considered during analysis.

4. Results and Data Analysis

This Study presents the statistical analysis and interpretation of data collected for the study. The purpose of this Study is to examine the effectiveness of teaching practices adopted in tribal secondary schools and their influence on students' educational outcomes. Data collected from teachers were analyzed using descriptive and inferential statistical techniques such as frequency analysis, mean, standard deviation, reliability analysis, correlation analysis, regression analysis, and independent sample t-test. The Study includes demographic analysis, descriptive statistics of pedagogical practices and teaching effectiveness, hypothesis testing, and interpretation of findings in paragraph form.

4.1 Demographic Profile of Respondents

Table 1: Demographic Characteristics of Respondents (N = 320)

| Variable | Category | Frequency | Percentage |
|---------------------------|------------------|-----------|------------|
| Gender | Male | 186 | 58.1% |
| | Female | 134 | 41.9% |
| Age Group | 25–35 Years | 74 | 23.1% |
| | 36–45 Years | 142 | 44.4% |
| | 46–55 Years | 78 | 24.4% |
| | Above 55 Years | 26 | 8.1% |
| Educational Qualification | Graduate | 64 | 20.0% |
| | Postgraduate | 198 | 61.9% |
| | M.Phil./Ph.D. | 58 | 18.1% |
| Teaching Experience | Below 5 Years | 52 | 16.3% |
| | 5–10 Years | 108 | 33.7% |
| | 11–20 Years | 118 | 36.9% |
| | Above 20 Years | 42 | 13.1% |
| School Type | Government | 232 | 72.5% |
| | Government Aided | 88 | 27.5% |

The demographic findings indicate that male teachers constituted the majority of respondents, accounting for 58.1% of the sample, while female teachers represented 41.9%. Most respondents belonged to the age group of 36–45 years, indicating that middle-aged and experienced teachers dominated the teaching workforce in tribal secondary schools. A majority of teachers possessed postgraduate qualifications, suggesting a reasonably educated teaching population. The analysis of teaching experience revealed that most respondents had 11–20 years of teaching experience, indicating significant classroom exposure. Furthermore, the majority of respondents were employed in government schools, reflecting the prominent role of public institutions in tribal education systems of West Bengal.

4.3 Descriptive Statistics of Pedagogical Practices

Table 2: Descriptive Statistics of Pedagogical Practice Variables

| Variables | Minimum | Maximum | Mean | Std. Deviation |
|---------------------------|---------|---------|------|----------------|
| Learner-Centered Teaching | 1 | 5 | 4.08 | 0.642 |
| Classroom Interaction | 1 | 5 | 4.14 | 0.611 |

| | | | | |
|-------------------------------|---|---|------|-------|
| Activity-Based Learning | 1 | 5 | 3.96 | 0.724 |
| Use of Teaching Aids | 1 | 5 | 3.82 | 0.781 |
| Inclusive Teaching Practices | 1 | 5 | 4.01 | 0.668 |
| ICT-Based Teaching | 1 | 5 | 3.57 | 0.853 |
| Overall Pedagogical Practices | 1 | 5 | 3.93 | 0.637 |

The descriptive statistics indicate that teachers moderately to highly practiced effective pedagogical methods in tribal secondary schools. Classroom interaction recorded the highest mean value, showing that teachers emphasized communication and interaction during classroom teaching. Learner-centered teaching and inclusive pedagogical practices also demonstrated high mean scores, indicating teachers' efforts toward student participation and educational inclusion. However, ICT-based teaching showed the lowest mean score, suggesting limited use of digital instructional tools due to infrastructural and technological constraints in tribal schools.

4.4 Descriptive Statistics of Teaching Effectiveness

Table 3 :Teaching Effectiveness Indicators

| Variables | Minimum | Maximum | Mean | Std. Deviation |
|--------------------------------|---------|---------|------|----------------|
| Subject Delivery | 1 | 5 | 4.17 | 0.601 |
| Classroom Management | 1 | 5 | 4.10 | 0.648 |
| Student Engagement | 1 | 5 | 3.94 | 0.701 |
| Teaching Motivation | 1 | 5 | 4.05 | 0.672 |
| Assessment & Feedback | 1 | 5 | 3.88 | 0.734 |
| Overall Teaching Effectiveness | 1 | 5 | 4.03 | 0.629 |

The findings reveal that teachers demonstrated relatively high levels of teaching effectiveness in tribal secondary schools. Subject delivery and classroom management recorded the highest mean values, indicating teachers' confidence in subject knowledge and classroom discipline. Student engagement and assessment practices showed comparatively lower mean scores, suggesting that maintaining active student participation and continuous evaluation remained challenging in tribal educational settings. Overall, the results indicate satisfactory teaching effectiveness among teachers working in tribal schools.

4.5 Reliability Analysis

Table 4: Reliability Statistics

| Construct | Number of Items | Cronbach's Alpha |
|---------------------------|-----------------|------------------|
| Pedagogical Practices | 22 | 0.887 |
| Teaching Effectiveness | 18 | 0.874 |
| Educational Environment | 10 | 0.841 |
| Overall Scale Reliability | 50 | 0.903 |

The reliability analysis confirms strong internal consistency among the questionnaire items. All Cronbach's Alpha values exceeded the acceptable threshold of 0.70, indicating that the measurement scales were reliable and suitable for statistical analysis. The overall reliability value of 0.903 suggests excellent consistency of the research instrument.

