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About the Journal

The Journal of Educare (JoE) was launched in 2024 by the Department of Education, Aliah University, Park Circus Campus, 17 Gorachand Road, Kolkata-700014, West Bengal, India. This journal aims to disseminate information about theory, practice, and research in the field of education and its allied subjects. JoE is dedicated to advancing research and innovations in diverse fields within Educational Philosophy, Educational Psychology, Educational Sociology, Educational Technology, Inclusive Education, Open and Distance Learning, Value and Peace Education, Teacher Education, Women Education, Pedagogy of School Subjects, and Assessment and Evaluation, among others. JoE offers an online presence, enhancing accessibility for both readers and authors globally.

JoE is committed to embracing technological advancements, ensuring that the latest research is easily accessible online. This digital availability broadens the journal's reach, allowing it to engage with a global audience of scholars and researchers. JoE is a peer-reviewed, contributed, biannual journal. JoE will be published twice a year, from 2024 onwards, in January to June and July to December. The journal may be accessed at: https://educare.aliah.ac.in

The editorial board of JoE comprises experts from the diverse discipline of education who are eminent scholars from various prominent universities, ensuring that all submissions undergo thorough and rigorous peer review. The journal welcomes submissions from authors worldwide, providing a valuable platform for sharing research and fostering collaboration within the academic community.

Overall, the Journal of Educare (JoE) will play a crucial role in the dissemination of knowledge and research within the field of education and its allied subjects. Its dedication to high-quality research, a stringent peer-review process, and a strong online presence will make JoE an indispensable resource for researchers.

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This biannual publication is for all of us: researchers, students, teachers, teacher educators, administrators And policy makers. It seeks to provide a platform and build a network for our ideas and reflections. To enable this journal to reflect all ideas, we must contribute to it in as many ways as we can. We look forward to many contributing with different experiences, questions, suggestions, perspectives as well as critical comments on different aspects of education. The contributions could be in the form of research articles. We also seek comments and reflections on the current issue to improve publication and make it a participative endeavour. We must together make this journal truly reflective of our ideas. We look forward to receive your contributions for the forthcoming issue. We also look forward to your comments and suggestions. The contributions can be sent to the following:

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Editorial

Editorial

It gives us great pleasure to present this issue (January to June 2025) of our Journal of Educare (JoE), which brings together a rich collection of articles covering key areas in Indian education today. The papers featured in this edition reflect important themes such as metacognitive skills, student engagement, policy reforms, digital education, foundational learning, and the role of tradition and innovation in shaping the future of education.

A major highlight of this issue is the discussion on the National Education Policy (NEP) 2020. Two articles "Reimagining Higher Education for the 21st Century" and "NEP 2020 and the Future of Early Childhood Care and Education in India"—provide thoughtful analysis of the policy's vision and the opportunities and challenges in implementing it across levels of education. We also feature an article titled "Digital Initiatives in Higher Education in India," offering an overview of the digital transformation happening in universities and colleges across the country. These digital efforts are key to expanding access, improving quality, and preparing learners for a technology-driven world. In the area of school education, the article "Application of Maslow and Weiner's Attribution Theory in Primary Schools of West Bengal" gives us insight into how psychological theories can help understand student motivation. Similarly, the study on "Status of Foundational Literacy and Numeracy in Odisha" draws attention to the urgent need to strengthen basic skills in early grades. One of the most thought-provoking pieces in this issue is "Tagore's Gurukul vs ChatGPT", which compares Rabindranath Tagore's experiential learning model with modern AI tools. It raises an important question: Can traditional, value-based education adapt to the digital age? Other articles focus on important social and regional issues. "Parental Attitude towards Women's Education in South 24 Parganas" highlights the role of family support in promoting girls' education. "Academic Resilience of College Students in Kalimpong" explores how students overcome challenges and stay focused in their academic journey. Finally, the article "From Independence to Innovation" provides a historical overview of India's educational policies since 1947, helping us understand how far we have come and what lies ahead.

This issue offers a broad view of the Indian education system—its strengths, its challenges, and its future possibilities. We thank all the authors and reviewers for their valuable contributions. We hope this issue will be useful for educators, researchers, policymakers, and all those who care about the future of education in India. I thank, to all the dear editors, advisors, authors, reviewers and readers for their valuable contributions and time for quality improvement of Journal of Educare (JoE).

Editor-in-Chief
Journal of Educare (JoE)
24.6.25
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METACOGNITIVE SKILLS AND ACADEMIC ACHIEVEMENT OF HIGHER SECONDARY LEARNERS IN WEST BENGAL

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ABSTRACT

The present study seeks to investigate the 'relationship between metacognitive skills and academic achievement among higher secondary learners in West Bengal'. A sample of 638 Class XI students was selected using a 'simple random sampling technique'. The researchers employed 'a standardized Metacognitive Skills Scale,' developed and validated specifically for this study, to assess students' metacognitive competencies. Academic achievement was measured using official school performance records. The research also aimed to explore 'significant differences in metacognitive skills and academic achievement with respect to gender, locale (urban/rural), and academic stream (arts/science).' The study adopted a 'descriptive survey method,' and data were analysed using inferential statistical techniques including the 'independent samples t-test and Pearson's product-moment correlation.' The findings revealed statistically 'significant differences in both metacognitive skills and academic achievement across gender, locale, and academic stream.' Furthermore, 'a moderate and positive correlation' was found between 'metacognitive skills and academic achievement'. These results underscore the importance of integrating metacognitive strategy training into the school curriculum to enhance learners' academic performance and foster independent learning. The study contributes valuable insights for educators, curriculum developers, and policymakers aiming to improve higher secondary education outcomes through metacognitive skill development.

Keywords: Academic Achievement, Higher Secondary Learners, Metacognitive Skills, Self-regulated Learning, Student Learning Outcomes

INTRODUCTION

Our educational system seeks to instil in learners the fundamental knowledge, abilities, attitudes, and competences necessary for their personal growth and, in turn, the advancement and development of the country (UNESCO, 2015). Formal education, in particular, is a deliberate process designed to shape students into responsible citizens who can guide the nation toward progress (Dewey, 1938). This is the desired, more all-encompassing, and broad result of education. However, learners' excellent academic success combined with their co-academic achievements is the most directly observable and immediately achievable educational goal (Tuckman, 1992). Since the higher secondary stage of school marks a turning point in every student's life, the importance of academic achievement increases significantly (Eccles & Roeser, 2011). It is challenging for learners to successfully navigate this transitional phase, as they must adapt to their fast-changing bodies, emotional fluctuations, societal expectations, and the complexities of career decisions (Steinberg, 2014). These combined stressors can result

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in emotional instability or maladjustments, often affecting academic performance. Emotional disturbances and exam-related stress may hinder performance even in capable students (Sharma & Sidhu, 2011). These include classroom environment, guidance services, and institutional infrastructure (Fraser, 1994), as well as home environment, parental attitudes, financial stability, and job prospects (Hill & Tyson, 2009). Beyond these institutional and familial determinants, personal and psychological variables also significantly influence academic achievement, including learners' goals, motivation, learning preferences, and emotional well-being. Among these, metacognitive skills—have been identified as a key psychological factor influencing academic success (Flavell, 1979; Schraw & Dennison, 1994). These skills enable learners to take conscious control of their cognitive processes, thereby enhancing learning effectiveness and academic outcomes.

RATIONALE OF THE STUDY

Higher secondary education is important since it is where learners choose their career decisions and their performance affects their future. Higher secondary learners must, nevertheless, deal with their physical, emotional, psychological, and social developmental challenges since they are teenagers. According to Hall et al. (2002), Erik Erikson stated that "they generally experience the identity crisis or identity confusion." Social, familial, and peer influences, along with psychological and environmental problems, may cause learners to stray from appropriate learning techniques, which might have a detrimental impact on their academic performance and advancement. Additionally, a number of studies demonstrate the value of metacognition and metacognitive abilities in improving academic achievement across a range of educational levels. It is assumed that learners' accomplishment and metacognition have a good cause and effect connection. Understanding learners' metacognitive abilities may aid in developing effective teaching methods that combine academic counselling with training in metacognitive capabilities. Understanding learners' metacognitive abilities may help them achieve better academic results, facilitate learning, and realize educational goals directly or indirectly. All parties involved, including educators and parents, may implement effective tactics to improve learners' metacognitive abilities and, in turn, their academic achievement.

OBJECTIVES OF THE STUDY

1. To examine the extent to which metacognitive skills vary among higher secondary learners in West Bengal with respect to gender, locale, and academic stream.

2. To examine the extent to which academic achievement varies among higher secondary learners in West Bengal with respect to gender, locale, and academic stream.

3. To determine the strength and direction of the relationship between metacognitive skills and academic achievement among higher secondary learners in West Bengal.

HYPOTHESES OF THE STUDY

After identifying the research objectives, it becomes necessary to frame hypotheses to provide a focused and empirical direction to the study. In the present research, which aims to examine the differences among demographic variables as well as 'relationship between metacognitive skills and academic achievement of higher secondary learners in West Bengal, hypotheses are

framed to test the assumed link between students' ability to regulate their own thinking and their academic performance'. Framing hypotheses enables the researcher to translate abstract concepts like "metacognitive skills" into measurable variables, thereby allowing systematic data collection and statistical analysis.

H_{01} There is no statistically significant difference in the metacognitive skills of higher secondary learners in West Bengal with respect to their gender.

H_{02} There is no statistically significant difference in the metacognitive skills of higher secondary learners in West Bengal with respect to their locale.

H_{03} There is no statistically significant difference in the metacognitive skills of higher secondary learners in West Bengal with respect to their academic stream.

H_{04} There is no statistically significant difference in the academic achievement of higher secondary learners in West Bengal with respect to their gender.

H_{05} There is no statistically significant difference in the academic achievement of higher secondary learners in West Bengal with respect to their locale.

H_{06} There is no statistically significant difference in the academic achievement of higher secondary learners in West Bengal with respect to their academic stream.

H_{07} There is no statistically significant relationship between metacognitive skills and academic achievement among higher secondary learners in West Bengal.

Research Methodology

A descriptive study design was employed. West Bengal's higher secondary schools were the subject of an extensive survey.

a. Population and Sample

All learners registered in West Bengal's higher secondary schools make up the study's population. The sample consisted of 638 higher secondary learners. Students in the 11th grade from various higher secondary schools located in both rural and urban areas were chosen using a simple random sample procedure.

Table 1: *'Showing the distribution of Sample according to Demographic Variables'*

Demographic Variables	Group	N
Gender	*Boys*	286
	Girls	352
Locale	*Urban*	402
	Rural	236
Academic Stream	*Arts*	359
	Science	279
Total		638

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b. Tools Used in the Study

The study made use of the researcher's Metacognitive Skills Scale. Metacognitive Knowledge, Learning Knowledge, and Planning & Monitoring Ability are its three components. It has thirty items with a 5-point rating system. The Metacognitive Skills Scale has been shown to be both reliable and valid, with test-retest reliability at 0.75.

c. Data Collection

The researchers visited the schools in person with permission from the headmasters of each school. Before distributing the tool to the learners, the researcher had a brief discussion with them to obtain accurate answers. Clear instructions were provided to the learners on how to record their responses for each item related to the tool.

d. Statistical Techniques

To analysis the data the investigator 'used Independent Sample t-test and Pearson Correlation Analysis for the study'.

ANALYSIS AND INTERPRETATIONS OF DATA

Inferential Statistics

H_{01} There is no significant difference in the 'metacognitive skills of higher secondary learners in West Bengal with respect to their gender.'

Table 2: *Based on Gender, difference between 'Means Scores of Metacognitive Skills'*

Group	N	Mean	SD	df	*t*- value	*p*-value
Boys	286	98.32	11.29			
Girls	352	100.29	9.51	636	3.695	.000

As presented in Table 2, the '*calculated t-value (3.695)'* for gender is greater than the '*critical t-value (2.58) at the 0.01 level of significance,'* indicating a *'statistically significant result.'* Consequently, '*the null hypothesis is rejected'*. This suggests that a '*significant difference exists in the metacognitive skills of boys and girls higher secondary learners.'*

H_{02} There is no significant difference in the 'metacognitive skills of higher secondary learners in West Bengal with respect to their locale.'

Table 3: *Based on Locale, difference between 'Means Scores of Metacognitive Skills'*

Group	N	Mean	SD	df	*t*- value	*p*-value
Urban	402	102.98	10.28			
Rural	236	94.31	8.19	636	2.879	.000

As presented in Table 3, the '*estimated t-value (2.879)'* for locale exceeds the '*critical t-value (2.58) at the 0.01 level of significance,'* indicating a *'statistically significant result.'* Accordingly, the '*null hypothesis is rejected'*. This implies that there is a *'significant difference in the metacognitive skills of urban and rural higher secondary learners.'*

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H_{03} There is no significant difference in the 'metacognitive skills of higher secondary learners in West Bengal with respect to their academic stream.'

Table 4: *Based on Academic Stream, difference between 'Means Scores of Metacognitive Skills'*

Group	N	Mean	SD	df	*t*- value	*p*-value
Arts	359	113.54	12.87			
Science	279	108.47	10.13	636	3.356	.000

As presented in Table 4, the *'calculated t-value (3.356)'* for academic stream exceeds the '*critical t-value (2.58) at the 0.01 level of significance,'* indicating a *'statistically significant result.'* Therefore, '*the null hypothesis is rejected.'* This suggests that *'a significant difference exists in the metacognitive skills of arts and science higher secondary learners.'*

H_{04} There is no significant difference in the 'academic achievement of higher secondary learners in West Bengal with respect to their gender.'

Table 5: *Based on Gender, difference between 'Means Scores of Academic Achievement'*

Group	N	Mean	SD	df	*t*- value	*p*-value
Boys	286	103.98	10.73			
Girls	352	99.87	8.79	636	2.985	.000

As presented in Table 5, the *'calculated t-value (2.985)'* for gender exceeds the *'critical t-value (2.58) at the 0.01 level of significance,'* indicating a *'statistically significant result.'* Consequently, *'the null hypothesis is rejected.'* This indicates that *'a significant difference exists in the academic achievement of male and female higher secondary learners.'*

H_{05} There is no significant difference in the 'academic achievement of higher secondary learners in West Bengal with respect to their locale.'

Table 6: *Based on Locale, difference between 'Means Scores of Academic Achievement'*

Group	N	Mean	SD	df	*t*- value	*p*-value
Urban	402	105.19	10.29			
Rural	236	101.59	7.97	636	3.189	.000

As presented in Table 6, the *'calculated t-value (3.189)'* for locale exceeds the *'critical t-value (2.58) at the 0.01 level of significance,'* indicating a *'statistically significant result.'* Accordingly, the *'null hypothesis is rejected.'* This suggests that *'a significant difference exists in the academic achievement of urban and rural higher secondary learners.'*

H_{06} There is no significant difference in the 'academic achievement of higher secondary learners in West Bengal with respect to their academic stream.'

Table 7: *Based on Academic Stream, difference between 'Means Scores of Academic Achievement'*

Group	N	Mean	SD	df	*t*- value	*p*-value
Arts	359	106.49	11.29			
Science	279	99.27	8.27	636	2.756	.000

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As presented in Table 7, the *'calculated t-value (2.756)'* for academic stream exceeds the *'critical t-value (2.58) at the 0.01 level of significance,'* indicating a *'statistically significant result.'* Therefore, *'the null hypothesis is rejected.'* This implies that *'a significant difference exists in the academic achievement of arts and science higher secondary learners.'*

H_{07} There is no significant relationship between 'metacognitive skills and academic achievement of higher secondary learners in West Bengal.'

Table 8: '*Correlation between Metacognitive Skills and Academic Achievement'*

Correlation		MS	AA
MS	*Pearson Correlation* *Sig. (2-tailed)* *N*	1 638	.446** .000 638
AA	*Pearson Correlation* *Sig. (2-tailed)* *N*	.446** .000 638	1 638

As shown in Table 8, the *'Pearson correlation coefficient between metacognitive skills and academic achievement among higher secondary learners is r = .446, which is statistically significant at the 0.01 level (p < .01).'* This reflects a moderately strong positive correlation between the two variables. Therefore, it may be concluded that metacognitive skills are substantially and positively associated with academic achievement in higher secondary learners.

EDUCATIONAL IMPLICATIONS

Implementing structured metacognitive exercises that prompt learners to reflect critically on their prior knowledge, personal interests, and cognitive strengths fosters greater self-awareness. This reflective practice not only enhances learner autonomy but also provides educators with valuable insights to tailor instructional approaches effectively.

In order to foster metacognitive growth among students, educators must recognize and accommodate the individual differences in learners' levels of metacognitive awareness. Instructional strategies should be differentiated and inclusive, ensuring that pedagogical interventions are responsive to diverse cognitive profiles within the classroom.

The findings indicate that variables such as gender, geographic location, and academic stream do not significantly influence learners' metacognitive abilities. Consequently, there is a need to implement innovative, universally designed teaching strategies and educational practices that facilitate the development of metacognitive skills across all learner demographics.

Students should be encouraged to cultivate metacognitive competencies by regularly evaluating their learning styles and academic performance. This self-assessment enables them to adopt adaptive learning strategies, thereby improving academic outcomes through informed decision-making and goal-oriented planning.

CONCLUSION

Effective classroom instruction should consistently integrate activities that cultivate a systematic, reflective, and deliberate approach to learning. When students are encouraged to engage in purposeful reflection, assessment, and adaptation of their learning strategies, they develop the capacity to monitor and improve their cognitive processes over time. This process not only enhances academic performance but also lays the foundation for lifelong learning. Relying solely on routine or superficial tasks may limit students' intellectual growth. In contrast, introspective learning experiences that prompt students to think deeply about how they learn can significantly contribute to their academic development. These practices promote an active learning environment where learners take ownership of their educational journeys. Teachers have a vital role in shaping this learning environment. By modelling effective learning techniques, problem-solving strategies, and reflective practices, educators influence students far beyond the immediate classroom experience. Furthermore, supporting students in identifying and refining their personal learning styles and strategies helps them become more autonomous and resilient learners.

In conclusion, embedding reflective and metacognitive practices into regular classroom activities is crucial for promoting meaningful and enduring learning. Teachers act not only as content deliverers but also as facilitators of cognitive and personal development. Through deliberate instructional choices, they can significantly enhance students' capacity to think critically, learn independently, and adapt to new challenges—skills that are increasingly essential in the dynamic and complex world of the 21st century.

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ENGAGING CLASSROOMS, EMPOWERED LEARNERS: MEDIATING ROLE OF STUDENT ENGAGEMENT BETWEEN CLASSROOM CLIMATE AND ENGLISH ACHIEVEMENT IN GOVERNMENT-SPONSORED SCHOOLS

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ABSTRACT

Student engagement is widely recognized as a fundamental element of academic achievement, encompassing both emotional and cognitive dimensions. However, observations suggest a decline in student engagement within numerous government-sponsored schools in India. This research investigates the mediating role of student engagement in the relationship between classroom climate and English language proficiency among secondary school students. Utilizing a quantitative approach, the study collected data from 700 students attending government-sponsored schools in West Bengal, employing validated instruments to assess classroom climate, student engagement, and English achievement. The analysis involved descriptive statistics, correlation, and regression analyses performed using SPSS, followed by a formal mediation analysis conducted in R with 5,000 bootstrap simulations. Findings indicated robust positive correlations across all three variables. Regression results demonstrated that while classroom climate significantly predicted English achievement, its predictive power decreased considerably when student engagement was introduced into the model, thereby suggesting a mediating effect. The mediation analysis confirmed a significant indirect effect (ACME = 0.1313, 95% CI [0.1118, 0.15], $p < .001$), revealing that approximately 66% of the total effect was transmitted via student engagement. These results underscore that student engagement is not merely an outcome but a crucial psychological mechanism through which the classroom environment impacts academic performance. Consequently, this study offers practical implications for educators and policymakers, suggesting that cultivating engaging and emotionally supportive classroom settings can significantly enhance English learning outcomes in under-resourced government schools.

Keywords*:* Academic outcomes; Classroom climate; English achievement; Mediation; Student engagement.

INTRODUCTION

Student engagement is frequently conceptualized as a vital component driving academic achievement. Regrettably, in contemporary educational settings, especially within government-sponsored schools, there appears to be a noticeable decrease in this crucial aspect. A growing number of educators are observing an increasing trend of student disengagement, characterized by a lack of attentiveness, limited involvement, and diminishing enthusiasm. Even in classrooms with meticulously designed lessons and structured evaluation methods, the learning environment often lacks vibrancy. This research addresses this critical issue by investigating

how student engagement could serve as a pivotal connection between the classroom environment and students' English language performance.

The atmosphere within a classroom, particularly in government schools across India, significantly influences students' academic conduct and emotional preparedness (Fraser, 1998; Moos, 1979). For individuals learning a second language, an unstimulating classroom environment can further impede their progress in subjects such as English (Reyes et al., 2012; Singh & Sharma, 2023). Although factors like home environment and previous exposure are influential, school-based elements, including the degree to which students feel supported and intellectually stimulated, are equally vital (Zullig et al., 2011; OECD, 2021). Student engagement, which encompasses emotional, behavioral, and cognitive aspects, has the potential to act as a mediating variable connecting classroom climate and overall academic performance (Fredricks et al., 2004; Wang & Holcombe, 2010). Students who are engaged typically derive more enjoyment from learning, demonstrate greater persistence, and interact with classroom activities in a more profound way. Despite existing research, there is limited investigation into this specific relationship within government-sponsored secondary schools in West Bengal, a region where English proficiency and student engagement continue to be significant concerns (Mishra & Sharma, 2021; Chakraborty, 2022). This study aims to bridge this gap by examining the combined influence of classroom climate and student engagement on English achievement, thereby providing valuable insights for both educators and policymakers.

LITERATURE REVIEW

1. **Classroom Climate and Academic Achievement**

Classroom climate refers to students' perceptions of the psychological and instructional aspects of their learning environment. A positive climate—characterized by supportive teacher-student interactions, clear expectations, mutual respect, and opportunities for participation—has been consistently linked to better academic outcomes (Fraser, 1998; Zullig et al., 2011). Moos (1979) emphasized that students are more likely to be motivated and perform well when they feel emotionally safe and valued in class. In the Indian context, Singh and Sharma (2023) found that classroom atmosphere significantly influenced the academic attitudes and efforts of students, especially in public schools with limited resources.

2. **Challenges in English Achievement in Government Schools**

English, as a second language in India, poses unique challenges for students, particularly in government-sponsored schools. These schools often struggle with inadequate language exposure, limited instructional resources, and high student–teacher ratios (Chakraborty, 2022). Raj and Thomas (2020) noted that students from such settings experience difficulty in mastering reading, writing, and speaking components of English. Additionally, disparities in classroom interaction and instructional strategies further widen the achievement gap in language learning.

3. **The Mediating Role of Student Engagement**

Student engagement, comprising cognitive, emotional, and behavioral dimensions, is widely recognized as a predictor of academic success (Fredricks et al., 2004). Engaged students show greater persistence, participate more in learning tasks, and display deeper understanding. Recent studies suggest that engagement may also serve as a **mediator**, explaining how learning environments influence achievement (Reyes et al., 2012; Wang & Holcombe, 2010). However, the role of engagement as a mediator has rarely been tested in the context of English learning in government schools—an area this study seeks to address.

RESEARCH GAPS

Although several studies have examined classroom climate, student engagement, and academic achievement individually, few have explored their interrelationship in a unified model—particularly in the context of English as a second language. Most research focuses on private or urban schools and treats engagement as an outcome rather than a mediator. In government-sponsored schools in West Bengal, this area remains underexplored, with limited empirical work addressing engagement as a mediator between classroom climate and English achievement (Chakraborty, 2022; Singh & Sharma, 2023). This study tried to address that gap.

RATIONALE OF THE STUDY

The role of English as a gateway to higher education, career opportunities, and digital access in India has been strongly emphasized in national educational policies. However, the persistent underachievement in English among students in government-sponsored schools, particularly in regions like West Bengal, remains a major concern. Traditional interventions have focused heavily on curriculum content and teacher training, often overlooking the deeper psychological and contextual factors that shape students' willingness and ability to engage in language learning.

Given that classroom climate significantly affects students' emotional and academic well-being (Zullig et al., 2011; OECD, 2021), it becomes essential to understand how this environment contributes to or hinders language achievement. Yet, the relationship may not be linear. Student engagement encompassing cognitive, emotional, and behavioral aspects can serve as a mechanism explaining how a classroom climate influences learning outcomes. If students are disengaged, even the most supportive classroom setting might fail to yield academic gains.

In this light, investigating the mediating role of student engagement is not just academically relevant, but also practically significant for educators and policymakers working in under-resourced school systems. By exploring this dynamic in the specific context of government-sponsored secondary schools, this study seeks to generate insights that are locally grounded and immediately applicable. The findings can help teachers and administrators design more responsive, engagement-driven strategies to improve English learning outcomes in similar school environments.

RESEARCH QUESTIONS

What is the relationship between classroom climate and English achievement among secondary school students in government-sponsored schools?

To what extent does student engagement mediate the relationship between classroom climate and English achievement?

What is the overall influence of student engagement on English achievement in the given context?

STATEMENT OF THE PROBLEM

Despite numerous curricular reforms and teacher-focused initiatives, English achievement among students in government-sponsored secondary schools continues to be low. While various external factors have been considered, the role of the **classroom learning environment** and the students' **active engagement** in the learning process have received limited attention. Given that classroom climate plays a vital role in shaping students' academic behavior and motivation, it is critical to examine **how this environment influences English performance**. However, without understanding whether **student engagement acts as the linking mechanism**, educators and policymakers may continue to miss a key component in the effort to improve language learning outcomes. Therefore, this study seeks to investigate this mediating role of student engagement in the relationship between classroom climate and English achievement.

OPERATIONAL DEFINITIONS

Classroom Climate

In this study, classroom climate refers to students' perceptions of the overall classroom environment, including interpersonal relationships, discipline, participation, fairness, teacher behavior, and classroom management. It is measured using the Classroom Climate Scale developed by Jessina Mutthe, consisting of 36 items rated on a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

Student Engagement

Student engagement is defined as the extent to which students are emotionally, cognitively, and behaviorally involved in the learning process. It includes three dimensions:

Cognitive Engagement: Efforts to understand academic content, use of learning strategies.

Emotional Engagement: Positive feelings about learning, teachers, and school.

Behavioral Engagement: Participation in academic tasks and school activities. This is measured using the Student Engagement Scale (SES-SLHCM) developed by Prof. (Dr.) Hemant Lata Sharma and Ms. Manasi Chowdhry, which includes 30 items covering all three dimensions.

English Achievement

English achievement refers to students' performance in English as a second language. It is measured through a 50-item English Achievement Test covering reading comprehension, vocabulary, and grammar. This tool has been developed and standardized by the author

specifically for Bengali-medium senior secondary students in alignment with the West Bengal Council of Higher Secondary Education (WBCHSE) curriculum.

Government-Sponsored Secondary Schools

These are partially state-funded schools affiliated with the WBCHSE, serving secondary-level students in West Bengal. These schools cater primarily to students from lower- and middle-income communities and operate under government management structures.

OBJECTIVES AND HYPOTHESES

Objectives of the Study

To assess the level of classroom climate perceived by secondary school students in government-sponsored schools.

To measure the level of student engagement across cognitive, emotional, and behavioral dimensions.

To evaluate the English achievement of secondary students in government-sponsored schools.

To examine the relationship between classroom climate and English achievement.

To examine the influence of student engagement on English achievement and its mediating role in the relationship between classroom climate and English achievement.

A substantial body of academic literature highlights the beneficial effects of conducive learning environments and active student participation on educational results, thereby informing the development of the subsequent directional hypotheses. Previous studies consistently demonstrate that a positive classroom atmosphere cultivates greater student engagement, which consequently leads to enhanced academic performance (Fraser, 1998; Moos, 1979; Reyes et al., 2012). Moreover, student engagement—covering cognitive, emotional, and behavioral dimensions—is posited as a crucial psychological process through which the classroom setting translates into tangible learning achievements (Wang & Holcombe, 2010).

Hypotheses of the Study:

The following alternative Hypotheses are constructed:

H_1: There is a significant positive relationship between classroom climate and student engagement among secondary school students.

H_2: There is a significant positive relationship between classroom climate and English achievement.

H_3: There is a significant positive relationship between student engagement and English achievement.

H_4: Student engagement significantly influences English achievement and mediates the relationship between classroom climate and English achievement among secondary school students in government-sponsored schools.

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DELIMITATION OF THE STUDY

"The scope of this research is restricted to a selection of schools within particular districts of West Bengal, which might constrain its broader applicability."

"This investigation centers exclusively on English as a subject, omitting consideration of performance in other academic disciplines."

"The sample exclusively comprises Bengali-medium students enrolled in Class XI and XII."

"Participation in this study is limited to students attending government-sponsored secondary schools affiliated with the West Bengal Council of Higher Secondary Education (WBCHSE)."

METHODS

Research Design

This investigation employs a quantitative methodology, specifically a descriptive and correlational research design, to explore the connections among classroom climate, student engagement, and English achievement. Additionally, mediation analysis is conducted to ascertain if student engagement serves as an intermediary factor in the relationship between classroom climate and English achievement.

Sample

The study's sample comprises 700 students enrolled in Class XI and XII from government-sponsored Bengali-medium secondary schools located in specific districts of West Bengal. A stratified random sampling technique was implemented to guarantee equitable representation concerning gender, geographic area (urban/rural), and academic stream. Before data collection, necessary permissions were secured from school authorities, and informed consent was acquired from all participants.

Tools Used

Classroom Climate Scale

This 36-item scale, developed by Jessina Mutthe, utilizes a 5-point Likert format. It evaluates students' perceptions regarding diverse facets of the classroom environment, such as teacher conduct, disciplinary practices, support systems, and opportunities for participation.

Student Engagement Scale (SES-SLHCM)

Authored by Prof. (Dr.) Hemant Lata Sharma and Ms. Manasi Chowdhry, this 30-item instrument measures student engagement across its cognitive, emotional, and behavioral dimensions, employing a 5-point Likert scale.

English Achievement Test (EAT)

The English Achievement Test (EAT) is a 50-item multiple-choice assessment created and validated by the researcher to evaluate students' English language skills. It covers grammar, vocabulary, and reading comprehension, aligning with the WBCHSE senior secondary

curriculum. The EAT underwent a thorough development and standardization process involving 240 secondary school students (aged 15-17 years) chosen through stratified random sampling. Its psychometric attributes were assessed via extensive analyses. Reliability was confirmed with a Kuder-Richardson Formula 20 (KR-20) value of 0.796 and a split-half reliability coefficient of 0.942 (Spearman-Brown Prophecy Formula), both indicating robust internal consistency. Item analysis verified suitable difficulty levels (P-values from 0.438 to 0.583, all within the ideal 0.3-0.7 range) and strong discrimination (D-index values from 0.200 to 0.508, with 39 items demonstrating good discrimination). Criterion validity was supported by a significant positive correlation (Pearson $r = 0.772$, $p < .001$) between EAT scores and Class XI English Marks, thereby affirming its utility in measuring English proficiency against established academic standards.

Procedure

Before commencing data collection, the researcher secured authorization from school principals and relevant district authorities. The objectives of the study were conveyed to all participants, and their engagement was entirely voluntary. Data acquisition occurred in January 2025. All research instruments were administered in a classroom environment during regular school hours, with each student's session extending for approximately 130 minutes. Participants received explicit guidance and ample time to complete the questionnaires and the achievement test. Following data collection, the raw information was coded and input into Excel and SPSS (version 29) for subsequent statistical analysis.

Techniques of Analysis

Descriptive Statistics: Calculation of means, standard deviations, and percentages to identify general patterns.

Pearson's Correlation Coefficient: Utilized to investigate the associations between variables.

Multiple Regression Analysis: Employed to assess the direct impacts of classroom climate and engagement on English achievement.

Mediation Analysis: Performed using Hayes' mediation approach in R Studio, incorporating bootstrapping (5,000 simulations) to evaluate the mediating function of student engagement.

RESULTS

This section presents the findings derived from the statistical analyses, which were performed using SPSS (v26) and RStudio. The focus of these analyses was to investigate the relationships among Classroom Climate, Student Engagement, and English Achievement, as well as to examine the mediating role of Student Engagement.

Descriptive Statistics:

Table 1: Descriptive Statistics of Study Variables

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Classroom Climate	700	75	173	126.00	15.000

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Student Engagement	700	68	137	105.00	12.000
English Achievement	700	15	50	35.01	5.984
Valid N (listwise)	700				

Descriptive statistics (N = 700) were computed for all three variables under investigation. The outcomes, detailed in Table 1, reveal moderate to high levels for Classroom Climate and Student Engagement, alongside a normally distributed performance for English Achievement.

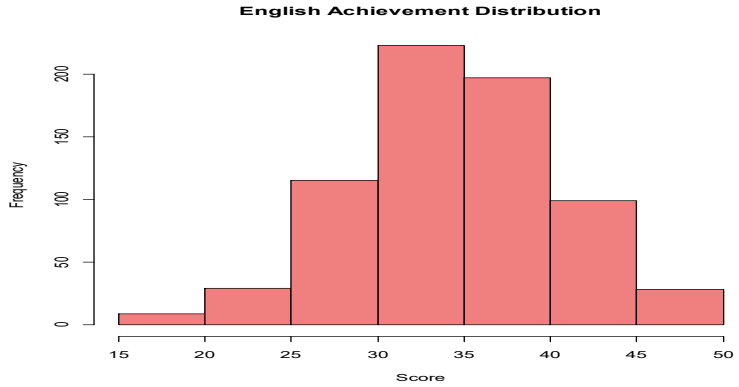

Figure 1A. Distribution of English Achievement Scores

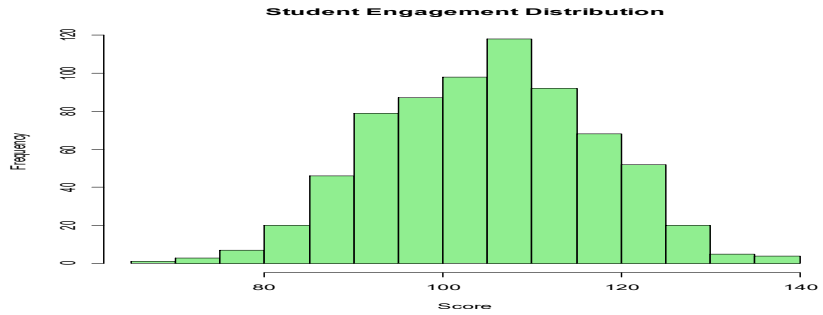

Figure 1B. Distribution of Student Engagement Scores Figure

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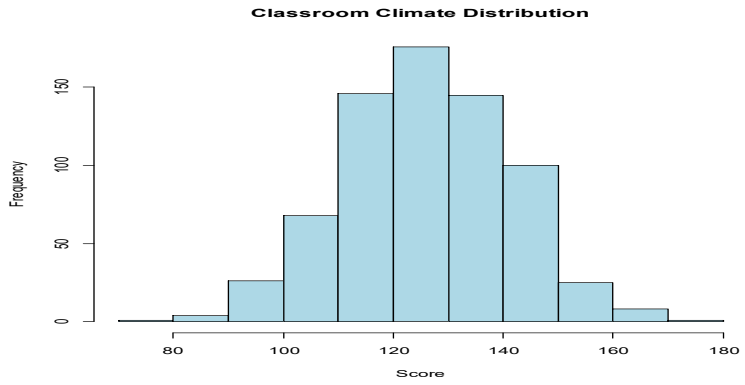

Figure 1C. Distribution of Classroom Climate Scores

Correlation Analysis

Pearson's correlation coefficients were calculated using SPSS. As shown in Table 2, all three variables exhibited significant positive correlations ($p < .01$). These correlations indicate that more positive perceptions of classroom climate are associated with higher student engagement and improved English performance.

Table 2: Pearson Correlation Coefficients among the Key Variables (N = 700)

	Classroom Climate	Student Engagement	English Achievement
Classroom Climate	1	.600**	.500**
Student Engagement	.600**	1	.651**
English Achievement	.500**	.651**	1

Note: **p < .01 (2-tailed)**

These correlations suggest that **higher classroom climate perceptions** are associated with **greater student engagement** and **better English performance**.

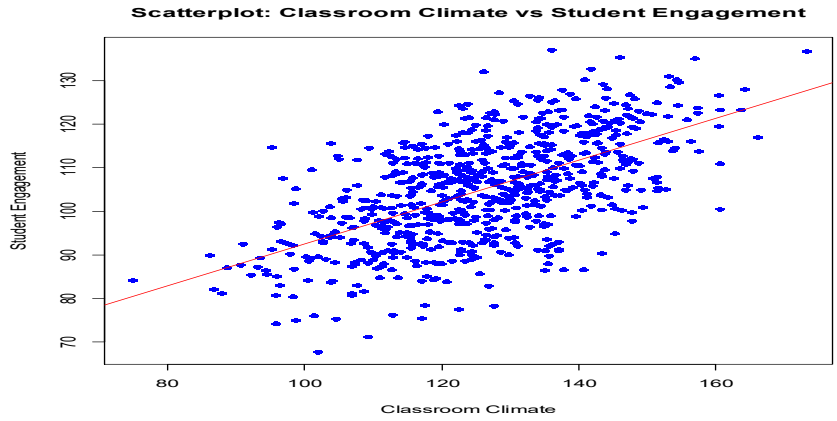

Figure 2A. Scatter plot: Classroom Climate vs Student Engagement

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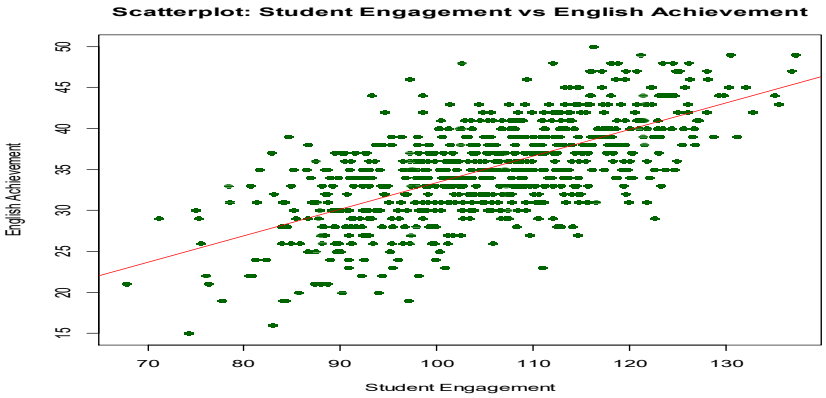

Figure 2B. Scatter plot: Student Engagement vs English Achievement

Regression Analysis

A hierarchical regression analysis was conducted in SPSS to further investigate the predictive relationships among the variables. The results are summarized in Table 3. This analysis revealed that the predictive strength of Classroom Climate on English Achievement diminished when Student Engagement was introduced into the model (Classroom Climate drops to β= .170), which strongly suggests partial mediation.

Table 3: Regression Summary

Model	Predictor	β (Standardized)	R^2	F	Sig.
1	Classroom Climate	.500	.250	232.05	.000 **
2	+ Student Engagement	.549 (SE)	.442	276.18	.000 **
	(Classroom Climate drops to β = .170)				

This result indicated that when Student Engagement was included in the model, the predictive strength of Classroom Climate on English Achievement **dropped**, which is a strong sign of **partial mediation**.

Mediation Analysis in R

To formally assess the mediation effect, nonparametric bootstrapping was performed in RStudio (using the mediation package) with 5,000 simulations. The results, presented in Table 4, confirm that Student Engagement significantly mediates the relationship between Classroom Climate and English Achievement. The significance of both direct and indirect effects provides clear evidence of partial mediation.

Table 4: Mediation Analysis Summary (RStudio)

Effect Type	Estimate	95% CI	p-value

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Indirect (ACME)	0.1313	[0.1118, 0.15]	< .001
Direct (ADE)	0.0680	[0.0397, 0.10]	< .001
Total Effect	0.1993	[0.1733, 0.22]	< .001
Proportion Mediated	0.6590	[0.5558, 0.78]	< .001

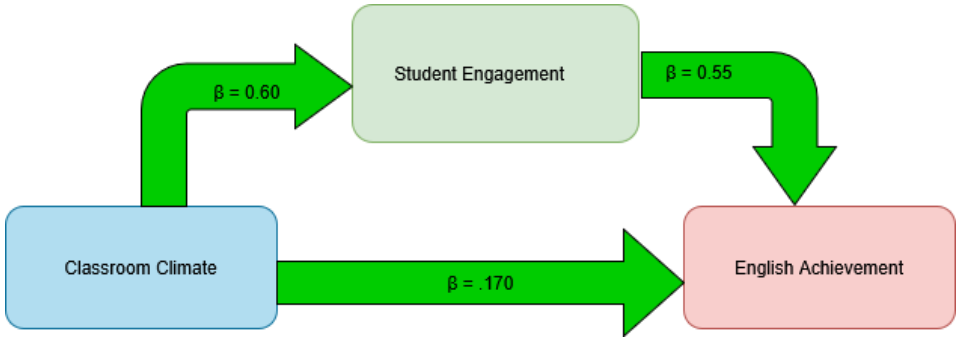

Figure 3. Mediation Model Illustrating the Role of Student Engagement between Classroom Climate and English Achievement.

These results confirm that **Student Engagement significantly mediates** the relationship between Classroom Climate and English Achievement. Since both **direct and indirect effects are significant**, this provides **evidence of partial mediation**.

FINDINGS AND DISCUSSION

The study examined how classroom climate influences English achievement among secondary students in government-sponsored schools, with student engagement as a potential mediator. Data from 700 students were analyzed using SPSS and RStudio.

Key Findings

Significant Correlations: Classroom climate, student engagement, and English achievement were all positively and significantly related.

Partial Mediation: Regression showed that while classroom climate predicted English achievement, its effect weakened when student engagement was included—suggesting partial mediation.

Mediation Confirmed: RStudio's mediation analysis revealed a significant indirect effect (ACME = 0.1313), with student engagement mediating about 66% of the total effect between classroom climate and English achievement.

Hypotheses Interpretation

The results of the study provided clear statistical support for all four proposed hypotheses:

H_1 was supported, as the correlation analysis revealed a strong, significant positive relationship between classroom climate and student engagement ($r = .60$, $p < .01$). This suggests that a more positive classroom environment is associated with higher levels of student involvement. This

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strong positive correlation ($r = .60$, $p < .01$) aligns with socio-constructivist theories emphasizing the role of a supportive learning environment in fostering active student participation. A classroom where students feel safe, respected, and valued is more likely to encourage their emotional investment and cognitive engagement, as evidenced by Moos, 1979 and Fraser, 1998.

H_2 was confirmed through both correlation and regression results, showing that classroom climate positively predicts English achievement ($r = .50$, $p < .01$; $\beta = .500$ in initial regression).

H_3 was strongly supported, with a significant correlation between student engagement and English achievement ($r = .651$, $p < .01$), and a high standardized regression weight ($\beta = .549$), indicating that engagement is a strong predictor of performance in English. The robust correlation ($r = .651$, $p < .01$) and high standardized regression weight ($\beta = .549$) for student engagement and English achievement underscore engagement as a critical predictor. This finding reinforces the notion that actively involved learners, who are emotionally connected and cognitively invested, are better positioned to assimilate and apply linguistic knowledge, consistent with the findings by Fredricks et al., 2004 and Wang & Holcombe, 2010.

H_4 was supported on both fronts. First, regression analysis showed that student engagement significantly predicted English achievement (**$\beta = .549$, $p < .001$**), confirming its direct influence. Second, mediation analysis using the mediation package in RStudio revealed a significant indirect effect of classroom climate on English achievement through engagement (**ACME = 0.1313, $p < .001$**), accounting for **66%** of the total effect. These findings confirm that student engagement both **influences** English achievement and **partially mediate** the effect of classroom climate on it. The confirmation of partial mediation for H4 (ACME = 0.1313, $p < .001$, accounting for 66% of the total effect) is a pivotal finding. It suggests that while a positive classroom climate can directly influence English achievement, a substantial portion of this influence is channeled through student engagement. This implies that a supportive environment doesn't automatically lead to better outcomes; rather, it creates the conditions under which students are more likely to become engaged, and it is this engagement that directly drives improved English proficiency. This also posits that environmental factors (classroom climate) influence individual psychological states (engagement), which then impact behavioral outcomes (achievement). The partial nature of the mediation indicates that other factors, not explored in this model, may also directly link classroom climate to achievement.

These findings collectively demonstrate that student engagement is a central mechanism through which classroom climate influences English academic outcomes—particularly in the context of government-sponsored schools. These findings also highlight the vital role of student engagement in linking supportive classroom climates to better English achievement. The results align with prior research (Fraser & Walberg, 2005; Kumar & Karabenick, 2013; Fredricks et al., 2004; Reeve, 2012; Bhattacharya, 2018; Singh & Sahu, 2020) and uniquely extend these insights to government-sponsored schools in West Bengal. In such resource-limited settings, fostering engagement and a positive climate can be effective, low-cost strategies to enhance language learning outcomes.

SUMMARIZATION, RECOMMENDATIONS, IMPLICATIONS

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Summarization:

This investigation examined the influence of classroom climate on English achievement among secondary students in government-sponsored schools in West Bengal, with particular attention to the mediating role of student engagement. Utilizing a sample of 700 students and rigorously validated instruments, the findings revealed robust, positive interrelationships among the three variables. Mediation analysis confirmed that student engagement significantly mediated the effect of classroom climate on English achievement, with approximately 66% of the total effect being transmitted through engagement. This indicates that cultivating a positive classroom environment not only directly impacts learning outcomes but also exerts an indirect influence by shaping the active and emotional participation of students in their learning process.

Recommendations:

Based on the study's findings, the following recommendations are put forth:

Teacher Professional Development: Implement regular workshops focused on equipping educators with strategies to cultivate emotionally supportive and highly engaging classroom settings.

Effective Classroom Management: Schools should champion approaches that enhance classroom organization, ensure instructional clarity, and foster an atmosphere of mutual respect.

Engagement Monitoring: Introduce systematic periodic surveys and observational checklists to gauge student engagement levels, allowing for timely adjustments to pedagogical methods.

Targeted Language Interventions: Design English learning activities to be more interactive and culturally/contextually relevant, thereby sustaining students' active involvement.

Implications:

a) Theoretical: This study strengthens the conceptualization of student engagement as a crucial mediating construct. It provides empirical support for motivational and constructivist theories that posit a link between classroom climate and academic outcomes. Specifically, the research offers evidence demonstrating how environmental factors (classroom climate) influence psychological processes (engagement), which, in turn, shape learning achievements. This contributes to a more refined understanding of models explaining academic success.

b) Practical: For government-sponsored schools, promoting student engagement presents an efficient and economical strategy for enhancing English achievement, particularly in contexts with limited resources.

c) Policy: Policymakers could consider integrating indicators related to classroom climate and student engagement into frameworks for teacher evaluation and school quality assurance. Such a shift would broaden the focus beyond conventional metrics to include process-oriented indicators directly tied to student learning and well-being, potentially fostering more comprehensive educational reforms.

CONCLUSION

This study highlights the profound significance of a nurturing classroom environment and the pivotal role of student engagement in influencing English learning outcomes. Within the context of government-sponsored schools, where systemic limitations frequently pose challenges to student performance, the emotional and motivational atmosphere of the classroom gains even greater importance. The findings affirm that engaged students are products of engaging classrooms, suggesting that strategic investment in positive classroom practices can significantly empower learners to achieve better results, particularly in fundamental academic subjects like English.

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REIMAGINING HIGHER EDUCATION FOR 21ST CENTURY: NEP 2020'S VISION FOR MULTIDISCIPLINARY EDUCATION

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ABSTRACT

Every country tries to form a good educational background to compete with the 21st century's skills. For this, the National Education Policy 2020 recognizes that multidisciplinary education will become a strong pillar of the 21st century. NEP 2020 follows the ancient system of education that introduced the concept of multidisciplinary education through universities like Takshashila, Nalanda, Vikramshila, etc. The policy envisions that over time; all higher education institutions (HEIs) should become multidisciplinary. Students' knowledge is confined to their special subjects, so they do not earn an understanding of various disciplines that help them solve practical life problems. Higher education institutions including colleges and universities should focus on a multidisciplinary approach according to NEP 2020. Researchers represent the concept of multidisciplinary education, its relevance, and the recommendation of NEP 2020 based on the multidisciplinary approach to higher education including restructuring- higher education institutions, structure, curriculum and assessment, quality-based teaching and research, teacher education, etc. Apart from these researchers also discuss the challenges of implementing multidisciplinary education.

Keywords: Multidisciplinary education, NEP 2020, Teacher Education, Higher Education

Introduction

Education plays a vital role in our lives. A well-rounded education equips individuals with the knowledge, values, and abilities necessary to navigate and solve the world's increasing problems. With the help of education educated men and women perform flawlessly in any critical situation and can judge value. National Education Policy (NEP 2020) emphasizes multidisciplinary education so that India's higher education system can properly develop people's personalities. The concept of Multidisciplinary education has come from ancient universities like Takshashila, Nalanda, Vikramshila, etc. The current educational system fosters excessive specialization, creating artificial barriers between humanities, sciences, social studies, and arts. As a result, students possess limited knowledge outside their specific fields and are often unaware of the valuable insights they are missing. Multidisciplinary education is being introduced to rectify this (Wani et al. 2021). Therefore, NEP 2020 supports the multidisciplinary approach that helps learners integrate knowledge among various disciplines. The National Education Policy 2020 recommends 'Holistic and Multidisciplinary Education' as the fundamental structure for the 21st-century knowledge-based economy, with a focus on problem-solving. Although it looks like a simple idea, it is complex. This section will give an

introduction to multidisciplinary education, and encourage teachers to learn more and to create multidisciplinary teaching and research in universities (Kamala,2023). The National Education Policy 2020 seeks to revolutionize higher education by making it more accessible, comprehensive, and interdisciplinary. It promotes a unique learning model where students can explore diverse subjects, transcending traditional disciplinary boundaries. Students get an opportunity to choose different fields of knowledge with the help of a Multidisciplinary approach and learners can compete at the international level. In this 21st century, all the perspectives of education update day by day. A comprehensive, cross-disciplinary education significantly boosts the quality and scope of research. Multidisciplinary research opens the door for scholars to work with various disciplines and implement the knowledge of different disciplines. So, the New Education Policy focuses on students' holistic knowledge and creative thinking. NEP 2020 recommends large multidisciplinary universities will be established. It says three broad categories of universities will be established. Currently, multidisciplinary education is a widely discussed topic. So, researchers seem that this topic is valuable for all. In this research paper, researchers try to reimagine higher education for the 21st century in the light of NEP 2020's Multidisciplinary Education. This paper examines the idea of multidisciplinary education, exploring its importance and practical application within higher education, specifically as envisioned by India's National Education Policy 2020. It also addresses the obstacles encountered when putting this approach into practice.

Methodology

The primary objective of this paper is to highlight NEP 2020's vision for multidisciplinary education in respect of the higher education system of India. As a methodology, researchers have used descriptive and document analysis methods. Researchers have used secondary data from available resources such as books, journals, articles, web resources, etc.

Concept of Multidisciplinary Education

Multidisciplinary education is an educational approach that integrates multiple disciplines to provide a comprehensive learning experience. It aims to enhance students' understanding of the interconnections between various fields and their practical applications in problem-solving. When applied in schools and colleges, this approach enables learners to explore subjects from diverse perspectives, deepening their knowledge. Additionally, it promotes creativity, critical thinking, collaboration, and effective communication skills (Krishnaveni & Purusotham, (2023). It understands that modern global challenges are intricate and require solutions that draw from multiple disciplines. Hence, it strives to merge knowledge and skills from various fields to address real-world issues effectively. A fundamental aspect of multidisciplinary education is its emphasis on collaboration and teamwork. It promotes cooperative learning, where students' problem-solve and exchange knowledge across different disciplines. This method not only enriches their learning experience but also equips them for the modern workforce, where interdisciplinary collaboration is highly valued (Nandeshwar,2023). At the start of the 20th century, the academic landscape was relatively narrow, primarily encompassing fields like the physical sciences, life sciences, social studies, and philosophical inquiry. Over time, specialized applied fields like Engineering, Law, and Medicine emerged. Eventually, a multidisciplinary approach was incorporated even within fundamental

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disciplines. For instance, undergraduate Economics education began integrating Mathematics and Statistics, which played a crucial role in its development. The combination of these subjects enabled Economics to evolve into an empirical science, facilitating more accurate modeling, estimation, and forecasting. Mathematics and Statistics thus became essential tools for advancing the field of Economics. During the 20th century, multidisciplinary education expanded, leading to the development of diverse curricula across universities worldwide. In many cases, the emergence of new disciplines was a direct outcome of multidisciplinary learning. Management's establishment as an independent discipline resulted from the merging of concepts from Economics, Finance, Commerce, Accounting, Psychology, and Mathematics. Similarly, multidisciplinary principles are evident in undergraduate Environmental Science programs, which combine elements from "Physics, Chemistry, Ecology, Biotechnology, Biogeography, and Economics". These examples illustrate how the interaction between various disciplines fosters the development of new multidisciplinary fields (Kamala, 2023).

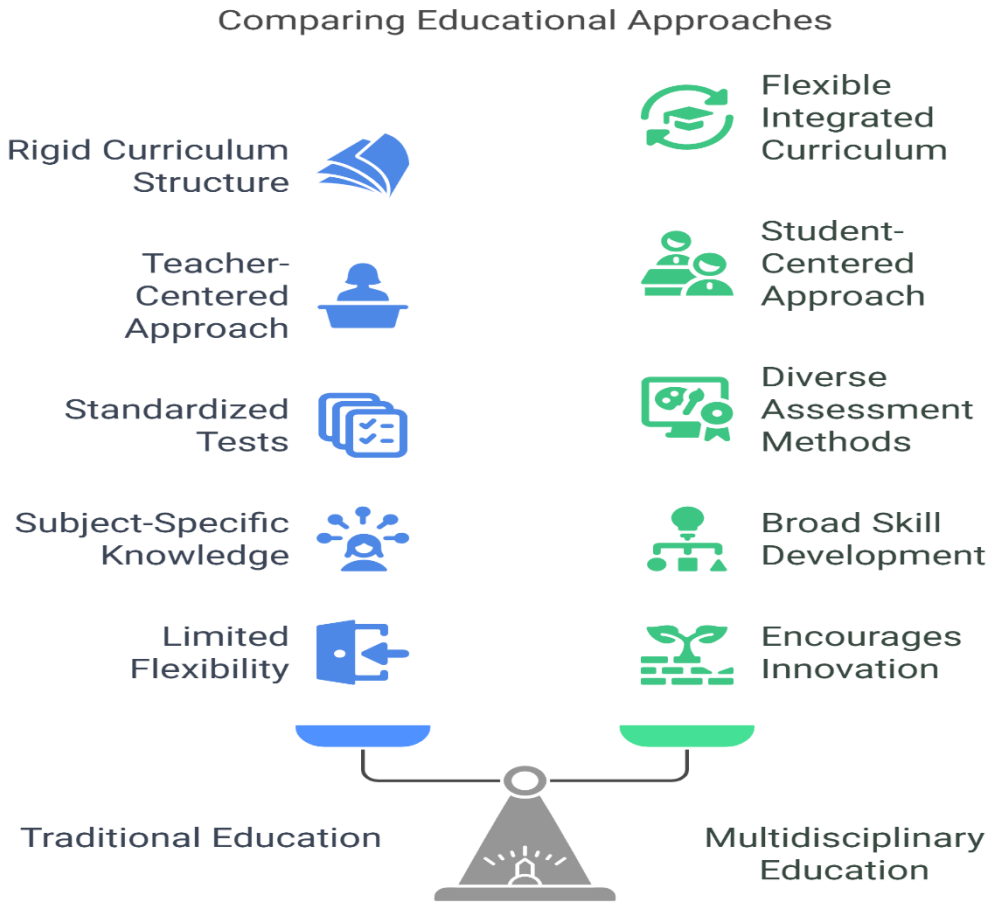

Fig 1: Comparing traditional and multidisciplinary education

Relevance of Multidisciplinary Education

The importance of multidisciplinary education is not limited to the 21st century; its value has been recognized since ancient times. The concept of multidisciplinary education has deep roots

in India, which is evident from its presence in ancient institutions like Takshashila and Nalanda. The multidisciplinary approach and holistic assessment have transformed not only the perspective of contemporary Indian education but also the broader landscape of higher education. The concept of multidisciplinary education finds strong roots in India's past, as evidenced by the comprehensive learning offered at ancient institutions like Takshashila and Nalanda, and the integration of various disciplines within its extensive literary traditions. Classical Indian texts, such as Banabhatta's *Kadambari*, portrayed quality education as encompassing the 64 *Kalaas* or arts. Education covered diverse areas, including artistic expression (singing, painting), scientific inquiry (chemistry, mathematics), practical skills (carpentry, textiles), professional training (medicine, engineering), and essential communication abilities (discussion, debate). According to Indian tradition, the term 'arts' should be applied to all forms of human creativity, from mathematics and science to practical and interpersonal skills. This idea of a 'knowledge of many arts,' commonly referred to as the 'liberal arts' in modern education, needs to be revitalized in the Indian education system. Such an approach aligns perfectly with the educational needs of the 21st century (Sharma et.al, 2024). The Yash Pal Committee Report (2009) highlighted the crucial need for multidisciplinary education in modern society. It stated that "students, especially at the undergraduate level, must be exposed to various disciplines" (Yash Pal, 2009, p. 21). The report advocated for a fundamental shift in conventional educational practices by underscoring the significance of multidisciplinary learning. In this modern society, every student should gather knowledge of various disciplines so that they can solve a problem with the various sources of discipline. Therefore, the Indian education system emphasizes multidisciplinary education. A multidisciplinary approach helps to study a single topic from more than one discipline. A multidisciplinary approach facilitates students to understand a topic as a whole or in a holistic view. Students get the opportunity to understand any problem, situation, lesson, and learning that has various dimensions. Scientifically it is proven that a multidisciplinary approach emphasizes on concrete development of the cognitive, psychomotor, and affective domains together. This approach is not only effective for students but teachers also benefit from it. NEP 2020 also mentioned multidisciplinary education from a different perspective. In this 21st century, Curriculum is developed following the multidisciplinary approach. With the help of this approach, students' critical thinking and communication skills develop properly and teachers also develop a teaching-learning process scientifically. It encourages teachers and students to think broad perspective on any matter so that they can achieve success in their professional world and survive in this modern society.