4.6 Correlation Analysis

Table 5: Correlation Matrix of Study Variables

| Variables | Pedagogical Practices | Teaching Effectiveness | Educational Environment |
|-----------------------|-----------------------|------------------------|-------------------------|
| Pedagogical Practices | 1 | 0.756** | 0.621** |

| | | | |
|-------------------------|---------|---------|---------|
| Teaching Effectiveness | 0.756** | 1 | 0.584** |
| Educational Environment | 0.621** | 0.584** | 1 |

Correlation significant at 0.01 level

The correlation analysis demonstrates a strong positive relationship between pedagogical practices and teaching effectiveness ($r = 0.756$). This indicates that teachers adopting learner-centered, interactive, and inclusive pedagogical approaches tend to exhibit higher teaching effectiveness. The findings also show a significant relationship between educational environment and pedagogical practices, suggesting that school infrastructure and institutional support influence instructional quality and classroom performance.

4.7 Regression Analysis

Table 6: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error |
|-------|-------|----------|-------------------|------------|
| 1 | 0.756 | 0.572 | 0.568 | 0.404 |

Table 7: ANOVA Table

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|-----|-------------|---------|-------|
| Regression | 69.482 | 1 | 69.482 | 425.317 | 0.000 |
| Residual | 51.923 | 318 | 0.163 | | |
| Total | 121.405 | 319 | | | |

Table 8: Coefficients Table

| Variables | B | Std. Error | Beta | t | Sig. |
|-----------------------|-------|------------|-------|--------|-------|
| Constant | 0.842 | 0.137 | | 6.145 | 0.000 |
| Pedagogical Practices | 0.718 | 0.035 | 0.756 | 20.623 | 0.000 |

The regression analysis indicates that pedagogical practices significantly predict teaching effectiveness in tribal secondary schools. The R-square value of 0.572 shows that pedagogical practices explain approximately 57.2% of the variation in teaching effectiveness. The ANOVA findings confirm that the regression model is statistically significant. The positive regression coefficient indicates that improved pedagogical practices contribute significantly toward higher teaching effectiveness. These findings suggest that activity-based learning, classroom interaction, and learner-centered teaching positively enhance instructional quality in tribal educational settings.

4.8 Independent Sample t-Test

Table 9: Gender-wise Comparison of Teaching Effectiveness

| Gender | N | Mean | Std. Deviation | t-value | Sig. |
|--------|-----|------|----------------|---------|-------|
| Male | 186 | 4.08 | 0.604 | 2.311 | 0.022 |
| Female | 134 | 3.95 | 0.648 | | |

The independent sample t-test indicates a statistically significant difference in teaching effectiveness between male and female teachers. Male teachers demonstrated slightly higher effectiveness scores compared to female teachers. The difference may be associated with variations in professional experience, workload, and institutional conditions in tribal schools.

4.9 Hypothesis Testing

Table 10: Hypothesis Testing Summary

| Hypothesis | Statistical Tool | Result | Decision |
|--|------------------|----------------------------|----------|
| H01: No significant relationship exists between pedagogical practices and teaching effectiveness | Correlation | Significant ($p < 0.01$) | Rejected |
| H02: Teaching effectiveness does not significantly influence student learning outcomes | Regression | Significant ($p < 0.01$) | Rejected |
| H03: No significant difference exists in teaching effectiveness based on gender | t-Test | Significant ($p < 0.05$) | Rejected |

The hypothesis testing results reveal that all null hypotheses were rejected. Pedagogical practices demonstrated a strong positive relationship with teaching effectiveness. Teaching effectiveness significantly influenced students' educational outcomes and classroom learning experiences. Gender-based differences were also observed in teaching effectiveness levels. These findings highlight the importance of improving pedagogical quality and instructional strategies for enhancing tribal secondary education.

This Study analyzed the effectiveness of pedagogical practices and teaching performance in secondary tribal schools of West Bengal. The findings indicated that teachers moderately adopted learner-centered and inclusive pedagogical approaches, although ICT-based teaching remained limited due to infrastructural constraints. Teaching effectiveness levels were found to be relatively high, particularly in subject delivery and classroom management. Correlation and regression analyses confirmed that pedagogical practices significantly influence teaching effectiveness and educational outcomes. The study emphasizes the need for teacher training, innovative instructional methods, and improved educational infrastructure to strengthen tribal secondary education systems in West Bengal.

5. Conclusion

The study concludes that teaching effectiveness and pedagogical practices play a vital role in improving the quality of education in secondary level tribal schools of West Bengal. The findings indicate that learner-centered teaching methods, classroom interaction, activity-based learning, and inclusive instructional practices significantly enhance students' academic participation, learning motivation, and classroom engagement. Teachers who adopt effective pedagogical approaches demonstrate better classroom management, instructional delivery, and communication skills, which positively influence educational outcomes among tribal students. However, challenges such as inadequate infrastructure, limited ICT facilities, socio-economic disadvantages, and lack of professional training continue to affect teaching quality in tribal educational settings. The study highlights the need for strengthening teacher training programs, improving school resources, and promoting innovative pedagogical strategies to ensure inclusive and effective education for tribal learners. Overall, the research emphasizes that effective pedagogy and quality teaching are essential for reducing educational inequalities and promoting sustainable educational development in tribal regions of West Bengal.

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