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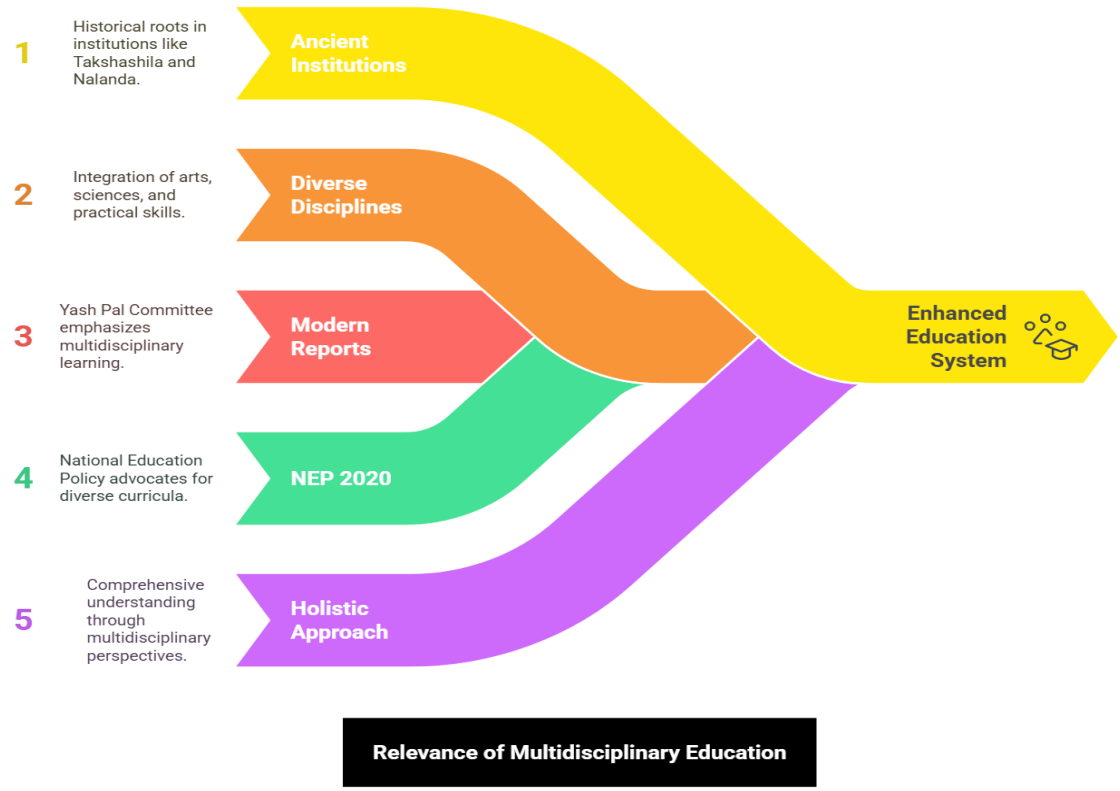

Fig 2: Relevance of Multidisciplinary Education

Multidisciplinary Approach in Higher Education in the Light of NEP 2020

Education is the primary tool for the all-round development of an individual. It helps human beings to develop rational thinking skills, creative thinking, scientific temper, empathy and compassion for others, and ethics and constitutional values. In this modern scenario, the Indian education system plays a significant role in competing at the international level. Therefore, The NEP 2020 is a visionary framework designed to transform India's education system. A significant focus of this policy is promoting a multidisciplinary approach to learning. With the introduction of the NEP 2020, India has made significant progress in modernizing its education system. This approach focuses on fostering holistic development by encouraging the exploration of diverse fields of knowledge. The proactive measures taken by the Government of India to implement a multidisciplinary higher education system significantly benefit students in higher education by enhancing their learning experience. Integrating multidisciplinary approaches within the higher academic framework enables students to gain a broader and enriched understanding by exploring diverse perspectives and interconnected themes on a given subject (Parasar,2023). The main purpose of National Education Policy 2020 is to "ensure inclusive and equitable quality education and promote lifelong learning opportunities

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for all" (MHRD, 2020, p. 3). NEP 2020 focuses on the multidisciplinary approach because of technological advancement and globalization. The International Bureau of Education provides three teaching-learning approaches i.e. interdisciplinary approach, transdisciplinary approach, and multidisciplinary approach. These approaches facilitate students to solve a problem with the help of different disciplines. Students can form a single concept from more than one discipline. The interdisciplinary approach combines two or more distinct subjects or fields of knowledge to address and solve problems. This integration allows students to approach challenges from multiple perspectives, finding solutions beyond the limitations of a single discipline. The fundamental principles of interdisciplinarity revolve around the three "C's": Collaboration, Cooperation, and Communication among disciplines to tackle a specific issue (Klein, 1993). The transdisciplinary approach goes beyond disciplinary boundaries, merging diverse subjects to create new knowledge. By integrating concepts from different fields, this approach enables learners to explore and connect with new domains of understanding. The multidisciplinary approach has been an integral part of the teaching-learning process since the ancient Gurukul system in India and remains crucial in today's educational landscape. It involves the integration of various disciplines and perspectives to explore a concept, theme, or topic. In this approach, a single topic is examined through multiple disciplinary lenses, enriching the depth and breadth of learning (Nirmal, 2024). As India's economy and society increasingly shift towards a knowledge-driven model, the demand for higher education is expected to grow. To address this, the proposed education policy aims to expand multidisciplinary higher education rather than focusing solely on specialization, aligning with the envisioned higher education system. The 66-page policy document emphasizes that providing multidisciplinary education through higher education institutions is a fundamental aspect of the restructured higher education framework (Gore, 2022). The NEP 2020 emphasizes the reintroduction of the concept of "knowledge of multiple arts" into the education system. Integrating the Humanities into STEM education leads to the development of key skills such as creativity, problem-solving, communication, and teamwork while also promoting social and moral consciousness and boosting student interest and pleasure in learning.

Recommendations of NEP 2020 regarding multidisciplinary approach in higher education are discussed below:

- **Recommendation on restructuring higher education institutions**

According to NEP 2020, higher education institutions should be turned into multidisciplinary institutions. At present, all higher education institutions in India are almost single-disciplinary institutions, for example, medical colleges, engineering colleges, education colleges, etc. Currently, Indian universities primarily handle postgraduate studies, while most affiliated colleges offer only undergraduate degrees, often in a single subject. This narrow approach to college education, with limited postgraduate offerings, has been criticized by government committees, such as the Yash Pal Committee (2009) (Nirmal,2024). NEP 2020 mentions that large multidisciplinary higher education institutions will be established near every district by 2030. We can say that this is the most significant recommendation of NEP 2020. A multidisciplinary institution introduces multiple departments and innovative programs for students to acquire standard knowledge. It ensures that these innovative programs follow both multidisciplinary and interdisciplinary approaches. In line with the NEP 2020 vision, all

affiliated colleges are expected to achieve autonomous, multidisciplinary, degree-awarding status by 2035. To facilitate this, a strategic plan must be developed, offering options for colleges to transition independently, through collaboration, or as part of a university. To achieve degree-awarding status, affiliated colleges must evolve into either standalone, comprehensive autonomous colleges or collaborate in clusters to form larger, multidisciplinary HEIs. NEP 2020 presents three broad categories of multidisciplinary higher education institutions:

I. Multidisciplinary research-intensive universities (RUs)
II. Multidisciplinary teaching-intensive universities (TUs)
III. Degree-awarding multi-disciplinary autonomous colleges (smaller than a university)

The Student Capacity of RU & TU Universities will be limited to 3000 or more. To promote multidisciplinary education, NEP 2020 calls for the creation of MERUs (Multidisciplinary Education and Research Universities), public institutions that will provide a comprehensive education similar to IITs and IIMs, and set the national standard for this type of learning (Bhusan, n.d.).

❖ **Restructuring Structure, Curriculum, Assessment**

The policy advocates for a multidisciplinary approach in all undergraduate programs, including technical and vocational courses, to ensure holistic student development and equip them with essential 21st-century skills. It recommends that science students gain exposure to the Humanities, while Humanities students should develop an understanding of science. Furthermore, both groups should acquire soft skills and practical vocational knowledge to enhance their overall competencies (Walia,2023). To support multidisciplinary studies, the policy suggests establishing departments across diverse areas, from the humanities and arts (languages, literature, music) to the sciences and social sciences (mathematics, sociology, economics). Section 11.5 of NEP 2020 introduces a multiple entry-exit system in higher education institutions, addressing the rigidity of traditional academic structures. Currently, undergraduate (UG) programs span three years, while postgraduate (PG) programs last two years. Students must successfully progress from the first to the second and third years within the designated timeframe. Under the choice-based credit system, some flexibility exists, allowing students to advance if they accumulate the required minimum credits per semester or year. This flexibility enables UG program completion within an extended timeframe if needed. Upon earning the required credits, students receive a degree, facilitating their transition into the job market or further studies at the PG level. However, the conventional system allows only a single entry and exit point at both UG and PG levels (Kamala,2023). The policy states that Science, Vocational subjects, and skills collaborate with arts and humanities. To successfully implement the proposed changes, we need to support imaginative and adaptable curricula that enable students to explore interdisciplinary studies through creative subject combinations. The University Grants Commission (UGC) guidelines allow students to customize their education by choosing a core course within their specialization, completing two Ability Enhancement Compulsory Courses (AECC), at least two Skill Enhancement Courses (SEC), and selecting four papers from both Discipline Specific Electives and Generic Electives. Besides that,

Students get the opportunity to continue their study through online mode. the policy emphasizes regular formative assessment to measure students' progress.

- **Recommendation of Quality based teaching and research**

NEP 2020 emphasizes quality-based teaching and research advocacy. The NEP-2020 expects multidisciplinary HEIs to offer "high-quality teaching, research, and community engagement" (MHRD, 2020, p. 34). Multidisciplinary colleges and universities enhance multidisciplinary research at graduate, master's, and doctoral levels. For enriching quality-based research the policy recommends that one Education department will be established in colleges/Universities/ HEI. According to NEP 2020, Education Departments must create education experts (Section 15.6), and all PhD students must take education courses to develop teaching skills (Section 15.9), preparing them for potential academic careers. NEP 2020 (NEP-2020) eliminates the Master of Philosophy (M.Phil.) research degree. However, it encourages multidisciplinary Higher Education Institutions (HEIs) to offer research opportunities at both the undergraduate (UG) and postgraduate (PG) levels. Students who complete a four-year UG degree with a research component or a PG degree are eligible to pursue a Ph.D. To ensure quality education, each institution must develop an Institutional Development Plan (IDP) (Nirmal,2024).

- **Recommendation on Teacher Education**

The NEP 2020's recommendation for a multi-disciplinary approach to teacher training is expected to be a key factor in transforming higher education and driving India's future development. The NEP 2020 teacher education policy results from a deliberate process by the drafting committees, which included considering varied opinions, practical knowledge, expert advice, and international best practices (Jadhav, 2022). To successfully implement the holistic and multidisciplinary education envisioned, teachers need to be proficient in multiple subjects. Given that many Indian teachers lack this training, the government must prioritize investing in their development and providing them with the resources necessary for effective multidisciplinary teaching (Yadav & Abhinandan,2023). The minimum qualification for school teachers is set to rise to a four-year integrated Bachelor of Education and subject-specific degree by 2030. Universities with a broad range of subjects will provide these combined degrees (Section 15.5). In addition to the four-year integrated B.Ed., universities will offer two-year B.Ed. programs for existing bachelor's degree holders, and one-year B.Ed. programs for those with four-year undergraduate degrees. According to NEP, the Scholarship will be provided to meritorious students of 4year, 2year, and 1year B.ED. Programmes. Teacher education institutions will seek and retain faculty with expertise in social sciences relevant to schooling (like psychology, child development, and sociology), as well as in specific education fields (science, math, social science, and language education). This will enhance the multidisciplinary training of teachers and ensure strong theoretical foundations (Section 15.8). A multidisciplinary approach to teacher education cultivates critical thinking, problem-solving, and flexibility, empowering educators to think creatively and equip their students with the ability to solve problems unconventionally.

Challenges of Implementing Multidisciplinary Education

National education policy thinks that ancient education policy was an effective method for multidisciplinary educational institutions in India. So, NEP 2020 supports a multidisciplinary approach influenced by ancient educational universities like Takshashila, Nalanda, Vallabhi, and Vikramshila. However, the NEP 2020 recommendation faces many challenges in its implementation. A discussion of the challenges includes the following perspectives-

- **Restructuring Multidisciplinary Institution**

According to the last report of the All-India Survey on Higher Education (AISHE), 2021-2022 mentions that there are 1168 universities in the country today, including both public and private,45,473 colleges and 12,002 stand-alone institutions were registered. "But 1162 universities,42,825 colleges, and 10,576 stand-alone institutions have responded to the survey. There are 655 general, 192 Technical, 57 Agriculture & Allied, 79 Medical, 27 Law, 19 Sanskrit, and 8 Language Universities and other specialized universities that are challenging to transform into multidisciplinary universities". Technological universities are now required to incorporate subjects like health, humanities, and social sciences. This necessitates a restructuring of all universities, including those specializing in agriculture, health, and languages. A significant obstacle is the lack of available resources, both physical and personnel, compounded by long-standing faculty vacancies.

- **Difficulties to Bridge between Institutions**

NEP 2020 suggests to bridge between govt, aided & private colleges. However, in the case of grouping colleges institutions face difficulties in maintaining proper activity (such as records of students who take admission, division of course fees, exam fees, and other charges) between different management boards of colleges.

- **Challenges regarding multi-level entry and multi-level exit**

A New Education Policy allows students can leave the institution for 1 year or 2 years of studying instead of completing 4 years of a bachelor's degree and they can also join the program again to complete the rest of the years. According to NEP 2020, there will be 3 years of degree courses and 4 years of degree courses with research. Those students who complete 4 years of degree courses will have to do one year of postgraduate degree. In this case, colleges easily adapt to the new education system but universities will face challenges due to their predominantly two-year master's programs. If universities want to provide flexibility in multi-level entry and multi-level exit, all courses will be restructured.

- **Difficulties regarding subject choosing, credits & Research**

As per NEP 2020 students will get the freedom to select subjects. So, students frequently choose scoring subjects so that they can earn enough credits. It is shown that students do not think about the usefulness of the subjects they are only concerned about the marks and credits. As a result, students do not gather proper knowledge and do not apply it practically. Research always plays a significant role in higher education. NEP 2020 emphasizes 4 years of degree courses with research. So, students are directly promoted to Ph.D. degrees. For this, Suitable infrastructure, well-trained teachers, and proper resources are required but Still India has no

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proper resources to form multidisciplinary approaches. Therefore, students face such kind of challenges.

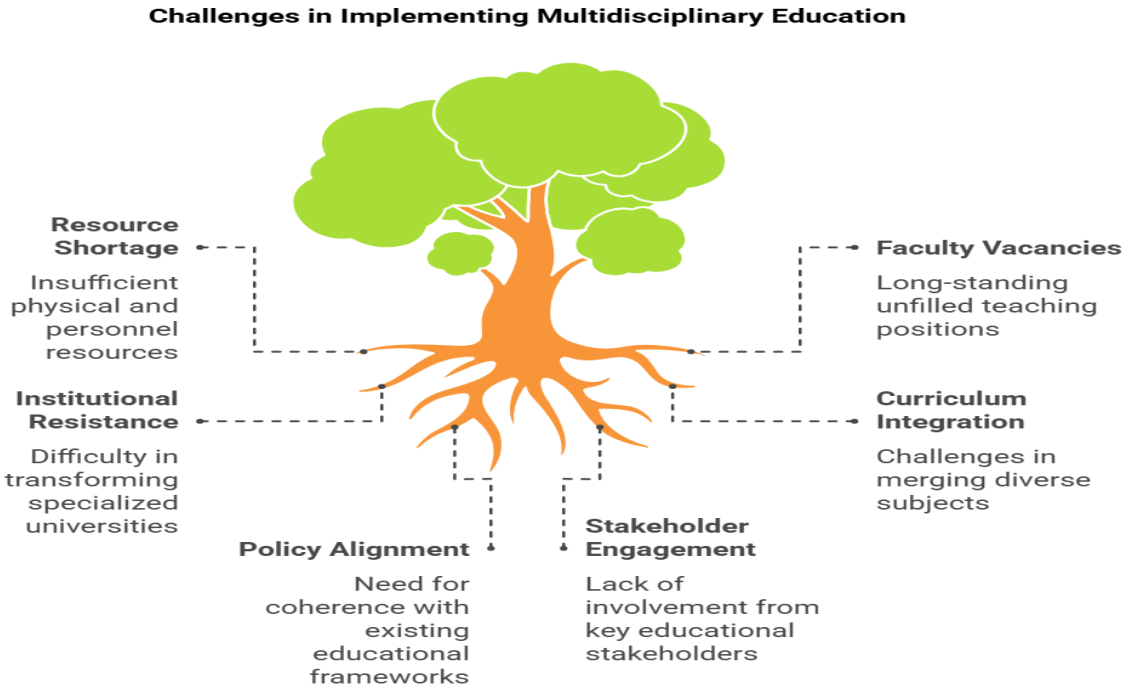

Fig. 3: Challenges in Implementing Multidisciplinary Education

Discussion

This research analysed existing qualitative data to understand the National Education Policy (NEP) 2020, specifically its emphasis on holistic and multidisciplinary education. Essentially, a multidisciplinary approach provides students with opportunities to achieve deeper learning by examining educational content from multiple integrated perspectives (Ghatge & Parasar,2024). Ancient Gurukuls provided a multidisciplinary education, fostering holistic learning through subjects such as astronomy, medicine, and politics. Students gained practical experience and diverse knowledge. The NEP 2020 advocates for a similar approach in contemporary higher education, drawing inspiration from the success of ancient Indian universities like Nalanda and Takshashila, which also thrived on multidisciplinary teaching (Roy, 2022). This research paper examines NEP 2020's emphasis on multidisciplinary education for the 21st century. Researchers analyze the NEP 2020 recommendations regarding multidisciplinary education and describe the obstacles faced by learners, teachers, the government, and the administration.

Conclusion

Education that combines multiple disciplines, and especially education that blends them into a unified whole, is crucial for developing solutions to society's problems. The Indian

government, through its NEP 2020, has adopted multidisciplinary education, an approach that encourages students to see how different subjects relate and contribute to a fuller understanding. The NEP 2020 enables India to enhance its educational system by adopting a multidisciplinary approach, which is vital for tackling complex issues and ensuring its global economic standing (Krishnaveni & Purusotham,2023). The Gurukul system of ancient India demonstrated multidisciplinary education, and the New Education Policy provides an opportunity to implement it today. It is a difficult task to implement it. The paper discusses the challenges that face the institution, students, and teachers. Researchers mention multidisciplinary universities that NEP 2020 recommends, NEP 2020 outlines how Higher Education Institutions will integrate knowledge from various disciplines. The COVID-19 pandemic has demonstrated the crucial role of multidisciplinary education in tackling global crises. By bringing together diverse fields of study, we can gain a comprehensive understanding of complex issues and develop effective solutions through collaborative research.

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TAGORE'S GURUKUL VS. CHATGPT: A COMPARATIVE STUDY OF RABINDRANATH TAGORE'S EXPERIENTIAL LEARNING AND AI-ERA EDUCATION

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ABSTRACT

This study interrogates the adaptability of Rabindranath Tagore's experiential learning model—rooted in India's Gurukul tradition and emphasizing creativity, nature, and mentorship—to an era dominated by AI tools like ChatGPT. Through a comparative analysis of Tagore's pedagogical principles (drawn from primary texts and scholarly critiques) and contemporary EdTech trends, supplemented by case studies of hybrid initiatives at Visva-Bharati University, the research evaluates synergies and tensions between humanistic education and algorithmic efficiency. Findings reveal that while AI enhances personalized learning and global collaboration, echoing Tagore's vision of a "world classroom," it risks perpetuating biases, eroding empathy, and exacerbating digital inequities, mirroring colonial-era disruptions of indigenous pedagogies. The study argues for a balanced integration where AI supplements, rather than supplants, experiential and ethical learning, prioritizing teacher-student relationships and ecological awareness. By proposing a "digital Shantiniketan" framework, this work contributes to decolonial discourse, advocating for culturally rooted, equitable education that harmonizes technological innovation with Tagore's enduring ideals of holistic human development.

***Keywords**:* Experiential learning, Tagorean pedagogy, AI in education, ethical technology, digital divide, decolonial education.

Introduction

The digital transformation of education, accelerated by artificial intelligence (AI) tools like ChatGPT and virtual learning platforms, has sparked global debates about the future of pedagogy. While proponents herald these technologies as democratizing access to knowledge (Zawacki-Richter et al., 2019), critics warn against the erosion of humanistic values, such as creativity and empathy, in favour of efficiency-driven, standardized models (Nussbaum, 2010). *This tension invites a re-examination of alternative educational philosophies, particularly those emphasizing experiential and holistic learning.* Among these, Rabindranath Tagore's (1861–1941) pedagogical vision—rooted in the ancient Indian Gurukul tradition but reimagined through his experimental school at Santiniketan and Visva-Bharati University—offers a compelling framework. *Tagore's model prioritized learning through lived experience, fostering intellectual, artistic, and ecological awareness in harmony with nature* (Tagore, 1917; O'Connell, 2002). Yet, as AI-driven platforms like ChatGPT redefine teacher-student dynamics

and access to information, a critical question arises: *Can Tagore's experiential learning principles adapt to the digital age without compromising their core humanistic ideals?*

Tagore's educational philosophy emerged as a critique of colonial-era rote learning, which he condemned as a *"factory of mind-forging"* (Tagore, 1933, p. 72). At Santiniketan, students learned under open skies, engaged in agrarian work, and participated in communal artistic practices, embodying Tagore's belief that education should *"make life in harmony with all existence"* (Tagore, 1917, p. 10). Scholars like Dasgupta (2007) and O'Connell (2002) have framed this approach as a precursor to modern experiential and place-based education, emphasizing its focus on sensory engagement and moral development. However, contemporary EdTech trends, such as algorithmically personalized learning (Luckin et al., 2022) and AI tutors, challenge these ideals by prioritizing scalability over the relational, context-specific mentorship central to Tagore's Gurukul-inspired model (Biesta, 2013). The existing literature on Tagore's pedagogy largely overlooks its intersection with digital technology. While studies like Mukherjee's (2014) analysis of Tagore's *"global village"* concept acknowledge his forward-thinking ethos, they do not address how AI might reshape his vision. Conversely, critiques of EdTech, such as Selwyn's (2022) caution against *"solutionist"* overreach, rarely engage with non-Western educational philosophies.

Purpose of the Study

This paper bridges the gap by interrogating the compatibility of Tagore's model with digital tools, drawing on empirical case studies of hybrid learning initiatives at Visva-Bharati and global experiments with AI in creative education. It argues that while AI cannot replicate the embodied, nature-centric learning Tagore championed, strategic integrations—such as using ChatGPT to augment (not replace) creative mentorship—could preserve his humanistic goals while addressing 21st-century inequities like the digital divide (UNESCO, 2020). This study contributes to broader discourse on decolonizing EdTech and reimagining digital pedagogy through pluralistic, culturally rooted frameworks.

Methodology and Data Sources

This study employs a mixed-methods approach, integrating qualitative textual analysis, comparative case studies, and policy review to evaluate the adaptability of Tagore's experiential learning model to AI-driven education. The methodological framework begins with a hermeneutic analysis of Tagore's primary works—such as *My School* (1917) and *The Religion of Man* (1933)—alongside scholarly critiques of his pedagogy (e.g., O'Connell, 2002; Das Gupta, 2009) to distill core principles like holistic development and ecological harmony. These principles are then juxtaposed with contemporary EdTech trends through a systematic review of peer-reviewed research on AI in education (e.g., Kasneci et al., 2023; Zhai, 2023), focusing on themes like personalization, creativity, and equity. Case studies of hybrid learning initiatives at Visva-Bharati University, drawn from institutional reports and ethnographic accounts, provide empirical insights into blending digital tools with Tagorean values. To contextualize socio-technical challenges, the study incorporates global data on digital divides from UNESCO (2023) and ITU (2023), alongside policy documents such as India's National Education Policy (2020). Ethical considerations, including AI bias and cultural representation,

are examined using critical discourse analysis of ChatGPT's outputs, guided by frameworks like Biesta's (2013) *risk-based pedagogy*.

The Gurukul System – A Foundation of Experiential Learning

The Gurukul system, an ancient educational model originating in the Vedic period (circa 1500–500 BCE), served as India's primary pedagogical framework for millennia. Rooted in the principle of *Gurukula* (literally *"family of the teacher"*), this residential system required students (*shishyas*) to live and learn in *ashrams* under the mentorship of a *guru* (Scharfe, 2002). The curriculum harmonized intellectual rigor with practical wisdom, encompassing Vedic scriptures, philosophy, mathematics, astronomy, and martial arts, alongside agrarian practices and communal living (Mookerji, 1989). Unlike modern compartmentalized education, the Gurukul emphasized *experiential learning*—knowledge was not merely transmitted but lived. As historian Radha Kumud Mookerji observed, *"The Gurukul was not a school but a way of life, where learning flowed from the guru's lived example and the student's immersion in nature"* (Mookerji, 1989, p. 18).

Central to the Gurukul's efficacy was its *personalized and holistic pedagogy*. Gurus tailored instruction to individual aptitudes, fostering critical thinking through dialogue (*shastraarth*) rather than rote memorization (Altekar, 1944). Moral and ethical development (*sanskar*) was prioritized, with students internalizing values like discipline (*niyam*), humility (*vinaya*), and service (*seva*) through daily rituals and collaborative labor (Sharma, 2000). For instance, tending crops or maintaining ashram infrastructure taught self-reliance and ecological stewardship, principles later echoed in Tagore's Visva-Bharati (O'Connell, 2002).

The Gurukul system's decline began during British colonial rule in the 19th century. Colonial administrators, such as Thomas Babington Macaulay, dismissed indigenous education as *"backward"* and imposed a Western-style, examination-centric model through the 1835 English Education Act (Dharampal, 1983). This shift marginalized the Gurukul's relational and context-specific pedagogy, reducing education to a tool for bureaucratic training rather than holistic development (Kumar, 2015). By the early 20th century, fewer than 5% of Indian villages retained functional Gurukuls, as documented in the 1882 Hunter Commission Report (Nurullah & Naik, 1951).

Despite its erosion, the Gurukul's legacy persists in contemporary debates on education reform. Scholars like Krishna Kumar (2015) argue that its emphasis on *embodied learning*—where knowledge emerges from sensory engagement with one's surroundings—prefigures modern theories of situated cognition (Lave & Wenger, 1991). Meanwhile, institutions such as the Bhandarkar Oriental Research Institute have revived Gurukul-inspired programs, blending traditional mentorship with digital tools to teach Sanskrit and philosophy (UNESCO, 2021). These adaptations underscore the system's enduring relevance, offering a counterpoint to industrialized education while illuminating pathways to integrate experiential values into digital-age pedagogy.

Tagore's Shantiniketan – Reimagining Experiential Learning

Rabindranath Tagore (1861–1941) established Shantiniketan in 1901 as a radical alternative to the rigid, colonial-era education system in India. Inspired by the Gurukul tradition yet critical

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of its hierarchical constraints, Tagore envisioned an institution where learning was *"a part of life itself, not merely a preparation for it"* (Tagore, 1917, p. 45). Located in rural Bengal, Shantiniketan emphasized harmony with nature, artistic expression, and collaborative inquiry, rejecting rote memorization in favour of *experiential pedagogy*.

i. Pedagogical Innovations

Tagore's model centered on open-air classrooms, where students engaged with their natural surroundings as a dynamic curriculum. He famously declared, *"Do not confine your children to your own learning, for they were born in another time"* (Tagore, 1933, p. 89), advocating for education that nurtured creativity and critical thinking. Classes under mango trees, seasonal festivals, and daily *sangeet sabhas* (music gatherings) exemplified his belief that art and nature were essential to intellectual growth (O'Connell, 2002). The curriculum blended indigenous knowledge with global perspectives—Sanskrit poetry coexisted with East Asian calligraphy, reflecting Tagore's vision of Visva-Bharati (established in 1921) as a "*world university*" (Das Gupta, 2009).

ii. Legacy of Luminaries

Shantiniketan's alumni include Nobel economist Amartya Sen, who credited the institution for fostering his *"argumentative identity"* through debates on ethics and social justice (Sen, 2021, p. 78). Filmmaker Satyajit Ray, another alumnus, attributed his interdisciplinary creativity to Shantiniketan's immersive arts education (Robinson, 1989). These outcomes underscore Tagore's success in cultivating independent thinkers, a stark contrast to colonial education's focus on bureaucratic conformity (Kumar, 2005).

iii. *Adaptability to Modern Contexts*

Tagore's model, while rooted in early 20th-century agrarian society, offers principles adaptable to digital education. His emphasis on *relational learning*—where teachers act as mentors rather than authoritarian figures—resonates with heutagogical theories that prioritize learner agency (Hase & Kenyon, 2013). Contemporary experiments, such as hybrid courses combining online platforms with nature-based projects, echo Shantiniketan's ethos (UNESCO, 2021). For instance, AI tools like ChatGPT could augment creative writing workshops, provided they supplement—not replace—the human mentorship Tagore valued (Biesta, 2013).

Shantiniketan's legacy lies in its demonstration that education can transcend institutional walls to embrace life itself. *As digital technologies reshape learning, Tagore's integration of tradition and innovation offers a blueprint for balancing technological advancement with humanistic values.*

The Digital Age and ChatGPT – Opportunities and Challenges

The digital transformation of education, accelerated by generative artificial intelligence (GenAI) tools like ChatGPT, has redefined pedagogical paradigms. Launched by OpenAI in November 2022, ChatGPT's capacity to simulate human dialogue, curate personalized learning resources, and provide real-time feedback positions it as a disruptive force in education (Kasneci et al., 2023). Studies demonstrate its efficacy as a virtual tutor, particularly in STEM fields (Science, technology, engineering, and mathematics), where it adapts problem

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complexity based on learner progress (Zhai, 2023). For instance, programming students using AI tutors showed a 22% improvement in code accuracy, as algorithms identified and addressed individual knowledge gaps (Sarsa et al., 2022). Such capabilities align with Tagore's ideal of *individualized mentorship*, suggesting AI could democratize access to tailored instruction (Biesta, 2013). ChatGPT's generative potential extends beyond content delivery. It can simulate Socratic dialogues, enabling learners to debate ethical dilemmas or historical events interactively (Farrokhnia et al., 2024). Similarly, its ability to generate multilingual poetry or art critiques could enrich Tagore's interdisciplinary approach, bridging Shantiniketan's emphasis on creativity with global digital collaboration (UNESCO, 2021). Platforms like Khan Academy already integrate AI tutors to provide *"mastery learning,"* a concept resonating with Tagore's belief in self-paced, curiosity-driven education (Khan, 2024; Tagore, 1933).

However, ChatGPT's limitations mirror the vulnerabilities of earlier pedagogical shifts, such as the colonial dismantling of the Gurukul system. Its outputs risk perpetuating biases embedded in training data—a study found that 34% of ChatGPT's responses to cultural queries reinforced Western-centric narratives (Baidoo-Anu & Ansah, 2023). Additionally, over-reliance on AI risks reducing education to transactional exchanges, eroding the empathetic teacher-student relationships central to both Gurukuls and Shantiniketan (Dharampal, 1983; Kumar, 2005). Ethical concerns, such as plagiarism and diminished critical thinking, further underscore the need for governance frameworks (UNESCO, 2023).

Tagore's experiential model, which thrived on unstructured exploration and moral mentorship, challenges the AI-driven trend toward standardization. Yet, *strategic integrations may bridge this divide.* For example, ChatGPT could assist in drafting scripts for student-led plays at Visva-Bharati, freeing teachers to focus on emotional and ethical guidance (O'Connell, 2002). Conversely, nature-based modules—like ecological data analysis paired with fieldwork—could ground AI tools in tactile experiences, mitigating screen-time detachment (Louv, 2008). As historian Krishna Kumar warns, technology must serve pedagogy, not supplant it: *"The Gurukul fell to colonial efficiency; let us not repeat this with algorithmic efficiency"* (Kumar, 2015, p. 143).

Adapting Tagore's Model to the Digital Age

Tagore's experiential learning philosophy, while rooted in early 20th-century pedagogy, offers a resonant framework for integrating generative AI tools like ChatGPT into modern education. Below, researcher analyze synergies and propose evidence-based strategies for adaptation:

i. Personalized Learning: Bridging Guru-Shishya Dynamics

Tagore's insistence on *individualized mentorship*—where teachers tailored lessons to students' aptitudes—finds a digital counterpart in ChatGPT's adaptive capabilities. For example, AI can simulate Socratic dialogues, prompting learners to refine arguments through iterative questioning (Farrokhnia et al., 2023). This mirrors the *guru-shishya parampara* (teacher-disciple tradition), where knowledge emerged from personalized dialogue rather than lectures (Altekar, 1944). Platforms like Khan Academy's Khanmigo AI tutor already employ this approach, enabling self-paced mastery of subjects like mathematics while preserving human oversight (Khan, 2024).

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ii. Experiential Learning in Virtual Contexts

Shantiniketan's emphasis on *learning through doing* can be extended digitally. ChatGPT can simulate real-world scenarios, such as historical debates or ecological systems modeling, allowing students to test hypotheses interactively (Zhai, 2023). For instance, students might collaborate with AI to design a virtual greenhouse, integrating botany lessons with climate data analysis—akin to Shantiniketan's agrarian projects (Tagore, 1917). However, as Resnick (2017) cautions in *Lifelong Kindergarten*, digital tools must prioritize *creation over consumption* to avoid reducing experiential learning to passive screen time.

iii. *Fostering Creativity and Critical Thinking*

Tagore's disdain for rote memorization aligns with ChatGPT's potential to stimulate creativity. The AI can generate prompts for storytelling, poetry, or art critiques, much like Shantiniketan's *Bichitra* (creative workshops) (O'Connell, 2002). However, studies reveal risks: 41% of students over-relied on AI for essay drafting, undermining original thought (Walton Family Foundation, 2023). To mitigate this, teachers must frame ChatGPT as a *collaborator*, not an authority. For example, students could use AI to draft play scripts, then refine them through peer feedback and improvisation—echoing Tagore's emphasis on *communal creativity* (Sen, 2021).

iv. Ecological Awareness in Digital Spaces

While ChatGPT cannot replicate Shantiniketan's immersive natural environment, it can enhance ecological education. The AI can curate hyperlocal environmental data, guide virtual field trips, or model sustainability scenarios (e.g., simulating deforestation impacts) (UNESCO, 2023). These activities align with Tagore's belief that education should *"awaken a sensitivity to the rhythms of nature"* (Das Gupta, 2009, p. 112). Hybrid models, such as pairing AI-driven data analysis with outdoor fieldwork, could bridge digital and tactile learning (Louv, 2008).

v. Challenges and Ethical Considerations

ChatGPT lacks the empathetic guidance central to Tagorean and Gurukul pedagogy. As Biesta (2013) argues, education's *"beautiful risk"* lies in unpredictable human interactions, which algorithms cannot replicate. Only 34% of rural Indian households have internet access (ITU, 2022), excluding marginalized communities from AI-driven education. Tagore's localized, low-tech model at Shantiniketan highlights the need for equitable access. AI outputs may perpetuate cultural or gender biases, contradicting Tagore's pluralistic ideals (Baidoo-Anu & Ansah, 2023). As Biesta (2013) warns, AI risks reducing teachers to *"technicians."* Professional development must prioritize pedagogical autonomy, echoing the Gurukul *guru's* role as both mentor and moral exemplar. But, to harmonize Tagore's vision with AI, institutions must adopt *human-centered AI* frameworks. For example, UNESCO's (2023) *Guidance for Generative AI in Education* advocates for AI as a *"co-pilot"* rather than an autonomous authority—a principle Tagore would endorse.

A Modern Synthesis – Gurukul, Tagore, and ChatGPT

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A harmonized educational model, blending the Gurukul's mentorship traditions, Tagore's experiential ethos, and generative AI tools like ChatGPT, could manifest as a *"Digital Shantiniketan."* This framework would integrate AI as a supplementary resource within a holistic, nature- and community-centric pedagogy, grounded in three principles:

i. Project-Based Learning with AI Scaffolding

Drawing from Tagore's emphasis on *learning through creation*, schools could deploy ChatGPT to support interdisciplinary projects. For example, students designing a sustainable village might use AI to analyze climate data, draft grant proposals, or simulate crop yields, while teachers guide ethical discussions on equity and ecology (Resnick, 2017). Such an approach mirrors the Gurukul's synthesis of intellectual and practical skills, as seen in ancient *Vidyashram* curricula that combined astronomy with agrarian planning (Mookerji, 1989). Coding education, too, could adopt this model: ChatGPT's real-time debugging assistance aligns with Seymour Papert's constructionist theory, where coding is a tool for creative problem-solving (Papert, 1980).

ii. *Hybrid Communities: Digital Gurukuls*

Tagore's vision of *Visva-Bharati* as a *"meeting place of the world"* could extend into digital spaces. Platforms like Microsoft Teams or Moodle might host global student collaborations, such as co-writing plays or analyzing regional folklore, fostering intercultural dialogue akin to Shantiniketan's *Poush Mela* festivals (UNESCO, 2021). However, as Dillenbourg (2009) notes, successful online collaboration requires structured mentorship to avoid superficial engagement—a lesson from the Gurukul's emphasis on *guru-guided satsang* (master guided discourse) (Altekar, 1944).

iii. Critical AI Literacy and Ethical Guardrails

To prevent over-reliance on AI, teachers must cultivate *critical discernment*. For instance, students could compare ChatGPT's summaries of colonial history with primary sources from Dharampal's (1983) archives on pre-colonial Indian education, identifying biases or omissions. This aligns with Tagore's mandate for *svadhyaya* (self-study) and moral reflection (Tagore, 1933). The European Commission's (2022) *Ethical Guidelines on AI in Education* reinforces this, advocating for *AI systems that enhance—not replace—human judgment.*

A *"Digital Shantiniketan"* is not a utopian endpoint but an evolving praxis. By embedding AI within Tagore's humanistic framework—where technology amplifies creativity, criticality, and connection—education can resist the mechanistic traps that eroded the Gurukul. As Tagore wrote, *"The lamp of education must draw its oil from the soil of life itself"* (Tagore, 1917, p. 34). In an AI-driven age, that soil must nourish both roots and circuits.

Conclusion: Reconciling Roots and Innovation in the Digital Age

The journey from the Gurukul's ashrams to AI-driven classrooms underscores a timeless truth: education is not a static institution but a living, evolving dialogue between tradition and innovation. Rabindranath Tagore's experiential model, rooted in the Gurukul's holistic ethos yet refined through Shantiniketan's creative humanism, offers a resilient framework for navigating the digital age. Tagore's vision of education as a *"process of self-realization through*

communion with the world" (Tagore, 1933, p. 112) finds unexpected resonance in AI's potential to democratize personalized learning. ChatGPT's ability to simulate mentorship, generate creative prompts, and bridge global classrooms aligns with Shantiniketan's ideals of *Vishwa Bharati* (universal learning) (Das Gupta, 2009). Yet, as evidenced by the Gurukul's decline under colonial modernity, technological adoption risks perpetuating epistemic violence if divorced from cultural and ethical grounding (Kumar, 2015). The algorithmic biases embedded in ChatGPT's training data, for instance, threaten to replicate the colonial-era marginalization of indigenous knowledge systems (Dharampal, 1983; Baidoo-Anu & Ansah, 2023). To counter this, teachers must reimagine AI as a *tool for liberation rather than homogenization*. Hybrid models, such as pairing ChatGPT with community-based mentorship circles, can revive the Gurukul's emphasis on relational learning while addressing 21st-century inequities. For example, India's National Education Policy (2020) advocates blending AI with local language instruction—a Tagorean synthesis of global tools and regional identity (Government of India, 2020). Similarly, UNESCO's (2023) call for *"human-centered AI"* mirrors Tagore's warning against mechanized education: *"A mind all logic is like a knife all blade; it makes the hand bleed that uses it"* (Tagore, 1916, p. 67).

However, the path forward demands systemic reckoning. The digital divide—30% of rural students lack internet access in India (ITU, 2023)—echoes the colonial exclusion that eroded Gurukuls. Bridging this gap requires policy frameworks that prioritize infrastructure equity, teacher training, and culturally responsive AI design (UNICEF, 2021). Moreover, as Resnick (2017) argues in *Lifelong Kindergarten*, technology must amplify creativity, not standardize it. ChatGPT-generated art prompts, for instance, should inspire students to paint *their* landscapes, not replicate algorithmic aesthetics. But we must agreed that Tagore's model challenges us to view AI not as a disruptor but as an *amplifier of human potential*. Just as Shantiniketan's alumni, like Amartya Sen, harnessed interdisciplinary learning to address global inequities (Drèze & Sen, 2013), today's students might leverage AI to tackle climate crises or ethical AI governance. Yet, this demands a reclamation of education's moral purpose. As Biesta (2013) asserts, the *"beautiful risk"* of education lies in its capacity to nurture *subjectivity*—the ability to act independently in a complex world. In closing, the synthesis of Gurukul, Tagorean, and digital pedagogies is not merely an academic exercise but a societal imperative. By anchoring AI in the soil of experiential wisdom—where technology serves empathy, creativity, and justice—we honor Tagore's conviction that *"the highest education is that which does not merely inform but makes our life in harmony with all existence"* (Tagore, 1917, p. 45). The digital age need not eclipse the Gurukul's lamp; it can, with care, illuminate new frontiers.

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STATUS OF FOUNDATIONAL LITERACY & NUMERACY AMONG PRIMARY SCHOOL STUDENTS OF ODISHA

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ABSTRACT

Foundational literacy and numeracy skills are the essential for childhood education, contributing to academic achievement and social empowerment. This study examines the status of FLN among fourth grade students in government primary schools in the Cuttack district of Odisha, focusing on their proficiency levels, gender-based differences, and relationship between literacy skills and numeracy. Correlational research design was adopted involving 97 school students from six selected schools through cluster sampling. Self-developed tools assessed literacy skills, including reading comprehension, oral fluency, and writing as well as numeracy skills such as arithmetic operation, geometry, and measurements. The data were analysed using descriptive statistics, t-tests, and Pearsons corelation. The results indicate moderate proficiency in FLN, with notable gaps in advanced literacy (comprehension and expression) and numeracy (advanced reasoning). Girls outperformed boys in literacy while no significant gender differences were found in numeracy. A moderate positive corelation was identified between literacy and numeracy, highlighting their interdependence. The findings underscore the need for equity focused educational reforms, targeted teacher training, and innovative teaching practices to address disparities and improve foundational competencies.

***Keywords**:* Foundational Literacy, Numeracy, Primary School Students, Correlational design, Students' Proficiency.

INTRODUCTION

Foundational literacy and numeracy comprising to read, write, comprehend, and perform very basic numerical tasks are indispensable components of the development framework. Thes skills not only facilitate academic success but also empower individuals to engage actively in society, contributing to their personal wellbeing and the overall progress of their communities. The advent of the industrial revolution and subsequent educational reforms broadened access to literacy and numeracy, thereby addressing gaps in social equity and skills distribution (Awgichew,2022). In todays' digital age, new dimension of the literacy such as digital literacy, further amplify the role of foundational skills in navigating complex technological and social landscapes (Spink, Cloney, Berry, 2022). The theoretical frameworks provide critical insights into the development and importance of FLN. Vygotsky's socio-cultural theory posits that cognitive development is deeply embedded in social interactions, with language serving as

fundamental tool for communication and learning (Purpura, Hume, Sims & Lonigan, 2011). His works emphasizes the role of cultural and linguistic exchanges in shaping a child's ability to acquire literacy skills and numeracy skills. Similarly, Piaget's theory of cognitive development identifies the sensory-motor and preoperational stages as key phases where children construct foundational knowledge through interactions and with their environment (Pasnak et al., 2009).

In the Indian context the significant of FLN has been underscored by various policy initiatives. The National Policy of Education (1986) emphasised the holistic development of the children through foundational learning. More recently the national educational policy has set ambitious target aiming to achieve universal FLN by 2025 though establishment of National Mission on Foundational Literacy and Numeracy (NMFLN). Initiatives like NIPUN Bharat (2021) prioritise ensuring foundational skills by Grade 3, leveraging teacher capacity program, high quality learning materials, and digital tools to achieve these objectives (Kumar & Behera, 2022) Additionally, innovative programs such as Vidya Pravesh and Toy based pedagogy emphases experiential and play based learning method that can align with culturally relevant teaching practices (Vasoya & Vansdadiya, 2023).

LITERATURE REVIEW

Empirical studies farther illustrate the multifaceted factors influencing FLN. Research by Kumar & Ray (2023) highlights that socioeconomic background, parental education and school environment significantly effect a child's literacy and numeracy attainment. Family engagement and community involvement emerge as a critical enabler, fostering a supportive ecosystem for early learning (Ball & Govinda, 2014). In contrast, the COVID-19 pandemic exacerbated existing educational disparities, with students in rural and unprivileged settings experiencing substantial setbacks in achieving foundational competencies (Spink, Cloney, Berry, 2022). Globally studies reveal patterns and challenges in achieving FLN. Wong et al., (2020) observed that effective assessment practices in Singapore's primary schools significantly enhanced learning outcomes. In Australia, longitudinal research indicated gender -based differences, with girl excelling in literacy and boys progressing slightly faster in numeracy during the initial years of schooling (Meiers et al., 2006). In Malaysia, Md- Ali, Karim and Yusof (2016) identified the essential characteristics of effective educators, including structured pedagogy, strategic approaches, and robust content knowledge, as pivotal in driving FLN outcomes. The findings collectively underscored the universal importance of early and targeted interventions in addressing the liturgy and numeracy gaps. Evidences suggest integrating play based and digital learning approached significantly enhance students' engagement and learning outcomes (Vasoya & Vansdadiya, 2023). Additionally, teacher training program such as NISTHA 3.0, designed to equip educators with participatory and child centred pedagogical skills play a vital role in fostering effective FLN instruction (Awgichew,2022). Mastery of FLN is critical not only for academic progression but also for fostering problem-solving ability and critical thinking ability essential in today's global society.

RATIONALE

The body of international and national research highlights the significant impact of FLN on the cognitive development of children. Various studies have underscored that FLN skills are not only fundamental for academic achievement but also crucial for social empowerment

employability and personal wellbeing. The rationale of this study is therefore to explore the multi-faceted factors influencing foundational literacy and numeracy and contribute to the ongoing dialogue on how best to address these challenges in India. By examining the interplay of socioeconomic background. Teaching methodologies, and policies intervention, this research aims to offer insights that can inform both practice and policy. Although there are several studies and policy measures in existence, there are still considerable gaps in our understanding of FLN disparity at a regional level, particularly in Odisha. Hence, the gaps of the research are found in the fooling areas which has influenced the research interest of the investigators with a critical academic understanding.

Gap of Knowledge: National and international research has adequately explored FLN (Md-Ali, Karim, & Ray, 2023; Kumar & Behera, 2022), however, empirical data on FLN is limited regarding the specific socio-economic and educational context that situates Odisha. The study aims to respond to this gap by contextualizing the findings around FLN determinants in Odisha.

Gap of Variables: A major proportion of current research reviewed focused on isolated variables in FLN such as teaching practices, curriculum design, or socio-economic status (Spink, Cloney, & Berry, 2022; Vansdadiya & Vasoya, 2023); there are no empirical studies that examine this issue integrated model incorporating several variables such as the school building, gender, and inequalities inherent to policy. In this research the investigators looked at FLN using an integrated model.

Gap of Methodologies: Most literature discusses the use of survey methodologies or standardized assessments such as NAPLAN (Rothman & McMillan, 2003). In the same vein, there is very little literature that takes a mixed-method approach to encompass both quantitative and qualitative perspectives of teachers as well as students. In this research the investigators aimed to fill the gap of mixed-methodologies that articulate quantitative data and qualitative narrative about FLN. By addressing these gaps, the research intended to develop these gaps in knowledge through in-depth analysis of FLN development in the Cuttack district.

Further, the study aimed to identify all socio-economic, pedagogical and policy measures that generate insight into FLN and contribute to better educational interventions and policymaking in SDG 4.

STATEMENT OF THE PROBLEM

Foundational Literacy skills Numeracy skills are the fundamental building blocks of education encompassing essential skills in reading writing, and mathematics. This foundation skills are critical for academic success across all subjects and are essential for individuals to fully participate in society, pursue further education, and navigate everyday tasks effectively. Therefore, the study stated “Status of Foundational Literacy and Numeracy among Primary School Students of Odisha.”

OPERATIONAL DEFINITION

Foundational Literacy

Foundational literacy is defined in the study as fourth-grade students' levels of proficiency in reading comprehension, oral fluency, and written communication, measured through standardized assessment protocols.

Numeracy

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Numeracy is defined in this study as the competence of the primary school students in operations and concepts of arithmetic, geometric and measurement concepts, using a standardized assessment protocol.

Primary School Students

Primary School Students refers to children attending govt funded primary schools in the Cuttack district, Odisha, and is specifically referring to fourth-grade students. These children are representative of the sample population to determine FLN proficiency.

Correlational Design

A research approach used to study the statistical relationship between two or more variables without intervention or manipulation. A correlational design has been used in this study to assess the relationship between foundational literacy and foundational numeracy using Pearson's correlation coefficient, providing empirical evidence to assess the interrelationships of the two constructs.

Student Proficiency

In this study, student proficiency is operationalized as the assessed performance of fourth graders attending government primary schools located in the Cuttack district, in reading comprehension, oral fluency, writing, the ability to perform arithmetic operations, geometric reasoning, and measurement.

OBJECTIVES

1. To study the level of FLN among the primary school students of the Cuttack district
2. To compare the FLN score of students in relation to their gender.
3. To find out the relationship between Foundational Literacy skills and Numeracy skills of primary school students of Cuttack district.

HYPOTHESES

H_{01} There exist no significant difference between the mean score of foundational literacy in relation to their gender.

H_{02} There exist no significant difference between the mean score of foundational numeracy in relation to their gender.

H_{03} There exist no significant relationship between the foundation literacy and numeracy of primary school students of the Cuttack district.

DELIMITATIONS

i. The study is delimited to the government primary schools of Cuttack district.
ii. Sample are delimited to 4th-class students, teachers, and parents.
iii. Tools and techniques are delimited to the interview schedule and self-made numeracy literacy test.
iv. Foundational literacy tests are delimited to reading fluency, reading comprehension, and writing.
v. Foundational numeracy test delimited to pre-number concepts, shapes, spatial and measurement.

METHODS

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Correlational research design was used to assess the relationship between foundational literacy and numeracy among fourth-grade students. Further, the study utilised quantitative approaches to gather data. The study was investigated in Six government primary schools in the Cuttack district of Odisha. A total of 97 fourth-grade students, along with their teachers and parents participated in this study. Cluster sampling techniques was used to select student, while purposive sampling techniques was applied to select teachers and schools. Two self-made tests were developed to access literacy skills and numeracy skills. The data analysis was performed using descriptive and inferential statistical techniques, including the t-test and Persson's correlation to examine the relationship between literacy skills and numeracy skills.

RESULTS

Status of foundational literacy among government primary school students

Table: status of foundational literacy

Question no.	Question type	Mark obtained by students with frequency & percentage										
		0	1	2	3	4	5	6	7	8	9	10
1	Paragraph reading and answering question	14 (14.43 %)	12(12.37 %)	9(9.27%)	15(15.46%)	16(16.49 %)	31(31.95 %)					
2	Writing 5 sentences by watching picture	21(21.24 %)	9(9.27%)	8(8.24%)	12(12.37%)	24(24.74 %)	23(23.71 %)					
3	Written test	9(9.27 %)	3(3.09%)	7(7.21%)	11(11.34%)	12(12.37 %)	14(14.43 %)	8(8.24 %)	6(6.18 %)	6(6.18 %)	13(13.40 %)	8(8.24)
4	Oral test	8(8.245 %)	2(2.06%)	10(10.30 %)	26(26.80%)	26(26.80 %)	25(25.77 %)					

The analysis of the data indicates that the foundational literacy assessment comprising four items with a total of 25 marks, reveals variations in students' abilities. In item 1 (reading comprehension, 5 marks), 31.95% of students achieved full marks, showcasing strong reading proficiency, while 16.49 scored 4 marks, indicating good comprehension. However, 29.73% scored 2 or fewer marks, reflecting significant gaps in reading reading skills. In item 2 (picture description, 5 marks) 23.71% of students scored full marks, demonstrating excellent expressive

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abilities, while 21.64% scored 0, highlighting poor linguistics and writing skills. In item 3 (listening & writing, 10 marks), 32.98% achieved full marks, pointing to strong listening and writing proficiency, while 22.68% scored 3 or fewer marks, exhibiting challenges in comprehension and transcription. At last, in item 4 (oral reading, 5 marks) 25.77% demonstrated excellent reading skills while 8.24% scored 0. Indicating a lack of foundational literacy. These results underscored the urgent need for targeted interventions to address disparities in foundational literacy and linguistics skills.

Status of foundational numeracy among government primary school students

Table: foundational numeracy

Question number	**Question type**	**Total correct answer given by students**	
		Numbers	Percentage (%)
1,2,3,7,20	addition	80	82.47
4,5,6,8	subtraction	44	45.36
9	watch	60	61.85
10	weight	75	77.31
11, 15	geometry	82	84.53
13,14,24	division	38	39.17
16,17	Number system	57	58.76
12,18,23	multiplication	55	56.70
19	Addition & division	24	24.74
21,22	Measurement of unit	22	22.68
25	Addition & subtraction	45	46.39

The foundational numeracy test included 25 items, covering various mathematical concepts (addition, subtraction, multiplication, division, number system, geometry, a unit of measurement, and applied concepts). Among these, 82% of students correctly answered the addition questions (items 1,2,3,7,20), while 18% did not perform. Subtraction (items 4,5,6,8) was correctly solved by 45%, and 55%, and time reading (item 9) had a 61% success rate. Weight comparison (item 10) was correct for 77% and geometry (items 11, 15) was answered correctly by 84%. However, division (13, 14, 24) had accuracy, and multiplication (items 12, 18, 23) saw 56% correct answer. Number systems (items 16, 17) were understood by 58% while 24% succeeded in addition and substruction (item 19). Measurement (Items 21, 22) was correctly answered by only 22%, and 46% succeeded in combined addition and subtraction. (item 25). Further, this result highlights significant gaps, particularly in subtraction, division, and measurement.

Level of FLN among the Government primary school students of Cuttack district

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	N	Range	Minimum	Maximum	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
Literacy	97	24	2	26	14.87	.695	6.849	-.154	.245	-1.124	.485
Numeracy	97	51	3	54	14.61	.697	6.869	1.862	.245	10.013	.485
Valid N (listwise)	97										

The above table shows the FLN among the fourth-grade students in Cuttack district. The mean score of the literacy skills is 14.87 and the numeracy skills is 14.61. similarly, the standard deviations of the literacy and numeracy skill is 6.84 and 6.86.

Table 4.1.4 Zscore (Literacy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.00000	20	20.6	20.6	20.6
	6.00000	54	55.7	55.7	76.3
	7.00000	23	23.7	23.7	100.0
	Total	97	100.0	100.0	

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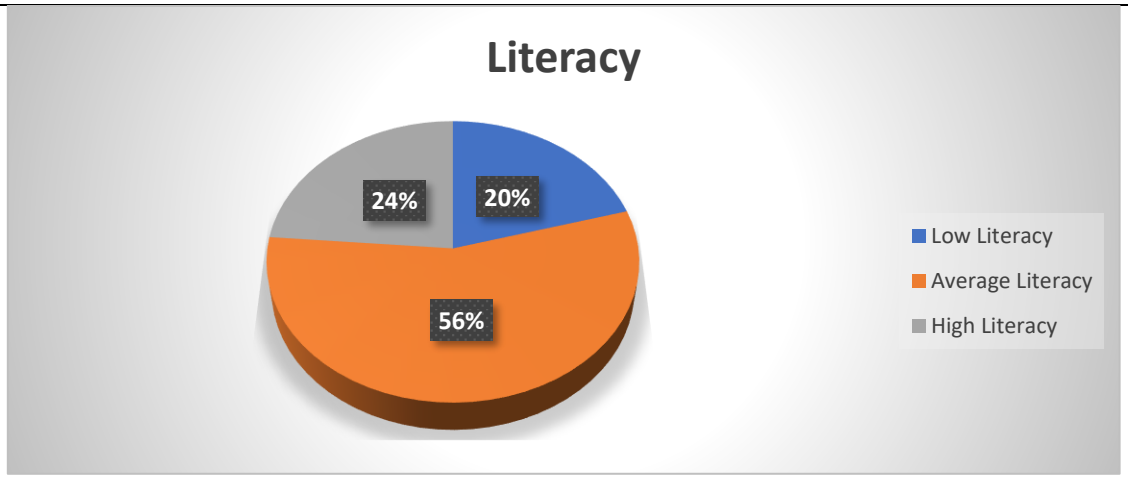

Figure 4.1.1

From the above analysis it is clear that the present literacy and numeracy status of Cuttack is average. concerning literacy proficiency, around 20% of fourth-grade students in the Cuttack district exhibit an inability to read, write, comprehend, and respond to Odia language textbooks. In contrast, approximately 24% of students demonstrate proficiency in these literacy skills. Moreover, a considerable proportion of students exhibit partial proficiency in reading, writing, comprehending, and responding to Odia language textbooks. This indicates a diverse range of literacy proficiency levels among fourth-grade students, with a significant portion requiring additional support to enhance their literacy skills.

Table 4.1.5 Zscore(Numeracy)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5.00000	11	11.3	11.3	11.3
	5.73501	1	1.0	1.0	12.4
	6.00000	71	73.2	73.2	85.6
	7.00000	14	14.4	14.4	100.0
	Total	97	100.0	100.0	

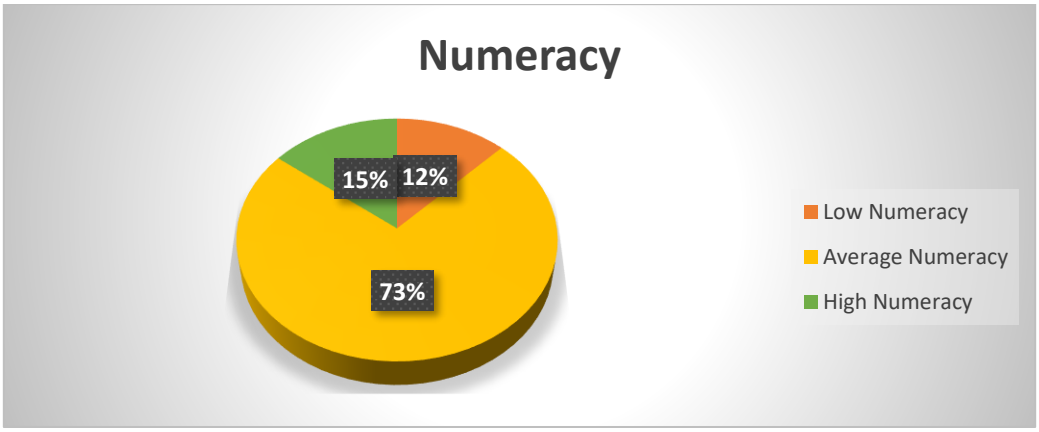

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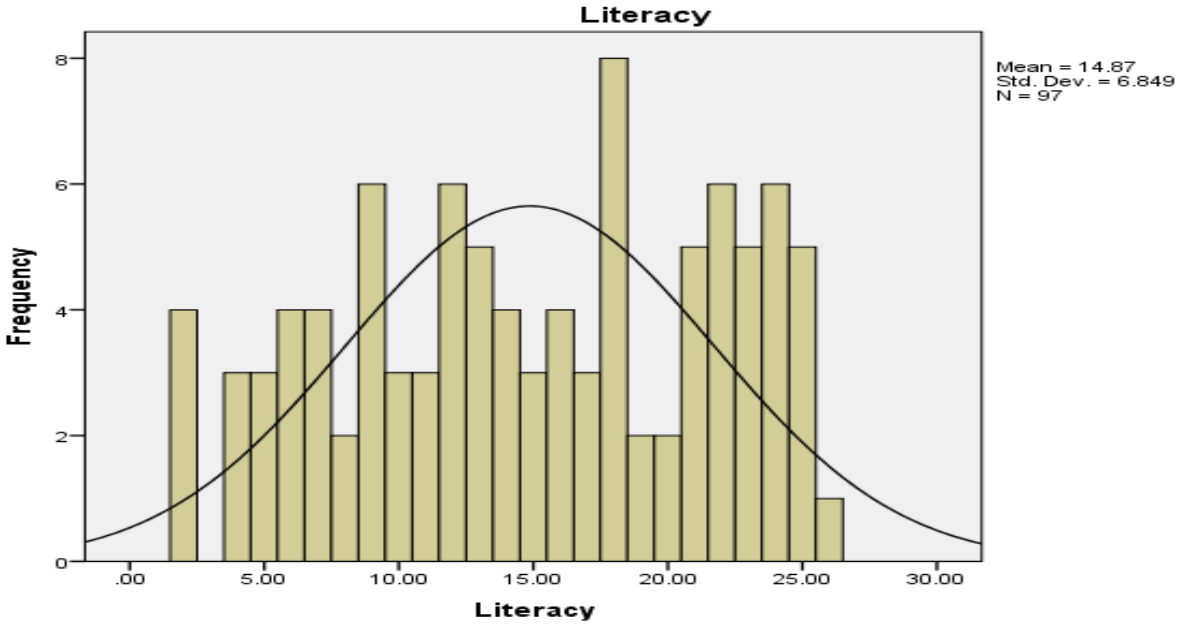
Figure 4.1.2

Similarly, majority of fourth-grade students in the Cuttack district demonstrate an average level of numeracy proficiency, with approximately 73% falling within this category. A smaller proportion of students, constituting around 15%, exhibit high levels of numeracy achievement, while approximately 12% of students lack foundational numeracy skills, indicating a difficulty in performing basic arithmetic operations. This suggests a notable variation in numeracy attainment levels among the student population, with only a subset demonstrating proficiency in basic arithmetic, while a significant portion struggle to achieve foundational numeracy skills.

Figure 4.1.3



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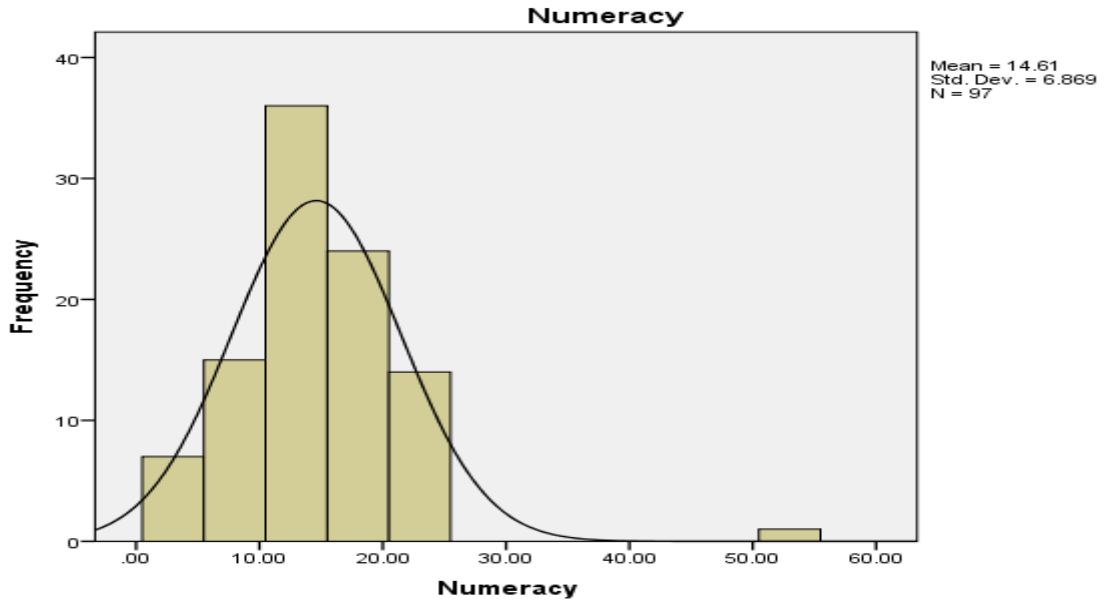

Figure 4.1.4

Relationship between FLN among the Government primary school students

To access the relationship scores of foundational literacy skills and numeracy skills, Pearson's product-moment technique was used which is given the following table-

Table 4.1.8 Correlations

		Literacy	Numeracy
Literacy	Pearson Correlation	1	.587**
	Sig. (2-tailed)		.000
	N	97	97
Numeracy	Pearson Correlation	.587**	1
	Sig. (2-tailed)	.000	
	N	97	97

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

From above table it can be interpreted, with a correlation coefficient of .587 and significance level at 0.01, it indicates a moderate positive relation between foundational literacy and numeracy. So, the null hypothesis ($H_0$3) "There is no significant relationship between foundational literacy and numeracy of Government primary school students of Cuttack district" is rejected at 0.01 significant level.

FINDINGS & DISCUSSION

1. **Level of FLN Among Primary School Students**

   The research revealed different levels of literacy skills and numeracy skills among primary school participants from Cuttack district in Odisha. The average score for literacy was 14.87 (SD=6.84), with 24% showing proficient skills and 20% not capable of

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foundational literacy skills. Writing a paragraph showed clear issues with comprehension because, while 31.95% of the students scored the maximum score possible, 29.73% of the students scored only two marks (or less). For the picture description, 23.71% of the students scored the maximum indicating a higher number of students were able to describe the picture, while 21.24% of the students scored zero, demonstrating challenge in expressive writing. Average scores for numeracy was 14.61 (SD=6.86). Students did well in addition (82.47%), but less successful in subtraction (45.36%) and division (39.17%). The measurement tasks were the most challenging for students with an average score of 22.68%. The data suggests students struggle with applying numeracy concepts. The Z-scores show about 20.6% scored below the mean in literacy while 23.7% scored above the mean; for numeracy there were 11.3% scored below the mean, while 14.4% scored above the mean. The findings were consistent with Ball & Govinda (2015), and more recently, Spink, Cloney, & Berry (2022) demonstrating the explicit difference in availability of resources and inequity in instruction. The data indicates the need for targeted interventions, which is particularly important for comprehension and problem solving, especially in rural and under-resourced areas.

2. **Comparison of literacy scores by gender.**

A comprehensive analysis of Literacy scores between genders found that the mean scores of literacies of girls 16.33 (SD=6.77) compared to 13.23 (SD= 6.62) for boys (t=2.26, p=0.026). this analysis depicts the superior proficiency of girls in tasks as comprehension and writing tasks compared to boys. This outcome is consistent with Meiers et al. (2006), who reported slight gender advantages favouring girls in literacy acquisition. Sociocultural factors, such as differing parental expectation and gender norms may contribute to these disparities. (Md-Ali, Karim, & Yousof, 2016). The t-test ($p<0.05$) also indicated that these differences in foundational literacy scores were significant leading to the rejection of the null hypotheses H_{01}: there exist no significant difference in literacy scores by gender.

3. **Comparison of numeracy scores by gender.**

In contrast to literacy, the mean numeracy score for boy (14.15, SD=5.31) and girls (15.01, SD= 8.05) has no significant gender-based difference in numeracy scores. Both boys and girls achieved an average proficiency in basic arithmetic operation. Such as addition (82.47%), but struggled similarly with advanced concept like measurements (22.68%) and division (39.17%). The parity in numeracy performances suggests that instructional quality rather than gender specific factors plays a critical role in shaping outcomes. The findings supported by the previous literature suggesting minimal gender-based distinctions in early numeracy skills (Md-Ali, Karim, & Yousof, 2016). Further t-test analysis confirmed the absence of significant difference ($p>0.05$), supporting the retention of null hypotheses, which was H_{02}: There exist no significant difference in numeracy score by gender.

4. **Relationship between literacy and numeracy:**

A moderate positive corelation ($r =0.587$, $P< 0.01$**) was identified between literacy and numeracy scores, indicating that students with strong foundational literacy skills tended to perform good in numeracy tasks requiring textual interpretation. This interdependence aligns with the findings of study conducted by Purpura et al. (2011), who demonstrated the predictive relationship between early literacy kills and numeracy

development. The hypotheses that "there is no significant relationship between foundational literacy and numeracy" is rejected, with evidence supporting a robust linkage between these skills.

SUMMARIZATION

This study investigates the level of FLN skills of fourth grade students in government primary schools in Cuttack district, Odisha, specifically looking at varying levels of proficiency, gender differences and the collaborative nature between literacy and numeracy. In a correlational study designed to assess 97 students, from 6 schools, students were evaluated in the areas of reading comprehension and oral fluency, writing, arithmetic operations, geometry, and measurements. The results were moderate levels of proficiency FLN with advanced literacy (comprehension and written expression), and numeracy (reasoning and applied concepts) clearly lacking. Girls displayed higher levels of literacy than boys, however, no significant differences existed in numeracy. The findings highlight the need for educational interventions relative to equity, a focus on teacher capacity improvement and overall pedagogical innovation to address the inequalities and improve learning.

RECOMMENDATIONS

To optimize the FLN outcomes, the research recommends to purposefully designed remediation for low achieving learners, more teacher training on interactive teaching methods, and gender-responsive curricula. Digital tools can be used as pedagogical tools structured for learning purposes, particularly in low-resourced contexts. Increasing family engagement, as well as employing formative assessments will also support early learning. Policy reform should ensure that attempts are made at local implementation of national programs like NIPUN Bharat and Vidya Pravesh to make sure programs are being implemented with fidelity and sustainability.

IMPLICATIONS

The results carry important implications for policy of education, pedagogy, and future research. In rural or socioeconomically disadvantaged regions, enhancing FLN requires equitable policies and early intervention programs. Pedagogy should be learner-centred, and utilize contextualized and competency-based practices, to foster engagement and learning. Addressing gender inequality requires gender-equitable access to literacy and numeracy. Future research should be more geographically and demographically representative and use longitudinal designs to examine long-term outcomes. There are also scalable possibilities to improve foundational competencies and reduce educational disparities with the integration of digital and AI-supported learning.

CONCLUSION

Linguistic and numerical competence is indispensable to academic growth, cognitive development, and civic engagement. This paper highlighted that there is an urgent need to address inequities in competence acquisition among primary school pupils in Cuttack, Odisha. While pupils have developed certain basic competencies, we are still seeing gaps in comprehension, expressive writing, and problem-solving reasoning, especially among disadvantaged pupils. To address this, we must prioritize the effective implementation of

initiatives such as NIPUN Bharat and Vidya Pravesh, other scales to advance reading and apprehension skills, educator learning and training opportunity, and likewise innovate pedagogical approaches to teach basic literacy skills. Making foundational education a universal right to educational equity and empowering individuals to contribute to the betterment of society through equitable pathways to quality education.

ETHICAL STATEMENT

In the conduct of this research, we have abided by the principles of ethical academic publishing and research integrity. Data collection and analysis were conducted in accordance with ethical guidelines and considerations: confidentiality, informed consent, and the welfare of participants were all assured. The research adheres to the ethics of institutional and national standards and maintains transparency, objectivity, and ethics of academic integrity.

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INDIA'S EDUCATIONAL POLICIES SINCE INDEPENDENCE

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ABSTRACT

Educational policies in India have undergone significant changes since its independence. These policies aimed to address diverse challenges and provide educational facilities to all sections of society, meeting the demand for a skilled workforce in response to economic developments over time. The paper examines the various educational policy measures in India since independence, highlighting continuity, changes, and the roles of both central and state governments. It explores key policies such as the 'Education Commission, 1964-66, the National Policy on Education (NPE) of 1968, the National Policy on Education (NPE) of 1986, India's RTE Act (2009), and the NEP 2020, emphasizing their impact on accessibility, educational equity, and quality. The analysis underscores the importance of periodic revisions in educational policies to adapt to evolving socio-economic realities and meet the diverse needs of the population. The collaborative framework between central and state governments, guided by constitutional provisions, ensures a balanced approach to educational policymaking. Moving forward, sustained efforts and cooperative approaches will be crucial to building a robust education system that empowers individuals and fosters national development. Through this analysis, we can gain insights into the historical trajectory of Indian education policies and their implications affecting the ongoing and future development of the country's education system.

Keywords: India, educational policies, continuity, changes, central government, state government.

Introduction

India, since its independence in 1947, has made significant strides in its educational landscape, driven by a series of policies aimed at expanding access, promoting equity, and enhancing quality across all levels of education. These policies have played an important role in addressing diverse challenges faced by the education system, aligning with the socio-economic conditions of the country. From the early emphasis on achieving universal elementary education to the recent reforms aimed at transforming the entire education ecosystem, Indian educational policies were aimed at meeting the changing needs of its vast and diverse population.

Post-independence, India inherited a fragmented and unequal education system marked by low literacy rates, limited access to schooling, and stark disparities across regions and communities. Recognizing education as a fundamental tool for socio-economic development and nation-building, successive governments have formulated and implemented various policies to address these challenges and foster inclusive growth.

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Significance of Educational policies in India since independence

Educational policies in India since independence have been pivotal in shaping the trajectory of the education system, addressing multifaceted challenges, and fostering inclusive growth. The 1986 National Policy on Education marked a significant step toward broadening educational access, with a focus on universalizing elementary education. It underscored the state's responsibility to ensure that every child is provided with the opportunity to attend school, thereby laying the groundwork for inclusive educational development (Ministry of Education, 1986). The enactment of the 'Right to Education (RTE) Act in 2009' marked a pivotal shift toward ensuring educational equity and social inclusion, by enshrining the right to free and compulsory education in law, applicable to children within the 6-14 age group. (Ministry of Law and Justice, 2009)'.

Educational policies have consistently aimed at improving the levels of educational excellence throughout all stages of learning. Schemes like SSA were introduced to enhance the standard of elementary education, by strengthening educational infrastructure, appointing qualified teachers, and supplying essential learning resources, thereby ensuring an environment supportive of effective learning (Ministry of Education, 2001. Recognizing the critical role of skill development in enhancing employability, the National Skills Qualifications Framework (2013) aimed to align education and vocational training with industry-relevant skills (Ministry of Skill Development and Entrepreneurship, 2013).

Contemporary policy reforms, like the 'National Education Policy (NEP) 2020', have emphasized promoting innovation, creativity, and critical thinking among students. This policy advocates for multidisciplinary education and flexibility in the curriculum to foster holistic development, thereby preparing students for the challenges of the 21st century (Ministry of Education, 2020). Technology's pivotal role in education policy initiatives has emphasized its integration into teaching and learning, promoting digital and online platforms to broaden access and engagement (Ministry of Education, 2020).

Important Educational Policies in India Since Independence

Since independence, the educational sector in India has seen a number of reformative policies designed to tackle systemic challenges and promote inclusive and equitable development. 'The National Policy on Education (NPE)' of 1968 marked a significant step towards addressing the educational needs of the newly independent nation (Ministry of Education, 1968). However, it was the NPE of 1986 and its subsequent modifications in 1992 that laid the foundation for comprehensive educational reforms. The policy emphasized the need for 'universal elementary education (UEE)', equitable access, and quality improvement across all levels of education (Ministry of Education, 1986). It introduced programs like the 'District Primary Education Programme (DPEP) designed to improve primary education in underserved regions. Subsequently, the introduction of non-formal education and adult literacy programs aimed to address the educational requirements of marginalized sections while improving access to lifelong learning. (Ministry of Education, 1992).

'The Right to Education (RTE) Act of 2009' represented a significant legislative milestone by making free and compulsory education a constitutional right for children between six and

fourteen years old. (Ministry of Law and Justice, 2009). The RTE Act mandated free and compulsory education, thereby addressing disparities in access and ensuring inclusivity. It further prescribed specific norms and standards related to infrastructure, pupil-teacher ratios, and educational quality, aiming to enhance learning outcomes across schools. With its launch in 2001, the Sarva Shiksha Abhiyan set out to accomplish universal elementary education through the provision of adequate infrastructure, professionally trained teachers, and essential learning resources (Ministry of Education, 2001). SSA played a crucial role in bridging gaps in access and quality, notably in rural and far-flung areas.

In recent years, educational priorities have increasingly emphasized skill development and vocational training to meet the evolving demands of a developing economy. 'The National Skill Development Policy (NSDP) of 2009' stressed the importance of developing a competent workforce equipped to address the challenges posed by globalization and rapid technological progress (Ministry of Skill Development and Entrepreneurship, 2009). The policy aimed at enhancing employability through skill training programs and promoting entrepreneurship among youth. The National Skills Qualifications Framework (NSQF) in 2013 provided a unified framework for skill development and certification, ensuring standardization and recognition of skills across sectors (Ministry of Skill Development and Entrepreneurship, 2013).

The 2020 New Education Policy marks abroad-based educational reform addressing the needs of the 21st century and aligning with global best practices (Ministry of Education, 2020). The NEP advocates for a well-rounded education approach, emphasizing flexibility and integration across disciplines. It underscores the significance of early childhood care and education, along with basic literacy and numeracy competencies. as essential components for building a robust educational foundation. The policy also emphasizes the integration of educational technology, technological ability, and online education systems to boost access and quality of education. The NEP also seeks to revamp teacher education and professional development to improve teaching standards and enhance learning outcomes.

It further highlights the promotion of exploration and development within the education sector as a means to cultivate creativity, logical thinking, and the ability to resolve. It proposes setting up research institutions, promoting interdisciplinary research, and establishing a National Educational Technology Forum (NETF) to facilitate innovation and collaboration within the field of education. Additionally, the framework advocates for promoting regional languages and multilingualism to ensure better understanding and retention of concepts among students.

Educational Policy	Important Features
'Education Commission (1964-66)'	Promoted common school structure, emphasized teaching science and mathematics subjects, promoted three-language policy, focused on vocational education, and also suggested university reforms, among other recommendations
'National Policy on Education (NPE), 1968'	Promoted a common educational structure and fostered national integration.

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'National Policy on Education (NPE), 1986'	Emphasized universal elementary education (UEE) and equitable access to quality education. Introduced innovative programs like the District Primary Education Programme (DPEP) and alternative education.
'Right to Education (RTE) Act, 2009'	Recognized education as a fundamental right for 6 to 14-year-old children, enforcing free and compulsory schooling to reduce access gaps.
'National Skill Development Policy (NSDP), 2009'	Emphasized creating a skilled workforce to meet the challenges of globalization and technological advancement.
'National Skills Qualifications Framework (NSQF), 2013'	Provided a unified framework for skill development and certification, ensuring standardization and recognition of skills across sectors.
'New Education Policy (NEP), 2020'	Advocated for holistic development, flexibility, and multidisciplinary learning. - Emphasises early childhood care, integration of technology, and research and innovation in education.

Since its independence, educational policies in India have evolved to address the diverse needs of the society and the changing socio-economic realities. From the focus on access and equity in the early years to the emphasis on skill development and innovation in recent times, these policies have significantly influenced the formation of the education landscape of the country. To implement these policies effectively, coordinated collaboration among government agencies, educational institutions, civil society organizations, and the private sector is essential to guarantee that every child has access to quality education and the opportunity to realize their full potential.

Need for Periodic Revisions in Educational Policies

Revising and revisiting educational policies in India since independence has been imperative due to various reasons, reflecting the evolving socio-economic landscape and changing educational needs of the population. Firstly, India's vast diversity is reflected in the varied educational needs of its regions, communities, and socio-economic groups. Educational policies need to be revisited periodically to address these diverse needs and ensure inclusivity and equity in access to education (Kothari Commission, 1966). Additionally, rapid advancements in technology and globalization have transformed the skills required in the job market. Reforming educational policies facilitates the alignment of curricula with contemporary labor market requirements, thereby equipping students with the skills necessary for both employment and entrepreneurial pursuits (National Policy on Education, 1986). Societal changes such as urbanization, migration, and changing family structures have implications for education. Revisiting policies allows for the incorporation of provisions to address emerging challenges such as migrant education, gender equality, and the needs of marginalized communities (NEP-1986).

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Frequent revisions of educational policies are necessary to boost the quality of education and learning results. Evaluating existing policies may reveal gaps in infrastructure, teaching methodologies, and learning materials, necessitating reforms to enhance the quality of education delivery (Sarva Shiksha Abhiyan, 2001). Revisiting policies enables the adoption of innovative pedagogies and teaching techniques to cater to diverse learning styles and preferences (New Education Policy, 2020). Changes in educational governance structures and administrative processes may warrant revisions to ensure effective implementation and accountability (Ministry of Law and Justice, 2009). Moreover, international standards and best practices serve as benchmarks for educational excellence. Revisiting policies allows for benchmarking against global standards and incorporating international best practices to enhance the quality and relevance of education in India (NEP, 2020).

Societal aspirations coupled with expectations from schooling have evolved. Revising policies provides an opportunity to incorporate values such as inclusivity, sustainability, and ethical citizenship in the education system (New Education Policy, 2020). These policies play a crucial role in fostering national development and promoting social cohesion. Revising policies allows for the alignment of educational objectives with national development goals such as poverty alleviation, gender equality, and environmental sustainability (National Policy on Education, 1986). Additionally, revisiting policies facilitates the involvement of stakeholders such as educators, parents, students, and civil society organizations in the policymaking process, ensuring that policies reflect the aspirations and concerns of all stakeholders (Ministry of Law and Justice, 2009). It is important to address diverse educational needs and align the curriculum with changing job market demands, individual empowerment, and national progress.

Continuity and changes in educational policies in India

Continuity and changes in Indian educational policies since independence reflect the nation's journey towards building an inclusive, equitable, and quality education system. The continuity lies in the persistent efforts to expand access to education, promote inclusivity, and improve educational outcomes across various demographic segments. For instance, the National Policy on Education of 1968 provided the basis for promoting a standardized educational system and fostering a sense of national integration (Ministry of Education, 1968). Subsequent policies, such as the NPE of 1986 and its modifications in 1992, continued this focus on universalizing elementary education, addressing disparities, and promoting social justice through education. These policies emphasized the importance of providing education to underprivileged groups, such as Scheduled Castes and Scheduled Tribes, and girls, thereby ensuring continuity in efforts towards inclusivity and equity in education.

Enhancing excellence in education has continually featured in Indian educational policies. While early policies focused on expanding access, subsequent reforms have emphasized improving educational standards and learning outcomes. For instance, the Sarva Shiksha Abhiyan (SSA), launched in 2001, aimed to enhance the quality of elementary education by providing infrastructure, trained teachers, and learning materials (Ministry of Education, 2001). Similarly, the Right to Education (RTE) Act of 2009 mandated norms and standards for infrastructure, teacher-student ratios, and quality of education to ensure improved learning

outcomes (Ministry of Law and Justice, 2009). These efforts represent a continuity in the focus on quality enhancement in Indian education policies.

However, alongside continuity, Indian educational policies have also undergone significant changes to adapt to evolving socio-economic realities and emerging challenges. One notable change is the increasing emphasis on skill development and vocational education to address the demands of the modern workforce. Policies such as the National Skill Development Policy of 2009 and the introduction of the National Skills Qualifications Framework (NSQF) in 2013 reflect this shift towards promoting employability and entrepreneurship among youth. Additionally, the New Education Policy (NEP) of 2020 stands for a complete overhaul of the education system, focusing on holistic development, flexibility, and multidisciplinary learning (Ministry of Education, 2020). The NEP advocates for early childhood care and education, integration of technology, promotion of regional languages, and fostering research and innovation in education, reflecting the changing priorities and aspirations of the nation (Ministry of Education, 2020).

Changes in governance structures and administrative processes have also influenced educational policies in India. The RTE Act of 2009 introduced significant changes in governance by mandating the establishment of School Management Committees (SMCs) to ensure community participation and monitor the functioning of schools (Ministry of Law and Justice, 2009). Similarly, the NEP of 2020 proposes the establishment of various institutional mechanisms, including the National Educational Technology Forum (NETF) and the National Research Foundation (NRF), to strengthen governance and accountability in the education sector (Ministry of Education, 2020). These changes reflect a shift towards decentralized governance and increased stakeholder participation in educational policymaking and implementation.

The continuity and changes in Indian educational policies since independence reflect the nation's commitment to creating a solid education system that promotes inclusivity, equality, and meets the demands of a dynamic society. While the focus on expanding access, promoting inclusivity, and improving quality remains consistent, changes in policies reflect the evolving socio-economic context, emerging challenges, and aspirations for the future. These continuous efforts and adaptations underscore India's resolve to harness the transformative power of education for individual empowerment and national development.

Duty of the centre and state authorities in devising educational policies

The role of both the central and state governments in devising educational policies is delineated by the constitutional provisions that establish a shared responsibility for education between the two levels of government. Article 246 of the Indian Constitution provides for a division of powers between the Union and state governments, with education falling under the Concurrent List (List III). This means that matters related to education can be legislated by both central and state authorities. The central government is instrumental in shaping national-level policies and frameworks for education, setting overarching goals and standards, and providing financial support and assistance to states (Ministry of Education, 1986). For instance, the NPE of 1986, followed by its subsequent modifications in 1992, set the stage for comprehensive educational growth in the country, outlining principles and targets to guide the states in formulating their

policies (Ministry of Education, 1986; Ministry of Education, 1992). Additionally, the central government also establishes autonomous bodies and councils such as the University Grants Commission (UGC) and the National Council of Educational Research and Training (NCERT) to coordinate as well as oversee educational initiatives at the national level (University Grants Commission Act, 1956; National Council of Educational Research and Training Act, 1961)'.

On the other hand, state governments oversee the enforcement of educational policies within their respective jurisdictions, tailoring policies and programs to address local needs and priorities (Ministry of Law and Justice, 1950). State governments have the authority to establish and manage educational institutions, formulate state-specific curriculum frameworks, and allocate resources for educational development (Ministry of Law and Justice, 1950). States play a crucial role in extending educational access and addressing regional disparities by implementing targeted interventions and initiatives (Ministry of Education, 2001). For example, state-level programs such as the Rashtriya Madhyamik Shiksha Abhiyan (RMSA) focus on improving access to secondary education and enhancing its quality, reflecting the state's efforts to address specific challenges within their education systems (Ministry of Education, 2001). State governments collaborate with the central government and other stakeholders to implement national interventions like the Sarva Shiksha Abhiyan (SSA) and the Mid-Day Meal Scheme, with an aim to achieve universal education besides enhancing educational outcomes across the country (Ministry of Education, 2001).

Overall, the constitutional provisions and the division of powers between the central and state governments establish a collaborative framework for devising educational policies in India since independence. While the central government sets the overarching vision and standards for education and provides financial and institutional support, state governments are responsible for the implementation and customization of policies to address local needs and challenges. This shared responsibility reflects the federal nature of the Indian polity and underscores the importance of cooperative federalism in promoting educational development and ensuring equitable access to quality education for all.

Conclusion

It is obvious that all major Indian educational policies share common themes aimed at creating an inclusive, equitable, and quality-driven education system. They emphasize universal access to education, especially for marginalized groups, and consistently promote curriculum reforms to improve teaching and learning outcomes. Vocational training and skill development are recurring priorities, reflecting the need to align education with employment. Different policies also uphold the three-language formula to foster linguistic harmony and national integration. Teacher training, the use of technology, and the promotion of constitutional values are central to enhancing educational quality. Additionally, there is a strong focus on lifelong learning, holistic development, and community participation to ensure a well-rounded and effective education system.

In conclusion, India's educational policies since independence have been instrumental in addressing multifaceted challenges and shaping the trajectory of the education system towards achieving inclusivity, quality, and relevance. From the early emphasis on expanding access to education to the recent reforms aimed at fostering innovation and holistic development, these

policies have evolved to meet the changing needs of the population and adapt to the dynamic socio-economic landscape. The continuity in efforts to promote equity, improve quality, and enhance access underscores the efforts to build an educational system that caters to the diverse needs of its population. However, alongside continuity, significant changes in policies reflect the evolving priorities and aspirations of the nation, with a growing emphasis on skill development, technology integration, and innovation in education. The collaborative framework established between the central and state governments, guided by constitutional provisions, underscores the importance of cooperative federalism in driving educational development, ensuring that all have equal access to a quality educational experience. Moving forward, sustained efforts and collaborative approaches will be essential to address emerging challenges and build an education system that empowers individuals and fosters national development in the 21st century.

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DIGITAL INITIATIVES IN HIGHER EDUCATION SYSTEM IN INDIA: AN OVERVIEW

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ABSTRACT
The higher education (HE) of our nation is the third largest and oldest in the world. With the advent of the 21st century, revolutionary changes are taking place in the HE of India. We live in an era where technology shapes education globally. Digitalization stands as a transformative force in higher education, reshaping content delivery and learning experiences. Digital content, smart classrooms and online learning are becoming essential for the education system. The Indian government has invested heavily in HE level to digitalize the content and delivery of education. This paper examines various digital initiatives aimed at enhancing education quality in India like SWAYAM, e-PGPathshala, NDL, GIAN, NAD, NPTEL, Swayam Prabha, Virtual Labs and Shodhganga etc. Additionally, it explores the impact of these initiatives on higher education in India. Through this analysis, the paper highlights both the opportunities and challenges presented by India's digital education (DE) initiatives.

Keywords: Higher Education, Digital Content, Digital Initiatives, Digitalization, India.

INTRODUCTION
India is the world's leader in the field of communication and information technology as well as in other advanced fields, including space. It has achieved remarkable advancements in science and engineering and is emerging on global platforms as a formidable economy (Gawande, 2020). The advancements in knowledge and technology have instigated substantial progress in the transformation of Indian society via the interchange of information (ibid). Today, digital technologies—particularly advancements in artificial intelligence—are reshaping industries worldwide, including education. The 'Prime Minister of India', Narendra Modi, declared the country 'Digital India' on 1stJuly, 2015. The launch of the 'Digital India' initiative marked a significant milestone in the country's digital revolution. It consists of three main elements i.e., "secure and reliable digital infrastructure growth, digital government services delivery and universal digital literacy" (Gawande, 2020). It is a flagship project of the Indian Govt. with a view to changing India into a digital community and wisdom based economy (Jadhav, 2018). This programme aimed to connect dwellings in village areas with strong internet networks and improve digital literacy. Empowering citizens and integrating India's economy into the global knowledge network has been a key focus of this initiative. The recent pandemic situation has made us feel the need for alternative approaches of quality education where traditional education is ineffective. However, the efficacy of 'digital education' is based on the standard of the content, its accessibility, and the internet speed (Singh, 2023). The 'National Education Policy 2020' (NEP 2020) recognizes the necessity of leveraging technological benefits while acknowledging its potential risks and advantages. This policy mentioned ongoing online platforms and existing ICT-based educational initiatives to effectively tackle present and future challenges in providing quality learning for everyone. This

policy also states that a diverse array of educational software will be created and accessible for learners and educators at every level. This kind of software will be provided in all primary Indian languages and will be usable to a diverse array of users, including pupils in distant regions and differently-able learners. All States, along with "NCERT, CIET, CBSE, NIOS", and another organizations, shall persist to develop educational e-content in various regional languages, which will be released to the DIKSHA portal. This portal also is used for educators' improvement via e-content (Government of India, 2020, p. 57).

India is a large state with a huge population and diversified cultures. India has the third biggest universities across the globe after China & the United States in aspects of size, variety, and numbers of institutions. India is expected to become a significant academic hub in the coming days. The 'Right to Education Act 2005' has instigated a paradigm shift in the nation's educational system by offering free and compulsory schooling for all children aged 6 to 14, as shown by increasing rates of enrollment in schools in recent years (Gawande, 2020). India has become a multicultural, pluralistic nation with the world's 2nd largest demographic and the 3rd biggest HE system of education globally (Jayaram, 2007; UGC, 2003; Mondal & Islam, 2021). The HE system has achieved phenomenal developmentsince India's independence. Before independence, India possessed merely 28 universities & 578 colleges and an enrollment of 0.1 million students (Karan & Mondal, 2024). In accordance with the 'All India Survey on Higher Education' (AISHE) 2021-22 report, there are presently a number of universities, colleges, and standalone institutions in India, i.e., 1,168, 45,473, and 12,002, respectively. 17 universities are completely intended for girls.Since independence, India's higher education sector has expanded exponentially, with universities growing 41 times and colleges increasing over 78 times in seven decades (AISHE report 2021-22). The ratio of Indians' involvement in the field of HE has been on the rise.In accordance with the 2021-22 AISHE report, the 'Gross Enrolment Ratio' (GER) for HE of India is 28.4, which is determined for individuals aged 18 to 23. The GER at the all-India level of women in HE indicates a consistent rise. The rise in GER, particularly among women (28.5% compared to 28.3% for men), highlights the progress toward greater gender inclusion in higher education (AISHE report, 2021-22)). The total enrollment in HE is approx. at 4.33 crore, comprising 2.26 and 2.07 crore males and females accordingly. With the growth of Indian Higher Education Institutes (IHEs) since independence, India has been genuinely progressing toward the massification of HE.

Higher education significantly contributes to individual and social well-being and to the development of India as outlined in its Constitution - a democratic, equitable, socially aware, cultural, and humanistic society that upholds "liberty, equality, fraternity, and justice for all" (Government of India, 2020, p. 33). HE substantially enhances sustainable living and the financial growth of a country. As India transitions into a "knowledge economy and society", a rising number of younger Indians are expected to pursue HE. In light of 21st century demands, quality HE ought to aim to cultivate competent, reflective, holistic, and innovative persons. In this context, NEP 2020 mentioned:

> It must enable an individual to study one or more specialized areas of interest at a deep level, and also develop character, ethical and Constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service, and 21st century capabilities across a range of disciplines including sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects. A quality higher education must enable personal accomplishment and enlightenment, constructive public engagement, and

productive contribution to the society. It must prepare students for more meaningful and satisfying lives and work roles and enable economic independence (Government of India, 2020, p. 33).

Higher education should serve as the foundation for knowledge generation and innovation, ultimately enhancing the national economy. Consequently, the objective of quality higher education transcends merely generating increased employment prospects for students. Therefore, it provides a pathway to livelier, socially involved, cooperative communities, as well as a happier, more unified, culturally aware, productive, innovative, progressive, and successful society.Higher education must not only foster individual growth but also serve as the foundation for national innovation and global competitiveness in the digital era.

OBJECTIVES OF THE STUDY

The following objectives of the current investigation emerged in the mind of the researcher:

1) To examine the various kinds of digital initiatives in 'higher education'.
2) To analyze the opportunities and challenges in implementing India's digital education initiatives.
3) To explore the impact of digital initiatives on the higher education.

MATERIALS &METHODS

This study draws upon both primary and secondary sources to ensure a comprehensive analysis. The primary sources are AISHE 2021-22 reportand digital initiatives in higher education of the Govt. of India, MHRD. For this study, both the review-based analysis method and the document analysis method were used, and its approach was qualitative in nature.

GOVERNMENT DIGITAL INITIATIVES IN HE

Considering the rise of digital technologies and the growing significance of utilizing technology for teaching-learning across all tiers of education, the Govt. of India has executed different strategies to improve and ensure excellence in HE. Digital initiatives have been introduced under the 'National Mission on Education through Information and Communication Technology (NMEICT)' programme of the MHRD, Govt. of India. On 9th July, 2017, the 'National Convention on Digital Initiatives' was held at Vigyan Bhawan, New Delhi. A 17-point strategy was established at the meeting, which is slated to be launched by December 2017. Various types of digital initiatives or programmes in higher education are discussed in the following sections, which are fully managed by the Govt. of India.

i. SWAYAM ('Study Webs of Active–Learning for Young Aspiring Minds')

This project was built by the Govt. of India, "IIT Madras, Google Inc., and NPTEL" (Sing & Sing, 2022). It is a programme that aims to attain three basic elements of education policy i.e.,"access, equity, and quality". This programme aims to provide better teaching and learning resources to everyone, including the maximum underprivileged learners.It aims to bridge the digital divide among learners who were previously untouched by the digital era and unable to join the mainstream of the information economy[1]. This portal offers free, Massive Open Online Courses (MOOC) in many fields. It offers top-quality multimedia audio & video content, and text-based learning material can be downloaded or printed. The course is designed to be highly interactive with online discussion forums and self-assessment tests. Foreign universities can also offer their coursesin this portal, and exams can be conducted through SWAYAM procedure

and guidelines (Gawande, 2020). Sivakumaren and Thangavel (2019) revealed that enrollment in these courses is increasing constantly.

ii. e-PGPathshala

This project is being implemented by the UGC to develop e-content in 70 subjects at the post-graduate stage. Content and its excellence are the main elements of the education system. This initiative, called e-PGPathshala, has developed top-quality, curricula-driven interactive web content in several disciplines in the "social sciences, arts, fine arts, and humanities", physical and mathematic sciences, lingual, and languages (Deivam, 2016). In this regard, Maharaj (2018) and Sonkar & Srivastava (2017) published a report that stressed the role of e-PG Pathshala in the progression of online learning and its facilitation of broader educational access globally.

iii. NDL (National Digital Library)

NDL is a comprehensive digital repository housing metadata and educational materials (Jha, 2020). It offers a single-window search option that allows users to access both currently available digital content in India and other digital sources under one roof. The digital content is accessible in both English and many Indian languages and can be downloaded and read offline.

iv. GIAN (Global Initiative of Academic Network)

GIAN is a govt. sanctioned project that aims to harness the talents of researchers and entrepreneurs globally to motivate their participation in Indian higher education institutions to enhance the nation's existing educational resources[2], research, and innovation projects, accelerate quality rectify, and improve India's scientific and technical capability for international quality.

v. Shodhganga

It is the name coined to represent the "Digital Archive of Electronic Theses and Dissertations" of India created by the "INFLIBNET" Center[4]. It provides a mandatory platform for researchers to archive their Ph.D. theses. Also, Shodgangotri is a part of this initiative where synopsis and research project proposal can be uploaded. The purpose of this programme was to disclose the trends and directions of study in Indian universities and to avoid duplication of investigation. Research theses by Ph.D researchers all over India are obtainable in an open reservoir and can be easily used by anyone, anywhere, anytime.

vi. NAD (National Academic Depository)

The NAD **was conceived as** a programme to provide a '24x7 online store' **for** all educational **awards,** including "certificates, diplomas, degrees", **etc., deposited** by academic **departments, boards,** and evaluation bodies. NAD not only **providessimple and**free access to all academic **awards** but also **verifies** and guarantees **their** genuineness and secure storage. It is also an effective tool against fake paper certificates

vii. Swayam Prabha

Swayam Prabha is 32 direct to home (DTH) channels dedicated to telecast quality educational programmes 24x7 using GSAT-15 satellite content which is broadcast across the country (Jha, 2020). The content of the training program is provided by NPTEL, IITs, UGC, IGNOU, NCERT and NIOS.

viii. Virtual labs

The concept the virtual laboratory was born from an initiative to provide remote learning and examination through an online interface that is available everywhere in many science and

engineering subjects. This project is a paradigm shift in ICT-driven education. It is constructed to give students the feel of a real lab. Unlike traditional laboratory settings, students can execute the same examination multiple times and independently. This helps to encourage learners' curiosity because they can take the tests at any time and individually.

ix. NPTEL ('National Program on Technology Enhanced Learning')

In 2003, Govt. of India has started this project by seven "Indian Institutes of Technology (IIT) and Indian Institute of Science (IIS), Bangalore[3]". The purpose of this project was to offers excellence of education to anyone interested in studying from the IITs. The primary objective of this programme was to make web & video courses in all of the major engineering and physical science fields for the undergraduate and postgraduate levels, as well as post-graduate management courses (Singh et al., 2020 & Sanghvi et al., 2021). It is the biggest online repository across the globe for engineering, the fundamental sciences, and a few humanities and management disciplines, as well as the first successful MOOC-type platform for webcasting lectures. Any person can access these courses without any remuneration or eligibility requirement at anytime. The lectures are delivered by eminent professors from IIT and IIS.

x. e-Yantra

It is a programme entrusted to IIT Bombay to enable fruitful education in embedded systems and robotics in engineering colleges in India. The training for teachers and students is provided in workshops where participants are taught fundamental of embedded systems and programming. Besides, it helps colleges establish robotics labs/clubs to integrate regular training into their curricula. As a result In India, above 275 colleges has benefited.

xi. Plagiarism Detection Software

MHRD plans to provide plagiarism diagnosis software to all universities and institutes to facilitate plagiarism detection in academic and research works including articles in journals and conference proceedings, book chapters, theses, research reports, project papers, electronic content for MOOC and educational platform etc. (Shrivastava & Shrivastava, 2022). Plagiarism checking software such as iThenticate, Turnitin, Urkund, Duplichecker etc. will check the plagiarized content and identify the address from where the sentence was copied. This software improves quality research and it also improves the ability to rewrite researchers.

xii. ARPIT (Annual Refresher Programme in Teaching)

In 2018, India government started a significant and exclusive initiative for the online professional improvement of 15,000 university teachers on the MOOC platform SWAYAM. To implement ARPIT, 75 discipline-certain 'National Resource Hubs' have been established to prepare online teaching materials that focus on the newestimprovements in the field in dealing with revised curricula based on pedagogical developments and methodologies (Jha, 2020). The duration of the entire course is 40 hours. After successful completion of the course, all faculties receive a certificate. Let's see the opportunities and challenges to the implementation of DE initiatives are the following.

Opportunities and Challenges to implementation DE Initiatives

1) **Flexibility of learning:** Enhanced access to a wide array of educational tools, enabling learners from different cultures and backgrounds to access various contents **(Bebbington, 2021)**. Furthermore, pupils who are employed or have other obligations have the opportunity to pursue their studies (Jindal & Chahal, 2018).

2) **Self-pace learning:** Personalized learning allows pupils to advance at their own pace in accordance with their individual learning patterns, hence augmenting the efficacy of instruction **(Bebbington, 2021)**.
3) **Interaction among students and educators**: Positive motivation of interaction and cooperation among students and educators via digital platforms fosters a more flexible atmosphere for learning.
4) **Monitoring and assessment:** The potential for actual time monitoring and evaluation of pupil achievement enables faster and more successful measures in the educational process **(Bebbington, 2021)**.
5) **Improved competence and self-assurance:** A broad range of standard online courses through digital platforms is offered by prominent and skilled instructors. Availability to them is now universal, unlike face-to-face classroom teaching.

Despite many opportunities, implementation of DE initiatives faces the following challenges:

1) Lack of availability of resources and internet connection: Inadequate internet access in rural and certain urban areas constitutes an important roadblock to 'digital education' in India (Jindal & Chahal, 2018; Bhatia, 2024; Budhia & Behera, 2023). In India, a significant portion of the population remains without internet connection, and especially numerous persons in rural regions lack basic knowledge of digital technology. Innovative concepts are essential for enhancing the resilience and dynamism of DE.
2) Lack of sufficient training: Inadequate training for teachers to successfully use diverse digital tools, potentially undermining instructional quality (Bebbington, 2021).
3) Resistance to change: Resistance from teachers and educational organizations may impede the adoption of new approaches and technologies. Particularly, several academic institutions in rural regions possess faculties that express a lack of interest in implementing digital technology in the classroom (Bebbington, 2021).
4) Diversity language and content: It is a primary obstacle hindering the advancement of e-learning in India. With a large number of regional languages spoken in different states across the country, educational institutions face challenges in providing digital content in all languages (Jindal & Chahal, 2018; Budhia & Behera, 2023).

Also, Bebbington (2021) mentioned that DE faces challenges, i.e., issues about the safety and confidentiality of user data on digital platforms, and Singh (2023) noted 'digital justice,' 'cyber security,' and the necessity of training educators to utilize digital tools proficiently. The widespread accessibility of electronic devices and informational resources has significantly challenged teaching process. Again, in the technology era, students have access to 'virtual classrooms and laboratories' led by renowned educators globally, resulting in a progressive decline in their interest in face-to face classes (Singh, 2023).

IMPACTS OF DIGITAL INITIATIVES IN HIGHER EDUCATION

Various studies have proved that the effects of digital initiatives have been established in higher education. Despite relatively low adoption rates among institutions (15%), the transformative potential of digital initiatives remains significant (Shrivastava & Shrivastava, 2022). The implementation of 'Digital India' initiatives in education has had a greater impact on social, economic, financial and educational activities. Digital platforms like NAD, SWAYAM Virtual Labs, and NDL have significantly expanded digital literacy among students, young

professionals, and job seekers. These initiatives can help students improve their knowledge and skills and prepare for future careers. In this regard, Bano & Vasantha (2020) mentioned that digital initiatives play a crucial role in addressing the divide in employability skills, enhancing the standard of education, and fostering both digital literacy and socio-economic advancement. McGrath et al. (2017); Suri & Sharma (2025) assert that MOOCs signify an enormous technological improvement in e-learning over the past decade, which are considered radical transformations for the higher education landscape. Again, Zheng & Yang (2017) stated that these initiatives have allowed learners to elevate the educational process beyond the traditional limitations of time and location, hence expanding opportunities for knowledge gain. Suri & Sharma (2025) pointed out that pupils' active participation highlights the expansion in higher education. Therefore, these initiatives enhance learning outcomes for both students and lifelong learners, equipping them with essential skills for the evolving digital landscape. Furthermore, these efforts will result in a vast repository of knowledge, tools, and opportunities that will not only provide quality education and accessibility but, beyond accessibility, digital platforms foster a culture of innovation, encouraging students to explore their full potential through interactive and adaptive learning tools.

CONCLUDING REMARKS

As a developing nation, India's higher education system plays a crucial role in fostering human growth and national development. India's HE system has undergone phenomenal development after independence. In the 21st century, the Govt. of India has taken a huge step to develop telecommunications technology. 'Digital learning', has gained increasing popularity in recent times. It performs an essential role in providing education. Especially, the 'COVID-19' pandemic reinforced the necessity of digital initiatives, highlighting their role in ensuring education continuity amid disruptions. In this lens, day by day the government launches new projects like e-PGPathshala, NDL, NPTEL, Swayam Prabha, Virtual Labs, ARPIT, e-Yantra etc. The basic purpose of this project is to achieve quality education in rural and urban areas, including for students in remote areas. To maximize the impact of digital education, robust broadband infrastructure and structured training programs for educators should be prioritized. Students are getting used to e-content every day, and its acceptance is increasing. Digital programmes have helped impart education faster, easier, more efficiently, and cheaper. Teachers should be properly trained in technology skills. Students should be made aware of the free availability of digital content through special campaigns and advertising events. In this perspective, Government of India has emphasized that in the new NEP-2020, digitalization of education is one of the first government's priorities. In a nutshell, it can be stated that digitalization has facilitated rapid, fruitful, and cost-effective progress; nonetheless, the challenges to its future implementation remain somewhat ambiguous and unpredictable. The 'success or failure' of the higher education system relies on effective solutions to such challenges. The effective formation of a knowledge-driven society would present substantial prospects for India, but its failure to succeed could lead the country into both economic and political crises.

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NEP 2020 AND THE FUTURE OF EARLY CHILDHOOD CARE AND EDUCATION IN INDIA: CHALLENGES AND OPPORTUNITIES

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ABSTRACT

Education is a dynamic process through which necessary changes in society are attained. The overall development of any country and nation is possible through education. The future of any country mostly depends on the various research conducted in the field of education of that country and the proper application of its valuable results in the right field. Children are the foundation of any nation. In India, NEP 2020 is the 1st educational policy of the 21st century. The New Education Policy of India emphasizes producing human beings with traits and virtues like courage, rational thinking, action, knowledge, compassion, empathy, creative attitude and proper vision towards life. Early childhood education is a key pillar of the whole education system. Therefore, NEP 2020 significantly focuses on the field of ECCE. NEP 2020 recognizes that every child needs to be included in ECCE to facilitate India's future success and prosperity. This literature review synthesizes key studies examining the delivery of ECCE through India's Integrated Child Development Services (ICDS) and the reforms proposed under the National Education Policy (NEP) 2020. While ICDS has played a pivotal role in combining nutrition, health, and preschool education for over four decades, NEP 2020 shifts the focus toward foundational literacy, cognitive development, and curricular integration. Previous research reveals both convergence and conflict between these frameworks, especially in areas such as governance, workforce capacity, and curriculum implementation. This paper explores the different aspects of ECCE in the light of NEP 2020 and suggests ways to improve the quality of ECCE in the future. The review tries to attract the attention of the Indian Government to adopt a unified approach for aligning ICDS to NEP and organise the ECCE programme in such a way that combines the strengths of health, nutrition, and education for holistic child development in India.

Keywords: Anganwadi, Early learning, Education, National Education Policy 2020, Sustainable Development Goal

Introduction:

The first six years of life are very important because at this age, children develop at a much faster rate than at any other stage of life. 85% of children's brain advancement takes place by the age of 6. Therefore, a child's overall development pace is negatively affected if there is no setting available which is conducive to their development. ECCE is a program designed to create an environment conducive to the early stages of lifelong learning. Education is a

powerful tool on which the present and future economic, social, political, and all other forms of development of the country depend. NEP 2020 places a strong emphasis on raising and maintaining the standard of India's educational system at all levels for the country's overall development, one of which is ECCE. According to NEP 2020, "Universal provisioning of quality early childhood development, care, and education must thus be achieved as soon as possible, and no later than 2030, to ensure that all students entering Grade 1 are school ready" (National Education Policy, 2020).

Objectives of the study:

- To examine how the 2030 Agenda for Sustainable Development envisions and prioritises early childhood care and education;
- To discuss the recommendations of NEP 2020 in the field of ECCE;
- To discuss the significance of NEP in the context of ECCE;
- **To analyze the main role of the Integrated Child Development Services scheme in ECCE and its overlap with the provisions of NEP 2020;**
- To discuss the challenges in implementing the recommendations of NEP in the context of ECCE;
- To suggest some ways for the improvement of the quality of ECCE.

Review of related studies:

Rumi & Mete (2024) explored the opportunities and challenges presented by NEP 2020, highlighting its potential to increase accessibility, improve quality, and enhance skill development, while also addressing implementation hurdles and resource constraints.

Saikia (2024) highlights the value of ECCE in promoting the overall growth and development of children from birth to age eight. The NEP 2020 emphasizes the significance of ECCE, recognizing its remarkable effect on children's future growth and development. This paper examines how ECCE is represented in the NEP 2020, highlighting its vital importance in supporting children's physical, cognitive, social, and emotional growth.

Sardar & Miah (2024) explored in their paper the opportunities and challenges presented by NEP 2020, which replaces the 1986 NEP. The policy introduces a new curriculum structure, integrates ECCE, and aims to improve basic, secondary, and higher secondary education. The study is mainly based on existing literature and provides insights into the evolution of education in India and the implications of NEP 2020 for school education.

Biswas (2023) discusses in his paper that the NEP 2020 is a national policy designed to reform India's education system, intending to ensure access to quality education for all, promote holistic development, and increase flexibility and innovation. Although the policy offers numerous opportunities, its implementation is hindered by challenges like insufficient infrastructure, concerns related to equity, access, lack of qualified teachers, and inclusion.

Kumar (2023) outlined the importance of ECCE in the context of the NEP 2020. The policy recognizes ECCE as a crucial foundation for learning and has extended the Right to Education eligibility window to 3-18 years. However, implementing ECCE poses challenges, including establishing centres, providing teacher facilities, and designing conducive curricula. The chapter highlights the key provisions of NEP 2020 for ECCE, including flexible and play-based

learning, and emphasizes the critical role of teachers in implementing ECCE and promoting child development.

Kaul et al. (2017) and **NIPCCD (2019)** have evaluated the performance of ICDS. While the scheme has significantly expanded outreach, especially in disadvantaged and rural areas, concerns remain around the quality of preschool education, training of Anganwadi workers, and infrastructure. Kaul and Sankar (2009) emphasized the variability in the quality of ECCE services, noting that Anganwadi workers often lacked pedagogical training, resulting in inconsistent learning experiences for children. **UNICEF (2022)** and **Save the Children (2020)** identify systemic challenges in integrating ICDS with NEP mandates. These include the dual governance structure, lack of clarity in roles, and the need for enhanced capacity among front-line workers. Anganwadi workers, the backbone of ICDS, often lack the qualifications to deliver the new National Curricular and Pedagogical Framework for ECCE (NCPFECCE). As a result, implementation of NEP's ECCE goals may bypass or marginalize existing structures unless convergence is planned.

Global experiences from countries like Brazil and South Africa highlight the importance of inter-sectoral coordination in delivering ECCE (UNESCO, 2015). These cases illustrate that high-quality ECCE requires not only curriculum reform but also investments in training, community engagement, and governance reforms—lessons that are highly relevant to India's context.

Methodology:

This research utilizes an analytical method to examine the issue. The primary data was collected from the original draft of NEP 2020, and the secondary data was collected from different internet sources, journals, articles, websites, books, etc.

The ECCE and the 2030 Agenda for Sustainable Development:

In September 2015, the United Nations took a significant step forward in promoting global sustainability by convening the Sustainable Development Summit in New York. During this summit, leaders from around the world agreed upon the 2030 Agenda for Sustainable Development, which includes 17 goals and 169 targets designed to tackle various global issues. India embraced this agenda the same year, recognizing its important role in contributing to worldwide progress. Among these goals, Sustainable Development Goal 4 focuses on ensuring inclusive and equitable quality education for all. A key target within this goal aims to provide every child with access to quality early childhood care, education, and development by the year 2030 (Kumar, 2024). Specifically, SDG 4.2 stresses the importance of access to quality early childhood development, pre-primary education and care. According to UNESCO (2016), investing in ECCE promotes equity and reduces later remediation costs. The NEP's emphasis on foundational learning aligns with global trends, such as the OECD's Starting Strong reports, which highlight the importance of ECCE in promoting educational equity and economic growth.

The vision of the 2030 Agenda for SDGs in the field of ECCE consists of:

Equitable access: Guarantee that all children gain access to the best quality ECCE, irrespective of background, location and circumstances.

Holistic development: To support and ameliorate children's physical, cognitive, emotional, and social development.

Inclusive and effective: Provide ECCE that is inclusive and effective for all children, including those with impairments.

Qualified teachers: Ensure that ECCE teachers possess the knowledge, skills, and resources necessary to deliver high-standard instruction and care.

Family and community involvement: To ameliorate children's growth and well-being, promote family and community involvement in ECCE.

Collaboration and partnerships: To guarantee well-coordinated and successful ECCE policies and initiatives, encourage collaboration and partnerships between the public and commercial sectors.

Monitoring and assessment: Provisioning reliable monitoring and evaluation methods to measure advancement and raise the standard and accessibility of ECCE.

By accomplishing these, the United Nations attempted to establish a solid cornerstone for lifelong learning, socialisation, development and preparation for the future lives of children. Hence, the NEP 2020 is aligned with the target of the 2030 agenda for SDGs and intends to make education more comprehensive, adaptable and multidisciplinary to remake India into a dynamic knowledge-based nation and intellectual superpower in the world (Vadeyar, 2022).

NEP 2020 and ECCE:

Early Childhood Education (ECE) is a crucial time for brain development of a child, and it sets the basis for future learning. During this period, early experiences shape brain development and create neural connections that support language, thought, problem-solving ability, social skills, behaviour, and emotional health of a child (Middya, 2023).

The NEP 2020 appears to favour inclusive, holistic education that is centred on inquiry, discovery, curiosity, discussion and analysis. NEP 2020 also stressed equality, quality, affordability and accountability in education. ECCE is not included in the previous 10 + 2 framework of School Education. However, the New Education Policy has strongly emphasised ECCE and introduced the 5 + 3 + 3 + 4 school education framework, including ECCE.

NEP 2020 envisions universal access to ECCE by 2030. Key provisions include:

- Integrating ECCE into the school curriculum (3–8 years as a foundational stage).
- Creation of National Curricular and Pedagogical Framework for ECCE (NCPFECCE).
- Professional development for ECCE educators.

These align with international practices seen in countries like Finland and Singapore, where ECCE is an integral part of formal education systems (OECD, 2020).

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Objectives of ECCE in NEP 2020:

- To develop healthy habits, a good physique, and adequate muscular coordination in maintaining good physical health
- To teach the child a sense of empathy and to help them acquire a positive social attitude and manners that would promote positive interactions with others
- To improve the child's capacity for clear, accurate and unambiguous speaking in which he expresses his or her ideas and feelings
- To improve the socio-emotional and cognitive abilities of children
- To help a child acquire all multifaceted personality traits
- To help children acquire the basic skills of reading, writing and numeracy
- To use play activities to encourage a curriculum that empathises joy and happiness (Aggarwal & Gupta, 2022).

School Education Structure and NEP 2020:

The NEP 2020 of India presented the 5 + 3 + 3 + 4 education framework for School education. which includes:

Period of classes	Classes	Age	Name of the stage
5 years	Preschool/Anganwadi	3 -6	Foundational stage
	Class 1 to 2	6-8	
3 years	Class 3 to 5	8-11	Preparatory stage
3 years	Class 6 to 8	11- 14	Middle stage
3 years	Class 9 to 12	14-18	Secondary stage

Curriculum for the Foundational Level:

According to NEP 2020, NCERT will develop the National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE) in two separate phases. one for 3–8 years aged children and another for 0–3 years aged children. Based on the most recent ECCE research, NEP 2020 emphasises the inclusion of storytelling, poetry, games, art, dance and nature study in the ECCE curriculum (Phulari et al., 2022).

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Execution delivery of ECCE:

To guarantee that ECCE is accessible to every child, NEP 2020 suggests ECCE can be delivered through-

- stand-alone Anganwadis (not associated with any pre-primary or primary schools)
- Anganwadis, which are co-located with the pre-primary or primary schools
- Pre-primary section connected with primary schools (at least cover 5 to 6 years aged children)
- Stand-alone preschools (not connected with any Anganwadis and primary schools)

NEP 2020 also recommended hiring teachers and staff with specialised training and who are familiar with the ECCE curriculum and methodology.

Significance of NEP 2020 in the context of ECCE:

NEP marks a paradigm shift by:

- Recognising the critical nature of the early years.
- Shifting from rote-based to play-based, inquiry-led pedagogy.
- Establishing institutional accountability in ECCE delivery.

Studies such as Kaul & Bhattacharjea (2021) highlight the long-term cognitive and socio-emotional benefits of early learning, validating NEP's approach.

However, NEP 2020 has various significances in the field of ECCE. These are:

- **Holistic development:** NEP 2020 focuses on a multi-faceted and holistic education approach to fulfil the all-round development of children through the ECCE programme.
- **Foundational learning:** The Early years are a very crucial period for subsequent learning. Hence, NEP 2020 stresses foundational learning for 3-8-year-old children.
- **Inclusivity:** NEP 2020 emphasises the inclusion of all children in ECCE irrespective of their gender, class, geographical location, etc.
- **Universal access:** NEP 2020 intends to guarantee that every child in the three to six-year age range has access to high-standard early childhood education and care.
- **Curricular framework:** NEP 2020 suggests following and maintaining a flexible, adaptable, play-based and age-appropriate curriculum in ECCE.
- **Teacher training:** NEP 2020 puts the stress on the significance of well-trained and professional teachers in creating a suitable environment for the overall development of ECC children.
- **Parent and community engagement:** NEP 2020 placed a strong emphasis on creating a collaborative environment between parents and the local community with ECCE educators for their child's benefit.
- **Effective transition to primary education:** NEP 2020 emphasizes on overall development of children through ECCE so that their effective transition is possible from ECCE to primary education.

- **Assessment practices:** NEP 2020 suggests a play-based assessment to measure the progress of ECCE children (Sahoo & Pradhan, 2024).

The main role of ICDS in ECCE and its overlap with NEP 2020:

The Integrated Child Development Services is the largest program in India delivering ECCE, nutrition, and health services through Anganwadi centres since 1975. NEP 2020 acknowledges the importance of early years but places primary responsibility for ECCE under the Education Ministry, potentially shifting the focus away from the ICDS framework.

- **Overlap and conflict:** ICDS prioritizes nutrition and health along with pre-schooling, while NEP emphasizes cognitive and academic development. This creates a gap in coordination between the Ministry of Women and Child Development (MWCD) and the Ministry of Education.
- **Institutional conflict risk:** The New National Curricular and Pedagogical Framework for ECCE (NCPFECCE) requires integration with ICDS workers (Anganwadi Workers), who often lack formal teaching qualifications (UNICEF, 2022).

The challenges and implementation barriers of NEP 2020's recommendations in the context of ECCE:
The following difficulties could prevent the effective implementation of the recommendations of NEP 2020 in the area of ECCE:

- **Inclusivity:** It includes barriers to universal care and education in remote places and meeting the requirements of current facilities. The policy supported universal access and inclusion in education. However, there are several inequalities in India's educational system, including gender, caste, area, socioeconomic status, etc.
- **Infrastructural limitations:** It covers problems related to psychological and structural limitations. These include- lack of sufficient spaces and equipment, limited access to clean water, hygiene facilities, sanitation, inadequate lighting and ventilation, etc.
- **Training:** In addition, it covers issues with Anganwadi supervisors, workers and ECCE teachers' training. This caused to decrease in the effectiveness of ECCE, low outcomes of the child, etc.
- **Funding:** A considerable amount of funds is needed to achieve NEP 2020, yet the policy is ambiguous on how that money is to be raised.
- **Lack of awareness:** The improper acknowledgement and awareness about ECCE and NEP 2020 may lead to low enrolment rates, poor quality services, decreased community engagement, improper policy implementation, etc.
- **Assessment practices:** NEP 2020 suggests a play-based assessment for measuring the progress of children, but this assessment process may be challenging, especially where play materials and resources are limited.
- **Improper Coordination**: It includes problems due to the lack of proper coordination between the central, state governments and the private sector.

Despite these, the NEP faces several implementation challenges affirmed by various organisations:

- **Infrastructure Gaps**: Many Anganwadi centres lack basic amenities (NITI Aayog, 2021).
- **Educator Capacity**: ECCE workers often lack formal training (UNICEF India, 2022).
- **Monitoring and Quality Assurance**: There is an absence of uniform standards (NCERT, 2020).
- **Integration Challenges**: Bridging existing preschool systems (private/public) with NEP's structure is complex.

Recommendations for raising the standard of ECCE:

We can improve the standard of ECCE in India by first understanding its importance and worth. Only when we recognise its significance, give it a particular worth and make it necessary and advantageous for every child. Most parents think that Early childhood education only entails learning to read, write and communicate from a young age. They are unaware that ECCE's proper goal is developing life skills, which hinders the achievement of the real goals of ECCE (Shashtri & Rajput, 2022). Here are some suggestions for the improvement of the ECCE programme suggested by various organisations and previous studies:

- **Professional Development**: Large-scale teacher training modelled after successful programs like the ICDS-ARNEC collaboration (ARNEC, 2019).
- **Public-Private Partnerships**: Leveraging private sector innovation for scalable ECCE models (Dasgupta, 2020).
- **Digital Tools**: Use of educational technology for curriculum delivery and monitoring (World Bank, 2021).

Apart from these, some general suggestions are given which can improve the quality of ECCE: -

- It is crucial to launch a national campaign emphasizing the value of ECCE. This can help to form proper awareness about ECCE among the people.
- It should be fast to prioritise the child's happiness, health and safety.
- It is necessary to enrol parents in programmes about healthy eating habits, early education, and childcare practices.
- The activities that take place at home and in school should be connected.
- Every child's unique difference must be given priority.
- Proper cooperation between the central and state governments is necessary for achieving the goal of ECCE.
- Strengthen monitoring by combining ICDS's existing grassroots infrastructure with NEP's academic framework.
-
- The school health programme should be strengthened by the government.
- Continuous monitoring and evaluation processes must be prioritised in the field of ECCE.

Discussion & Conclusion:

The main purpose of NEP 2020 is to transform India's education system, but its implementation faces challenges despite presenting opportunities for universal access to quality education (Biswas, 2023). Kumar (2023) explores the significance of ECCE in NEP 2020, its implementation challenges, and the vital role of teachers in promoting child development and implementing ECCE. Sardar & Miah (2024) The New Education Policy 2020 focuses on transforming Indian school education, introducing a new curriculum structure and integrating Early Childhood Care and Education. This article explores the opportunities and challenges presented by NEP 2020, providing insights into the evolution of education in India. Saikia (2024) examines its reflection in the policy, highlighting the need for quality ECCE to facilitate children's future growth and development. Education is a dynamic process that requires continuous adaptation to meet societal needs. NEP 2020 emphasizes the development of holistic individuals and highlights the importance of ECCE in laying the foundation for future educational success (Shashtri & Rajput, 2022). The above discussion reflects that NEP 2020 has tried to lay a strong foundation for ECCE in various ways. The inclusion of ECCE in NEP 2020 demonstrates a dedication to the fundamentals of education and acknowledges the importance of the formative years in influencing the child's future. The ASER Report 2024 demonstrates that children between the ages of three and five are now enrolled in preschool programs, including Anganwadis, LKG, and UKG at a significantly higher rate. 77.4% of three-year-olds children in rural areas were enrolled in early childhood education programs by 2024. In conclusion, we can say that NEP 2020 attempts to build the foundation for a strong and efficient education system by offering equitable, inclusive and high-quality education from the beginning.

This paper finds that while NEP 2020 offers a progressive vision, its successful implementation hinges on leveraging and strengthening existing structures like the ICDS. Key recommendations include integrating nutrition and pedagogy through dual certification for Anganwadi workers, developing joint institutional frameworks for curriculum and monitoring, and ensuring adequate funding and training support at the grassroots level. By aligning the strengths of ICDS with the curricular vision of NEP, India can move closer to achieving universal, inclusive, and equitable ECCE as envisioned in the SDGs. A collaborative, well-coordinated strategy is vital for ascertaining the transformative potential of early childhood education in India.

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PARENTAL ATTITUDE TOWARDS WOMEN EDUCATION IN SOUTH 24 PARGANAS DISTRICT OF WEST BENGAL

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ABSTRACT

The girl child of today will be the woman of tomorrow. We recognise that a mother acts as her child's first teacher. This present study's objective was to determine the parental attitude towards women education regarding gender, location and age group. A descriptive survey method was applied for this study. 281 parents were randomly selected from 'South 24 Parganas' district in rural and urban areas of West Bengal. A self-constructed attitudinal scale was used for data collection. 23 items were selected based on 4 dimensions. Data was collected through a field survey. This study utilised a 'stratified random sampling technique'. Expert validation and reliability of the items were determined. The findings indicated that no significant difference in attitude towards women education between 'male and female' parents across various age groups. Still, there was a significant difference observed in rural and urban areas. Although there were similarities and dissimilarities in the parental attitude in this study, it can be said that the parents of 'South 24 Parganas' need to be aware of women education.

Keywords: *Equal Rights, Parental Attitude, Social Transformation, Women Education*

Introduction

Education is the only medium capable of changing the entire structure of society. The growth and development of a nation can be measured by the success of its young generation, which primarily depends on education. Achieving this progress requires a fundamental social transformation (Das & Kar, 2018). A man's education primarily benefits himself, while a women education positively affects the entire family as she shares her knowledge with everyone (Saxena, 2023). A mother is a child's primary teacher and the family is their first learning environment, when she is educated and enlightened, she manages her household effectively and inculcates good behaviour in her children (Mishra, 2009). A good mother is more effective than a teacher. Our nation is a democratic state that ensures equal rights for all

genders, male or female (Mete et al., 2023). Women also have the same right to pursue education as per their choice (Reis & Seidl, 1989). There is a significant disparity in the education level of men & women in our country due to factors such as illiteracy, child marriage, veiling, socio-economic challenges, traditional attitudes, superstitious, parental ignorance, thinking of women as a curse, and generally poor standards towards women education (Yagan & Alabay, 2018). Secondary education is considered an important step in the educational journey, providing students with the support they need to progress to higher education and enter the job market. It primarily provides the foundation of knowledge, skills, and basic employability understanding for human capital development (Useem, 1992). However, our education policies mainly focus on research aspects of primary education and higher education (Krishnan & Bhat, 2023). Ironically, despite numerous policies established for secondary education, they are often ignored and not effectively implemented.

Need and Significance of the Study

Parental encouragement and support for home learning activities are essential for women education, along with their involvement in school (Mishra, 2009). A growing number of studies show that building strong relationships between parents, families, and schools improves women learning and results in better academic outcomes (Hilal, 2016). Parents can have a significant impact in the lives of women and guide their daughters to achieve behavioural and value changes (Mete et al., 2023). Generally, parents' involvement entangles collaboration between families, schools, and communities, raising parents' awareness of the benefits of investing in their women education, and equipping them with the necessary skills to support this investment (Bordhan, 2014). The investigators consequently agreed to conduct this study. Secondary education is considered an important step in the educational journey, providing students with the support they need to progress to higher education and enter the job market.

Review of Related Literature

Thakker (1994) found that parents in rural areas were less supportive of science education at home than their urban counterparts. In addition, parents with higher education levels demonstrated more positive attitudes toward domestic science education than those with lower education levels. Mohanasundaram and Kannan (2001) revealed that rural women generally have a positive attitude towards formal education for women. Families in these regions with

higher socio-economic status are more supportive of women education. Conversely, women with lower educational attainment often have a less favourable view of formal education for women. Lakshmi and Karimulla (2007) revealed that rural parents of both genders held a positive attitude towards girls' education. Moreover, no significant differences were observed between literate and illiterate rural parents in these positive attitudes. Furthermore, fathers generally had more favourable attitudes than mothers. Gupta (2010) revealed that the population of parents has favourable attitudes towards education in rural & urban areas. Samal (2012) investigated that the level of education of tribal & non-tribal parents was not significantly different. Gardia and Kaur (2014) indicated that parents' attitudes towards the education of their children are consistent across genders. However, there were significant differences in parental attitudes regarding wealth and education. Reshma (2014) demonstrated that parents generally hold a positive attitude towards the education of their daughters, with mothers displaying more enthusiasm than fathers. Parents who were highly educated and of better socio-economic status were particularly supportive and had favourable attitudes towards their daughters' education. Chaudhari (2015) revealed a noticeable difference between English and Gujarati parents. Additionally, there was a significant gender gap, with fathers generally having a more positive view of education than mothers. Parents in urban areas are more focused on the language of instruction. In their study, Deb and Ghosh (2015) delved into the impact of parental responsibility for the education of their children parental perceptions & dropout rates on the school learning process. They highlighted the influence of these factors on children's education. Similarly, Mor and Sethia (2015) uncovered that the attitudes of parents in 'rural & urban' areas towards the education of children were largely similar. They also found no significant difference between mothers' & fathers' attitudes toward their children's education. Sarkar (2019) found a significant variation in parental attitude towards women education across different age groups. The review of research indicated that attitudinal differences in women education are not only in West Bengal but across India. Studies showed that the position of women in our society highlights their ongoing struggle for empowerment within patriarchal structures. In the review of past research, the present researchers did not explore the parental attitude towards women education in South 24 Parganas district during their research. There was a gap in this area, which led the researchers to consider this study.

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Objective of the Study

The objective of the current study was as follows:

O_1: To investigate the parental attitude towards women education regarding their gender, location and age group in the said study area.

Hypotheses of the Study

Based on the objective, the following hypotheses were formulated:

$H_0$1: There exists no significant difference in the parental attitude towards women education between male and female in the said study area.

$H_0$2: There exists no significant difference in the parental attitude towards women education between rural and urban areas in the said study area.

$H_0$3: There exists no significant difference among the age group (30 years and below, 31 to 40 years, 41 to 50 years and 50 years& above) for parents regarding their attitude towards women education in the said study area.

Delimitations of the Study

The following delimitations were observed:

I. Parents of secondary level students.

II. Sonarpur, Baruipur, and Diamond Harbour I blocks in South 24 Parganas district.

Methodology of the Study

The descriptive survey method was used for the present study and a 'quantitative research design' was utilised for conducting the study.

Population and Sample: All of the parents in South 24 Parganas district of West Bengal were considered for population of the study.

For this present study, 281 parents (142 male & 139 female, 151 rural & 130 urban) were randomly selected from three blocks in South 24 Parganas of West Bengal.

Sampling Technique: A 'stratified random sampling' technique was applied for this study.

Variables: Two types of variables were considered by the researchers here. These are given below:

- ***Major Variable:*** Parental attitude towards women education
- ***Categorical Variables***: 1) Male & female which represent gender

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2) Rural & urban which represent location

3) 30 years and below, 31 to 40 years, 41 to 50 years and 50 years & above which represent the age group

Data Collection Procedure: A self-structured questionnaire consisting of closed-ended questions was used to collect data for the study. The researcher was done through a field survey.

Instrument Used: To obtain the data, the researchers employed a standardized tool namely, Parental Attitude Scale towards Women Education (PASTWE), which they themselves developed. The tool included 23 items measured on a five point Likert scale and covered 4 dimensions: Building a strong nation, Education as an investment, Personality & social values, and Economic independence. The scale used for responses ranged from 'strongly agree' to 'strongly disagree'. The item scoring was based on 15 positive and 8 negative items.

Validity and Reliability: The items in the scale were validated by subject matter experts. The reliability of the scale was assessed using the test-retest method, yielding a reliability coefficient of .73, indicating a high level consistency. Cronbach's Alpha was also calculated to evaluate the overall reliability of the scale.

Procedure of Data Analysis: In this investigation, data analysis was carried out using both descriptive statistics and inferential statistics, tested at a .05 level of significance. The statistical computations were performed using SPSS 20, while bar graphs were generated with MS Excel 2007 for visual representation.

Results and Discussion

Testing of $H_0$1: There exists 'no significant difference in the parental attitude towards women education between male and female in the said study area'

Table 1: *Mean Comparison of Parental Attitude towards Women Education: Regarding Gender*

Gender	*N*	*M*	*SD*	Mean Difference	S_{ED}	*t*(279)	*p*	Result
Male	142	70.80	7.69	0.31	0.93	0.33*	.74	*Not significant at .05 level
Female	139	71.11	7.90					

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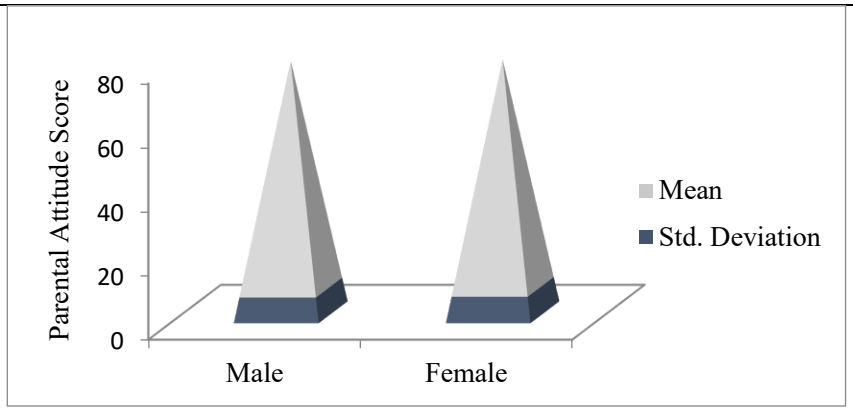

Figure 1: *Bar Graph for Mean & Std. Deviation Score for Male & Female Parental Attitude towards Women Education*

Table 1 indicated that the difference in mean between the male and female was not statistically significant in the parental attitude towards women education with $t(279) = 0.33$, $p>.05$. Table 1 and figure 1 showed that male parents exhibited lower attitude scores on women education ($M = 70.80$, $SD = 7.69$) as compared to the female parents ($M = 71.11$, $SD = 7.90$). Therefore, the null hypothesis ($H_0 1$) was not rejected.

The investigators observed only a minor difference in the 'mean value of male and female parental attitude' between male and female. This indicated that both gender held similar attitude towards women education. These findings aligned with the results reported by Mohanasundaram and Kannan (2001); Lakshmi and Karimulla (2007). On the other hand, Reshma (2014) explored that mother showed positive and pleasing attitude towards the education of women to their counterparts of fathers. However, the findings of Chaudhari (2015) revealed that fathers have favourable attitude towards education than mothers. Both the findings were indicated a significant gender gap in the parental attitude towards education.

Testing of $H_0 2$: There exists 'no significant difference in the parental attitude towards women education between rural and urban areas in the said study area'

Table 2: *Mean Comparison of Parental Attitude towards Women Education: Regarding Location*

Gender	*N*	*M*	*SD*	Mean Difference	S_{ED}	*t*(279)	*p*	Result

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Rural	151	69.73	7.19	2.27	0.92	2.46*	.02	*Significant at .05 level
Urban	130	72.00	8.12					

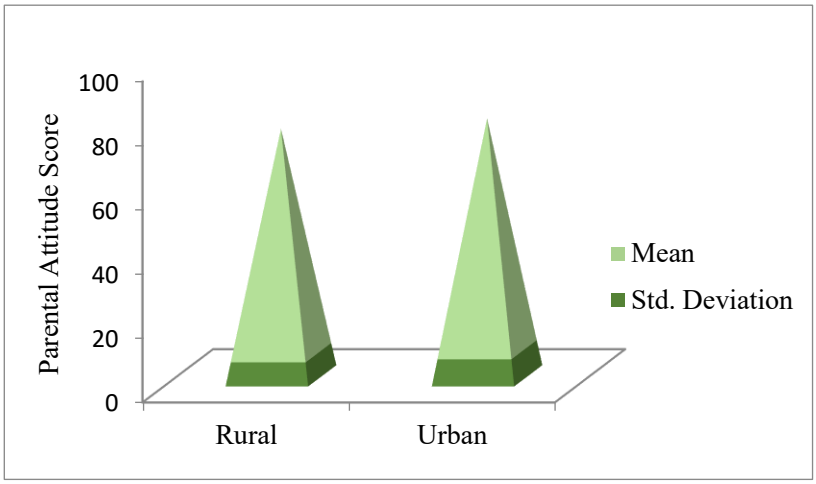

Figure 2: *Bar Graph for Mean & Std. Deviation Score for Rural & Urban Parental Attitude towards Women Education*

Table 2 displayed a statistically significant difference in mean between the rural and urban parental attitude towards women education with $t(279) = 2.46$, $p<.05$. It was obtained from table 2 and figure 2, rural parents exhibited lower attitude scores on women education (M = 69.73, SD = 7.19) as compared to the urban parents (M = 72.00, SD =8.12). Therefore, the null hypothesis ($H_0 2$) was rejected.

The mean attitude score of urban parents was higher than that of rural parents, indicating that urban parents held a more favourable view towards women education compared to rural parents. Similarly, Gardia and Kaur (2014) investigated that there was significant difference observed in parental attitudes towards wealth and education. Likewise, Thakker (1994) revealed parents in rural areas showed unfavourable attitude in science education as compared to urban. However, this was contradicted by the findings of Mor and Sethia (2015), where the study expressed that there existed no significant difference observed in the rural & urban parental attitude towards the education of children.

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Testing of $H_0$3: There exists 'no significant difference among the age group (30 years and below, 31 to 40 years, 41 to 50 years and 50 years & above) for parents regarding their attitude towards women education in the said study area'

Table 3: *Descriptive Statistics of the Scores on Parental Attitude towards Women Education: Regarding Age Group*

Age Group in Years	*N*	*M*	*SD*
30 and below	52	72.54	7.40
31-40	92	70.37	7.85
41-50	86	70.53	7.86
50 and above	51	71.08	7.91
Total	281	70.95	7.78

Table 4: *Mean Comparison of Parental Attitude towards Women Education: Regarding Age Group*

Source of Variances	Sum of Squares	*df*	Mean Square Variance	*F*	*p*	Result
Between Groups	177.86	3	59.29	.98*	.40	*Not significant at .05 level
Within Groups	16783.44	277	60.59			
Total	16961.30	280				

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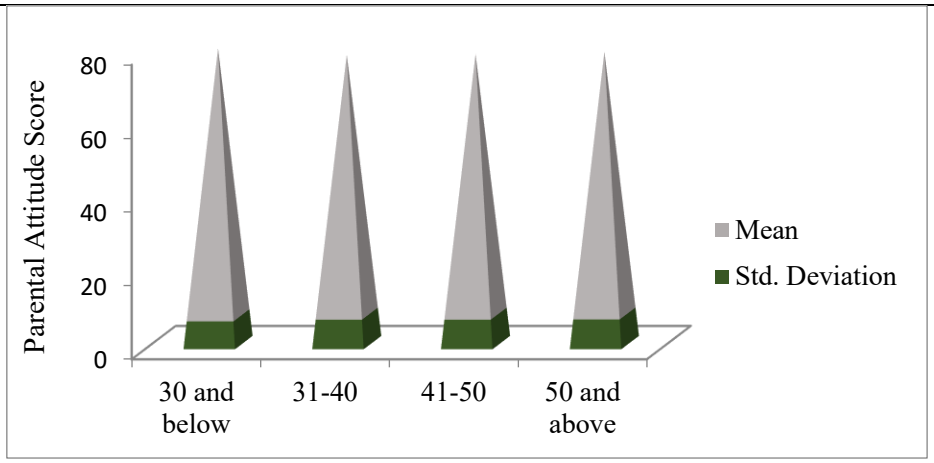

Figure 3: *Bar Graph for Mean & Std. Deviation Score in different age groups (30 years and below, 31 to 40 years, 41 to 50 years and 50 years & above) for Rural and Urban Parental Attitude towards Women Education*

Table 4 revealed a insignificant mean difference among the parental age group (30 years and below, 31 to 40 years, 41 to 50 years and 50 years & above) on their attitude towards women education with $F(3,277) = .98$, $p>.05$. Table 3 and figure 3 showed that 30 years and below age group of parents exhibited higher attitude score on women education (M =72.54, SD = 7.40) as compared to 31-40 years (M = 70.37, SD = 7.85), 41-50 (M= 70.53, SD = 7.86) and 50 years and above (M = 71.08, SD = 7.91) age group. Therefore, the null hypothesis ($H_0$3) was not rejected.

Most of the parents aged 50 years and above showed a moderate, fair, and reasonable attitude towards women education. A smaller number of parents aged 31–40 years and 41–50 years displayed a low and unfavorable attitude, while the remaining parents aged 30 years and below demonstrated a high and very favorable attitude towards women education. It was similar to the findings of Gupta (2010). But contradicted the findings of Sarkar (2019), where the study showed that a significant difference was observed in parental attitude towards women education of different age groups. On the other hand, Deb and Ghosh (2015) expressed that school education for children and dropout rates are influenced by parental responsibility and perception. However, it was contradicted by the findings of Samal (2012), where the study analysed that the parents of tribal & non-tribal did not differ in their attitude towards level of education.

Limitations of the Study

Although the study provided valuable insights, it is important to acknowledge its limitations. These were given below:

- The study was limited to the structured questionnaire.
- The qualitative data was not collected for the study.
- No electronic gadgets were used to measure the parental attitude.
- Due to a shortage of time the researchers were not cover the more blocks in South 24 Parganas district.

Conclusion

Education is an important and powerful apparatus to nurture and enhance the comprehensive development of individuals especially women (Dinesh & Chandrashekar, 2015). This study showed the differences in parental attitude towards women education, which was reflected by the society. Young aged parents (31-40 years) were showed their responses about women education at higher than other age group. Maximum parents were asserted their attitude towards women education at a moderate level. Male and female parents were kept similar attitude towards women education, and it was also manifested in different parental age groups. Although the literacy rate of women education is increasing, according to this study the parental attitude in rural areas was lower than in urban. It was clearly understood from the overall discussion of this study, although at present it has been noticed that there has been some progress regarding the attitude of some parents to rate of women education in the blocks (Sonarpur, Baruipur, and Diamond Harbour I) of the said study area, there is still a need for more awareness among parents of secondary level students.

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IMPACT OF THE SOCIO-ECONOMIC CONDITION OF THE FAMILY ON EDUCATION OF THE STUDENTS BELONGING TO SANTAL COMMUNITY

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ABSTRACT

The Indian population is highly heterogeneous concerning language, religion, caste, creed, culture, and community. According to the 2011 census, 8.6 percent of India's population comprises various tribal groups such as Asur, Rabha, Savar, Bhumij, Hajong, Bhutia, and Santhals. Post-independence, these tribes were constitutionally recognized, and numerous initiatives were undertaken by the Indian government to elevate their socio-economic and educational status, recognizing that holistic societal progress depends on the inclusion of all communities. Although improvements have occurred, substantial gaps remain. The literature review highlights limited research specifically addressing the educational issues faced by students of the Santal community concerning their socio-economic conditions. Thus, the current study, employing a mixed-method approach, investigates these dimensions in two districts of West Bengal—Birbhum and Murshidabad. Data collection tools included an unstructured interview schedule, direct observation, and a self-developed questionnaire, administered to 27 purposively selected families. Key findings reveal low parental educational levels and limited occupational diversity, predominantly characterized by agricultural labour and "Bhagchasi," resulting in minimal household income. Positive correlations emerged between family income, parental education, awareness, and children's educational outcomes. Furthermore, significant barriers identified include inadequate availability of Santali language teachers, textbooks, learning materials, and socio-cultural acceptance issues. The study's insights can inform targeted educational policies and grassroots interventions by government agencies and NGOs, ultimately fostering an inclusive society.

***Keywords**:* Santal community, Santali language, Educational issues, Educational condition of Santal community.

Introduction

At present, approximately 476 million Indigenous People live in remote areas across different countries, comprising nearly 6% of the global population (World Bank, 2023). Indigenous

groups, identified distinctly across nations based on their unique cultural and lifestyle attributes, experience significant socio-economic disparities (Hall & Patrinos, 2012). In India, Indigenous Peoples are commonly referred to as 'Adivasi' and constitute 8.6% of the national population as per the 2011 census, including groups such as Asur, Rabha, Savar, Bhumij, Hajong, Bhutia, and Santhals (Government of India, 2011; Ministry of Tribal Affairs, 2010).

Following India's independence, constitutional recognition of these groups was formalized through Article 366 (25) and Article 342, emphasizing the historical deprivation and discrimination experienced by tribal populations (Pati & Dash, 2002; Shah, 2007). The Constitution includes provisions such as Articles 15, 16, 17, 46, 330, and 332 aimed at promoting equality and equity among citizens, specifically targeting historically marginalized communities (Subramanian, Smith, & Subramanyam, 2006; Xaxa, 2014). These constitutional provisions are critical for fostering inclusive societies, as inclusion directly contributes to sustainable societal development (Ahmed & Tattwasarananda, 2018; UNESCO, 2017).

Inclusive education plays a pivotal role in achieving this societal integration. It extends beyond merely integrating physically or mentally challenged students into mainstream schools, encompassing a wide range of marginalized groups, including children from socially, culturally, economically disadvantaged backgrounds, and those facing other forms of marginalization (Banerjee & Adhikary, 2017; Florian & Black-Hawkins, 2011). The inclusive education framework seeks to provide quality educational opportunities equal to those available to children in mainstream settings, fostering holistic development and social equity (Basu & Chatterjee, 2014; Ainscow & Miles, 2008).

Significant disparities persist in the educational and socio-economic status of India's Scheduled Tribes (STs), particularly due to limited access to quality education and employment opportunities (Daripa, 2017). Gang, Sen, and Yun (2008) highlighted that poor educational achievements significantly contribute to persistent poverty levels among STs. Moreover, Sarkar, Mishra, Dayal, and Nathan (2008) underscored the consistently low Human Development Index (HDI) and high Human Poverty Index (HPI) among tribal populations compared to non-tribal populations (Mal & Patra, 2020).

Recognizing these issues, the current study adopts a mixed-method approach to explore the educational challenges faced by the Santal community in Birbhum and Murshidabad districts of West Bengal. Using a self-developed questionnaire, unstructured interviews, and direct observation with 27 purposively selected Santal families, the research identifies critical socio-economic factors influencing educational outcomes. Key findings indicate low parental education, limited occupational diversity primarily consisting of agricultural labor and "Bhagchasi," and low household income. The study establishes significant positive correlations between parental education, income, and parental awareness of children's educational outcomes. Further, notable barriers such as inadequate Santali language resources, insufficient teachers, and socio-cultural acceptance issues emerged prominently. These findings offer substantial insights for policymakers and NGOs to develop targeted educational interventions and inclusive policies, ultimately promoting broader societal inclusion.

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In 1965, the Lokur Committee was set up to identify the issues among all the tribal groups in India with the aim to uplift their condition. The committee identified five common issues a) indications of primitive traits; b) distinctive culture; c) shyness of contact with the community at large; d) geographical isolation; and e) backwardness. Based on the recommendation of the committee the government took various positive initiatives like the provision of scholarships, educational loans, reservations in education and jobs, hostel facilities and so on. Exact figures of the overall population, ST population and Santal population in West Bengal according to the census report of 1961,1971,1981,2001 and 2011 are mentioned below (Table 1). STs population is 52,96,952 whereas the Santal population is 25,12,331 which is almost half of the entire scheduled tribes (census 2011).

Table 1. *Overall, STs and Santal Community population in West Bengal from 1961 to 2011.*

Year	1961	1971	1981	1991	2001	2011
Total	3,49,26,279	4,43,12,011	5,45,80,647	6,80,77,965	8,01,76,197	9,12,76,115
STs	20,54,081	25,32,969	30,70,668	38,08,760	44,06,794	52,96,952
Santal	12,00,091	13,76,980	16,66,610	19,97,222	22,80,540	25,12,331

Source: *The Indian Government census report from year 1961 to 2011*

The recent data showed the sex ratio (Number of females per thousand males) in the total population of West Bengal is 950, in STs population is 999 and in the Santal population is 1012. The total literacy rate in West Bengal is 76.26 %, for ST it is 57.9% and for Santal, it is 54.7% (Table 2). Data clearly shows that the literacy rate of the Santal community in West Bengal is 22% less than the total population and even 3% less than the total tribal population. Overall main workers and marginalized workers are 56.28% and 43.72% respectively. In the case of the ST population, the percentage of main workers and marginalized workers is 57.9 % and 42.1% respectively. But among the Santal population main workers and the marginalized workers are 53.5% and 46.5% respectively. Census data reveals that among the Santal population 2.78 % more marginalized workers as compared to the overall population and even 4.4% more than the ST population (Table 2).

Table 2. Gender-wise literacy rate and occupation types of overall, ST and Santal population in West Bengal

	Sex ratio	Total literacy	Male literacy	Female literacy	Main worker	Marginalised worker
Total population	950	76.26	81.69%	70.54%	56.28 %	43.72%
STs	999	57.9%	68.2%	47.7%	57.9%	42.1%
Santal	1012	54.7%	66.1%	43.5%	53.5%	46.5%

Source: Census report (2011).

Even after 76 years of Indian independence, the socio-economic and educational condition of the Santal population is far from satisfaction in comparison to the educational condition of other communities or even other tribal communities' general population. It is true that their condition has improved but still, it is not up to the mark as it was expected. Thus, more ground-

level researches need to be conducted to identify their problem and accordingly to set appropriate policies and develop feasible strategies to overcome those problems and to bring them into the mainstream to create an inclusive society. The review of related literature revealed that not many studies have been conducted regarding the educational problems faced by the students of Santal communities and their socioeconomic conditions. This paper attempts to identify the educational condition of the students belonging to the Santal community of Birbhum and Murshidabad districts of West Bengal.

Demographic Description

The entire Santal community of Birbhum and Murshidabad Districts have been selected as the population of this study. They are found to reside in remote rural areas. Their houses are usually far away from the main road. Almost all the families are found to have their own house. Their house is made up of mud and wood. Some of their house is made up of concrete walls and tin. Demographic data showed that nearly11% of families have three members, 29% of families have four members, 25% of families have five members, 18% of families have six members, 7% of families have seven members and 4% of families have eight to nine or even sometimes ten members in their families. Mostly they have one or two rooms in their house and they use to cook at the front of their room and take bath into nearby pond. They all have electricity connection at their home. Connections are found to be either legal or illegal. Presently most of the family have Smartphones and few also have TVs, Music systems, and motorcycles. Previously they used to live in joint families but recently, a tendency towards the nuclear family has increased. They use wood as fuel for cooking. Most of them produce different vegetables around their house and do animal husbandry like cows, goats, ships and pigs.

Objectives of the study

This study aims to examine the impact of the socio-economic condition of the families on the education of the students of the Santal community. Some specific objectives of this study are.

RO-1: To describe the present educational condition of the students belonging to the Santal community in Birbhum and Murshidabad Districts of West Bengal.

RO-2: To identify the relationship between mothers' educational background and the educational condition of the students belonging to the Santal community.

RO-3: To identify the relationship between fathers' educational background and the educational condition of the students belonging to the Santal community.

RO-4: To find out the relationship between fathers' occupation and the education condition of the students belonging to the Santal community.

RO-4: To find out the relationship between mothers' occupation and the education condition of the students belonging to the Santal community.

RO-5: To find out the relationship between family income and the educational condition of the students belonging to the Santal community.

RO-6: To find out the level of awareness among parents regarding their children's education who belong to the Santal Community.

RO-7: To identify the problems faced by the students of the Santal Community in the school.

Research Questions

RQ-1: What is the present educational condition of the students belonging to the Santal community?

RO-2: What is the impact of family income on the student's education belonging to the Santal community?

R0-3: Is there any relation between the mother's education and the education of the students belonging to the Santal community?

R0-4: Is there any relation between the father's education and the education of the students belonging to the Santal community?

RQ-5: Is there any relation between the father's occupation and the education of the students belonging to the Santal community?

RQ-6: How does parental awareness impact the education of the students belonging to the Santal community?

RQ-7: What kind of problems do the students of the Santal community face to continue their education?

Methodology:

A mixed-method research design, integrating both quantitative and qualitative methods, was adopted due to the comprehensive nature of the study (Creswell & Plano Clark, 2018). Interview schedules developed by the researchers were validated through expert assessment using the Delphi technique, ensuring content relevance, clarity, simplicity, and necessity (Hsu & Sandford, 2007). Additionally, direct observation techniques were utilized to gather qualitative insights (Patton, 2015). The population comprised all families belonging to the Santal community in Birbhum and Murshidabad districts of West Bengal, from which 27 families were selected using a non-probability purposive sampling method aligned with the study's objectives (Etikan, Musa, & Alkassim, 2016). Quantitative data were analyzed through descriptive statistical methods (Trochim, 2020), while qualitative data collected from structured interviews, direct observations, and informal discussions with family heads and other family members were analyzed thematically.

Table-3. *Total, ST and Santal (population) literacy rate in India, West Bengal, Birbhum and Murshidabad districts*

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	Literacy rate of All social	Male (%)	Female (%)	Gap in Male/ Female	Total S.T Literacy rate	Literacy rate S.T Male (%)	Literacy rate S.T Female	Gap in S.T Male/ Female	Total Santal Community	Santal Community	Santal Community	Gap in Santal Male/ Female
India	74.04	82.14	65.46	16.68	58.96	68.53	49.35	19.18	55.57	68.07	43.26	24.81
West Bengal	77.08	81.69	70.54	11.15	59.92	68.16	47.71	20.45	54.72	66.12	43.51	22.61
Birbhum	70.68	76.92	64.14	12.78	47.48	57.57	37.67	19.90	43.32	54.57	33.12	21.45
Murshidabad	66.59	69.95	63.09	6.86	51.34	59.15	43.32	15.83	48.18	58.45	39.48	18.97
Sources: *Census 2011, India. and (Note: Data of Santal Literacy rate of Birbhum and Murshidabad collected from District local NGOs Survey)*												

The first objective of this study was to describe the present educational condition of the students belonging to the Santal community in the Birbhum and Murshidabad districts. The 2011 census data, showed that the literacy rate of the Santal population in West Bengal is approximately 23% less than the overall literacy rate and even 6% less than the STs population (Table 3). The literacy rate of the Santal female population is 28% less than the overall literacy rate of females in West Bengal and even 5 % less than the STs female population. It is found that the present educational condition of the Santal community in West Bengal as well as in Birbhum and Murshidabad districts is relatively backward in comparison to other communities, mainly because of their lack of awareness, limited occupational opportunities and low earnings of the parents, child marriage of their daughters, lack of educational support and adverse school environment and so on.

The second objective of this study was to identify the relationship between mothers' educational levels and their children's education in the Santal community. The result of this study showed that nearly 45% of mothers have never been to any formal educational institution, 25.9 % of mothers received education upto primary level, 11.1% of mothers received education up to upper primary level, 14.8 % are secondary pass and hardly 3.7% of mothers completed upto higher secondary level. (Figure 1)

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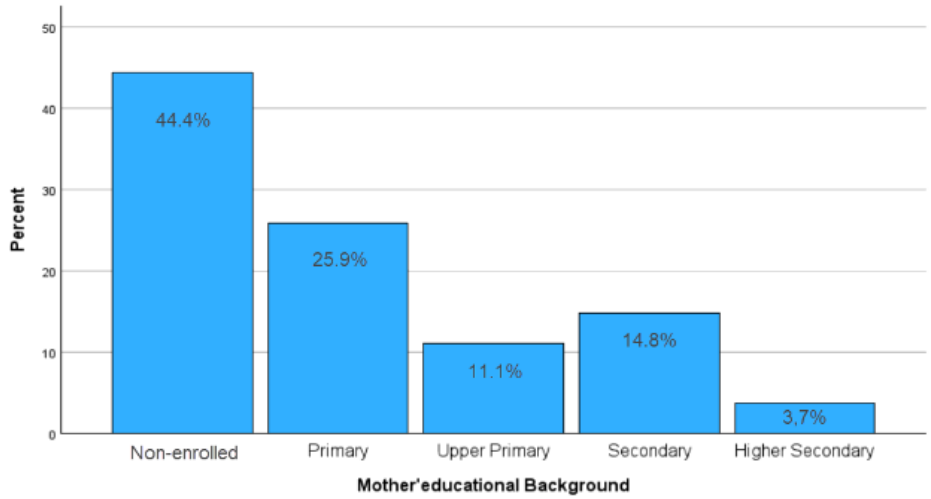

Figure 1 Educational Background of the mother of Santal community student

Data shows that mothers who have never been to school are not aware of the importance of education. Mostly they their children to government schools because it is easily available and less expensive. They do not have plans for higher education for their children mostly because they are not aware. Illiterate and less educated mothers are supporting child marriage, particularly daughters because they opined that daughters are a liability so they prefer to get their daughters married off early to shed their responsibilities. The mothers who received education up to the primary level are found to be at least a little bit aware of the importance of education for their children. They try to send their children to school. But the mothers who have completed school education and are more aware of the need for education and they mostly try to provide better quality education for their children. They prefer to send their children to private schools so that their children can learn English and get better opportunities. Most of them are interested in providing higher education to their children. Only 8.33% of students of the Santal community go to higher studies after completing their school education (Table 4).

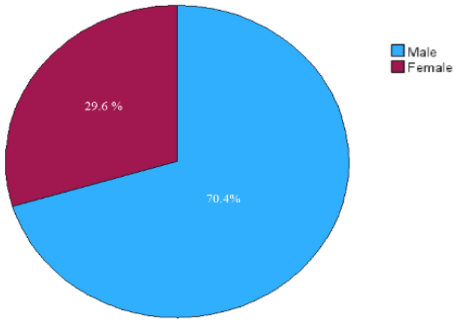

Figure 2 Percentage of male and female students of Santal community in Education

Table 4. Level of Education: Mother and her Children

Mother Education	Total Family (%)	Private School (%)	Govt. School (%)	Class – I to IV	Class – V to	Class – IX to X	Class- XI to	U.G (%)	P.G (%)

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				(%)	VIII (%)	(%)	XII (%)		
Illiterate	12 (100) → (44.4)	-	100	25	16	33.33	16.66	-	8.33
Primary	7 (100 → (25.9)	14.28	85.72	28.57	28.57	-	14.28	28.57	-
Upper Primary	3 (100 → (11.1)	33.33	66.67	66.67	33.33	-	-	-	-
Secondary Education	4 (100 → (14.8)	25	75	75	25	-	-	-	-
Higher Secondary Education	1 (100 → (3.7)	-	100	100	-	-	-	-	-
Total =	(100) → 27	11.11	88.89	40.74	22.22	14.81	11.11	7.40	3.70

It has been found that the tendency towards the education of female children is lesser than male children in the Santal community (Figure 2). Primary schools are mostly run by a single teacher and secondary schools are far away from their residential houses so the parents are unwilling to send their daughters to school, mostly because of a lack of social security, communication problems, expense involved, and so on as the literacy rate of mothers in the Santal community is very low as mentioned, they need to be empowered and awakened to realize the importance of education. Then only they can send their children to the school. The researcher found that mothers' educational level impacting on the education of their children (Table 4).

As per the 2011 census data, the literacy rate of the Santal male population is 15.56 % less than the overall literacy rate of males and even 2.04% less than the STs male population in West Bengal (Table 3). This study found that 40.7% of fathers have not been to school, 22.2% of fathers have received education up to primary level, 14.8% of fathers received education up to upper primary level,11.1% of fathers are secondary pass and 7.4% of fathers are higher secondary pass and hardly 3.5% fathers did graduation (Figure 3).

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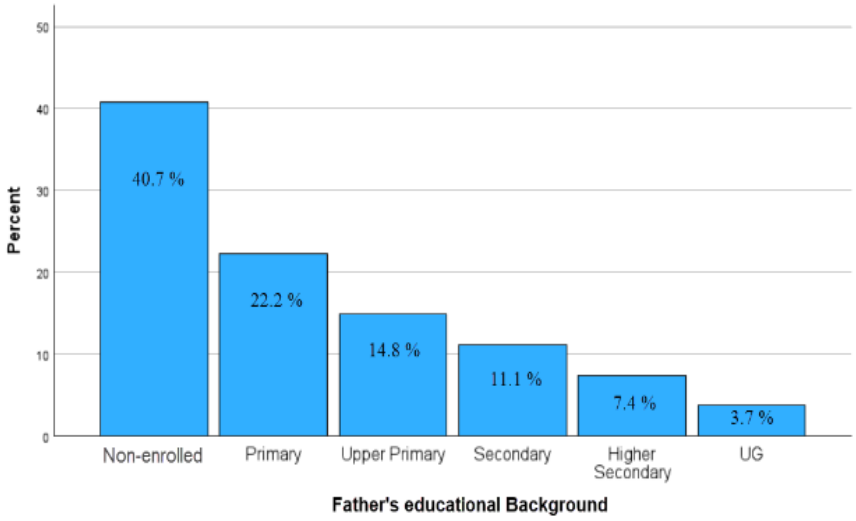

Figure 3 Educational Background of the father of Santal community students

The fathers who are illiterate or receive hardly any education, their children being first-generation learners are facing more problems in pursuing their studies due to the lack of problem and parental educational guidance.

Table 5 *Level of Education: Father and His Children*

Father Education	Total Family (%)	Private School (%)	Govt. School (%)	Class – I to IV (%)	Class – V to VIII (%)	Class – IX to X (%)	Class-XI to XII (%)	U.G (%)	P.G (%)
Illiterate	11 (10→ (40.7)	-	100	27.27	27.27	27.27	9.09	-	9.09
Primary	6 (100→ (22.2)	-	100	33.33	16.67	16.67	16.67	16.67	
Upper Primary	4 (100→ (14.8)	25	75	50	25	-	-	25	-
Secondary Education	3 (100→ (11.1)	33.33	66.67	66.67	33.33	-	-	-	-
Higher Secondary Education	2 (100→ (7.4%)	-	100	50	-	-	50	-	-
U. G	1 (100→ (3.7)	100	-	100	-	-	-	-	-
Total =	27 (100)	11.11	88.89	40.74	22.22	14.81	11.11	7.41	3.70

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The fathers, on the other hand, who received education up to the upper primary level, are trying to provide support in terms of educational guidance. Due to the low incomes, it is becoming difficult for them to provide tuition and other educational materials for their children. The fathers who have completed school education, their children are facing less challenges in education, because they are getting relatively more educational support at home in terms of

Table 6. *Family Occupation and Level of Children Education*

Family	Total Family (%)	Private School (%)	Govt. School (%)	Class – I to IV (%)	Class – V to VIII (%)	Class – IX to X (%)	Class-XI to XII (%)	U.G (%)	P.G (%)
Agriculture labour	13(100)→ (41.1)	7.69	92.31	30.77	30.77	15.38	7.69	7.69	7.69
Bhagchashi	10(100)→ (37)	-	100	40	20	20	20	-	-
Own Farming	3 (100)→ (11.1)	66.66	33.33	66.67	-	-	-	33.33	-
Others	1 (100)→ (3.7)	-	100	100	-	-	-	-	-
Total	27→ (100)	11.11	88.89	40.74	22.22	14.81	11.11	7.40	3.70

educational guidance, learning materials and extra tuition if required. The study found that the father's educational level has a strong impact on their children's education.

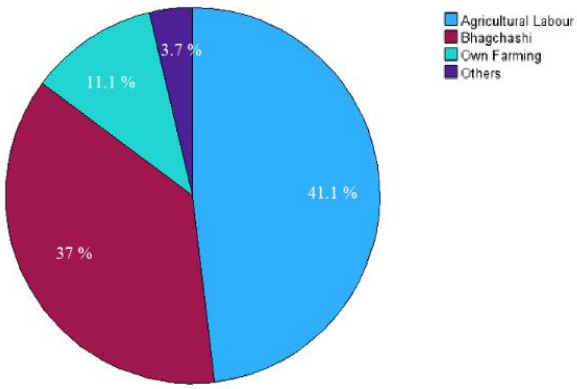

Figure 4 Type of occupation in Santal Community

The study also found that due to their low education, most of the fathers worked as agricultural labourers. The data showed 41.1% of the fathers are agricultural labourers, and 37% of the fathers are 'Bhagchashi' ('Bhagchashi' are those who farm on other's agricultural land based on some criteria and get 1/3 crop of that. In their local dialect, this system is called 'Kir-Shani'). Only 11.1% of fathers have their own land and 3.7% are in other occupations like grocery store, stone breaking, and road constructing (Figure 4).

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The fathers, who are agricultural labourers, earn seasonally. Their average earnings are very low and uncertain, which is why, they are unable to take care of the education of their children by providing extra private tuition and other additional study materials to their children. Their children are going to government schools because it is relatively less expensive and easily available. The fathers who are doing 'Kir-Shani', their children are also facing problems in attending school regularly because they had to help their parents in cultivation or they had to do domestication and siblings care so that their parents can save some amount of money. Due to this family work, the children of these families are not attending school regularly.

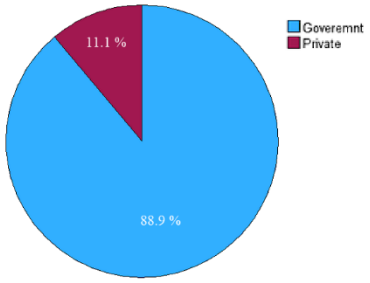

Figure 6 Percentage of Santali students in government and private school

It found that the opportunities in the Santal community are very limited- either they work as agricultural laborers or they work as 'Bhagchashi'. It was also study found that the occupation of the family has a strong impact on the education of their children. As the father's occupation is not profitable. They are becoming unable to fulfil the educational needs of their children.

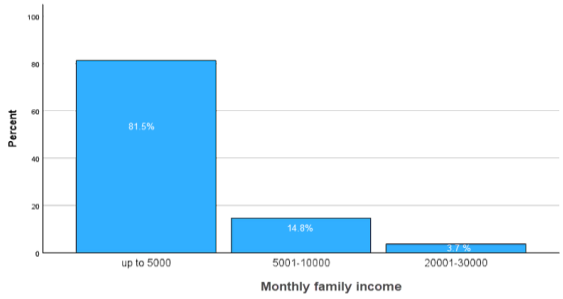

Figure 5 Monthly family income of the Santal community

This study found that 81.5% of families' monthly income is 5000 or less and 14.8% of families' monthly income is between ₹5001 to ₹10,000. Hardly in a few cases, the 3.7 % of fathers who are in other professions like government service or business, their monthly income of their family is between ₹20.000 to above (Figure). The average monthly family income of the Santal community is relatively very low in comparison to other communities.

The result showed that the families whose monthly income is ₹5000 or less than ₹5000. They are facing problems in managing their necessary family expenses. Due to the low income, they are unable to provide the basic educational needs of their children like copies, pens, books, tuition, etc. The families whose monthly income is between ₹5001 to ₹10.000 thousand 80% of their children study in government schools because of low expense and 20% of their children are sent their children is private schools (Figure 5)

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Table 7. *Family Income and Level of Their Children's Education*

Family Income	Total Family (%)	Private School (%)	Govt. School (%)	Class – I to IV (%)	Class – V to VIII (%)	Class – IX to X (%)	Class- XI to XII (%)	U.G (%)	P.G (%)
Up to 5000	22 (100) → (81.5)	9.09	90.91	36.36	18.18	18.18	13.63	9.09	4.54
5001 - 1000	4 (100) → (14.8)	25	75	75	25	-	-	-	-
10001 to 30,000	1(100) → (3.7)	-	100	-	100	-	-	-	-
Total =	27 (100)	11.11	88.89	40.74	22.22	14.81	11.11	7.41	3.70

It was found that the family whose monthly income is higher are trying to provide better educational facilities in terms of copies, pens, books, and private tuition to their children. They are trying to send their children to English medium private schools so that they get better job opportunities, which might help in the long term to improve their standard of living. Most of the families are earning an average monthly ₹5000. That is why students of the Santal community in higher education are very low, especially those who are going to higher education only depending on government scholarships.

This study found that overall, of students of the Santal community studying in government schools, and 11.1% are studying in private schools (Figure 6). It has been observed that in spite of the fact that the average monthly income of the Santal family is very low, most of the parents are alcohol addicted (Locally that is called 'Bangla Mod') and spend a remarkable percentage of their income for it. They are so much habituated to consuming alcohol daily that it has become their daily practice it is incorporated into their life cycle. Rather it is a part of their life and living. After consuming alcohol, they quarrel, fight and use filthy language thus the home environment particularly from evening onwards is not at all conducive to learning or the healthy upbringing of children. Children growing up in such environments also get socially, and emotionally affected and develop bad habits, pick up filthy language, learn malpractices, and most importantly learn to neglect their studies. They are caught up in a vicious cycle. Economically poor parents are unable to provide quality education to their children who in turn never get good job opportunities and are faced with pick-up in most cases. The same profession as his family, earn low incomes, get addicted to alcohol, and fail to provide the bare minimum necessities for survival to the family, thus the struggle goes on for generation after generation with a very low rate of improvement of their socio-economic condition and thus they are trapped within a peculiar system. The study found that family income has a huge impact on their children's education.

The last objective of this study was to find out the problems faced by the students in the school who belong to the Santal Community. After analysing the collected empirical data and the ground-level direct observation it has been found that there are so many problems that are creating barriers in the path of education of the students belonging to the Santal community. Those are mainly related to the socio-economic condition and language.

Firstly, inadequate numbers of Santali-medium schools were identified, significantly impacting students' educational engagement since Santali is their mother tongue. Limited cultural representation, such as folk songs and dances within the curriculum, further disconnected students from the educational content, corroborating previous studies on cultural disconnect affecting educational outcomes (Banerjee & Adhikary, 2017; Ahmed & Tattwasarananda, 2018).

Secondly, a severe shortage of qualified Santali language teachers in schools exacerbated communication barriers within the classroom, negatively impacting the teaching-learning process and contributing to low academic performance (Mal & Patra, 2020).

Thirdly, the scarcity of textbooks and educational materials in Santali prevented effective classroom participation and assessment performance, supporting earlier findings on linguistic barriers in tribal education (Basu & Chatterjee, 2014).

Fourthly, limited guidance and the absence of competitive examination options in the Santali language have led to pessimism towards higher education opportunities among students, aligning with previous research indicating systemic barriers faced by tribal students in higher education access (Daripa, 2017).

Fifthly, socio-cultural acceptance issues emerged prominently, with guardians reporting humiliation and discrimination from other social groups, causing inferiority complexes and limiting social interactions and participation in school-related activities (Sarkar et al., 2008).

Additionally, it was noted that younger parents showed greater awareness and aspirations towards quality education despite financial constraints, contrasting older parents' lower educational expectations. Negative attitudes from school staff and other community members discouraged parent-teacher interactions, exacerbating communication gaps and reducing parental engagement in children's educational processes (Mal & Patra, 2020).

Finally, peer bullying and discriminatory attitudes within schools, labeled derogatory terms like ‘Rat eaters’, caused emotional distress and reduced attendance among students, further highlighting the socio-emotional challenges tribal students face (Ahmed & Tattwasarananda, 2018). Economic hardship compounded these issues, creating non-conducive home environments lacking study spaces and parental support due to occupational demands.

Suggestions to address the challenges

It is suggested that Santali medium schools should be established in all areas where Santal community people are living and Bengali and other medium schools should be kept as an option so that the students of the Santal community can survive. At the college and university levels, the Santali language should be taught as a language and promoted wherever possible.

Santali language-known teachers should be appointed where several students of the Santal community are studying more so that they can get help in their language and participate more and more in the teaching-learning process.

Besides academic education, it is also suggested that physical education and sports education should be provided to the students of the Santal community because they are relatively more physically stronger than children of other communities. If they get better and training then they can pursue their career accordingly. For promoting them to the state and national, international level athletics training and financial aid should be provided to them. So that they can build their career in various sports and can contribute to individual as well as national progress.

All the schools including Santali Medium should maintain the student-teacher ratio as recommended by RTE 2009 (Right to Education Act) because most of the schools are struggling for teachers.

There is a provision of scholarship but it is available from class five and the amount is not enough. So, it is suggested that most of the scholarship should be revised and made available for the students of the Santal community from class one whose family is below the poverty line (BPL).

All the members of the society are equally important, irrespective of their caste, creed, religion, region, or language etc. So, the guardians as well as members of the Santal community should be not discriminated against rather than treated as an integral part of our society.

More and more community development programs on education, health, sports, government policies, educational guidance, etc should be arranged so that the members of the Santal community become aware of the importance of education in their lives and could aware about their rights and the teachers also should be conscious about their duty.

Child marriage in the Santal community should be prevented strictly by implementing ‘the Prohibition of Child Marriage Act 2006’. Craft-centred and vocational education should be provided to the girls to empower them so that they can become economically independent. In particular, women's education should be emphasized through creating awareness regarding the importance of education in the Santal community.

It is also suggested that the culture and tradition of the Santal community should be included and promoted through school education so that other communities could be aware of their culture and tradition. The culture and tradition of the Santal community should be preserved and transmitted to the next generation through curriculum and co-curriculum activities, otherwise, that will not exist.

The government should allow NGOs and voluntary organizations to work at the ground level on the educational, health conditions, and awareness regarding alcohol addiction, etc to uplift the life of the Santal community.

Last but not least, all the members of society, they may be from the Santal community or other communities are also integral parts of society. So, they should be equally respected through empathy and fellow feelings, mutual respect to include in mainstream society. Because for creating an inclusive society the participation of all the members of all the communities is necessary.

Conclusion

The main purpose of this study was to find out the impact of the socio-economic condition of the family on the education of the students belonging to the santal community. We found that the family income of the students of the Santal community is very low because their parents are educationally backward and restricted to few occupations. Due to the low family income of the students of the Santal community, they are facing various socio-economic problems. Apart from this cultural, and linguistic problems are being faced by the students belonging to the Santal community. It was found that there are hardly any Santali medium schools, even in Bengali medium schools where they are studying there are not enough Santali language teachers, books and other learning materials. It was also found that the students of the Santal community are facing social acceptance issues. The present socio-economic and educational condition of the Santal community of Birbhum and Murshidabad district found in this study is almost similar to the 2011 census data. There is not remarkable change in the socio-economic and educational condition of the Santal community in Birbhum and Murshidabad over the last 12 years. More ground level research is still needed for generalizing and solving the problems faced by students of the Santal community. The findings of this study will help future researchers, NGOs and government organizations to understand the socio-economic condition of the students in the Santal community of Birbhum and Murshidabad and to take positive steps to bring them into mainstream society by solving their issue from the grass root level. It is only through quality education, awareness of parents, children, as well as the community at large that can improve their condition. Apart from the government initiatives, NGOs and each and every member of the society must realize the need and importance of inclusive education and join hands together in making this society a better society based on equality, equity, love, mutual respect and fellow feelings.

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APPLICATION OF MASLOW AND WIENERS ATTRIBUTION THEORY IN PRIMARY SCHOOL OF WEST BENGAL: A CASE STUDY

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ABSTRACT

This study examines the application of Maslow's Hierarchy of Needs and Weiner's Attribution Theory in understanding primary school students' academic performance and engagement in West Bengal. Maslow's framework highlights how unmet physiological and safety needs hinder motivation, while Weiner's theory explains how students' success and failure attributions impact resilience. Using a mixed-method approach, including surveys, interviews, and classroom observations, findings reveal that socio-economic challenges limit lower-tier needs, reducing academic motivation. Teacher feedback and parental involvement significantly shape students' attribution patterns, influencing their self-perception and effort. The study emphasizes the importance of fulfilling students' basic needs and fostering adaptive attributional patterns through effort-based praise and constructive feedback. Integrating these theories into teacher training and school policies can enhance student engagement and learning outcomes. This research underscores the role of psychological frameworks in addressing socio-economic disparities and improving primary education in West Bengal.

Keywords: Student Motivation, Maslow's Hierarchy, Attribution Theory, Teacher Feedback, Primary Education.

Introduction

Education in West Bengal has long been a focus of policy interventions aimed at bridging socio-economic divides and promoting equal learning opportunities. Despite government initiatives such as the Sarva Shiksha Abhiyan (SSA) and Mid-Day Meal Scheme, challenges persist in ensuring sustained student engagement and motivation (Mandal & Mandal, 2023). A key factor influencing student learning outcomes is the extent to which their basic physiological and psychological needs are met, aligning with Maslow's Hierarchy of Needs. Research indicates that children from lower-income households often face food insecurity, inadequate learning environments, and a lack of emotional support, all of which hinder their ability to focus and perform academically (Macalisang & Bonghawan, 2024).

In addition to economic factors, students' perceptions of success and failure significantly affect their motivation. Weiner's Attribution Theory suggests that attributing success to effort rather than external factors fosters resilience and a positive learning attitude (Wang & Hall, 2018). Teachers play a crucial role in shaping these attributions through feedback and reinforcement. However, studies have shown that in resource-constrained schools, limited teacher training on motivational strategies often results in ineffective classroom practices (Reeve et al., 2022). By investigating these issues through a psychological lens, this study

seeks to offer evidence-based strategies for improving motivation and learning outcomes in West Bengal's primary education system.

Background of the Study

Primary education plays a crucial role in shaping children's cognitive, emotional, and social development, particularly in regions like West Bengal, where socio-economic disparities influence learning experiences (Choudhury Joshi & Kumar, 2023) Education serves as a fundamental tool for personal and societal development, and the early years of schooling lay the foundation for lifelong learning and character building. However, disparities in socio-economic conditions often create barriers to academic success, making it essential to understand student motivation and engagement (Chattopadhay, 2015). Maslow's Hierarchy of Needs (1943) provides a holistic framework for understanding how unmet physiological and psychological needs impact a child's ability to focus and perform academically. Without fulfilling basic needs such as food, safety, and belonging, students struggle to achieve higher-order goals like esteem and self-actualization, which are critical for academic success. Studies show that students from economically disadvantaged backgrounds often face challenges in meeting these needs, creating barriers to their educational growth (Mukherjee & Bear, 2017).

Simultaneously, Weiner's Attribution Theory (1985) explains how individuals interpret the causes of their successes and failures. Attributions to internal factors like effort or ability versus external factors like luck or task difficulty significantly affect motivation and future behaviour. Research highlights that in primary school settings, teacher feedback plays a pivotal role in shaping these attributions, with positive reinforcement encouraging persistence and resilience in students (Macalisang & Bonghawan, 2024). This study examines the applicability of these theories in primary schools across West Bengal, aiming to identify the factors influencing student motivation and learning outcomes. By linking these theoretical frameworks to real-world educational challenges, this research provides actionable insights for educators, policymakers, and stakeholders in creating an inclusive and supportive learning environment.

Objectives

1. To analyse the applicability of Maslow's Hierarchy of Needs in understanding the motivational factors influencing primary school students in West Bengal.
2. To examine how socio-economic factors impact the fulfilment of basic needs (physiological, safety, and belonging) among primary school students.
3. To explore the role of teacher feedback and classroom practices in shaping students' attributional patterns based on Weiner's Attribution Theory.
4. To identify how students' attributions of success and failure influence their motivation, engagement, and academic performance.
5. To assess the differences in motivational and attributional patterns between students from government and private schools in West Bengal.
6. To provide recommendations for integrating psychological theories into teaching practices and school policies to enhance student outcomes.

Methodology

This case study employs a mixed-methods approach, incorporating surveys, observations, interviews, and secondary data analysis (Creswell & Plano Clark, 2018). The survey methodology involves questionnaires distributed to teachers, parents, and students to assess the application of Maslow's and Weiner's theories. In-depth interviews with teachers and

parents provide further insights into their perceptions of student motivation. Additionally, school performance records and attendance reports are analysed as secondary data sources. The study utilizes a non-probability convenience sampling method, selecting 100 participants—including teachers, parents, and students from primary schools in West Bengal—based on their availability and willingness to participate. While this method allows for practical and timely data collection, it limits the generalizability of the findings, as the sample may not fully represent the broader population. The survey was conducted in two districts, Purba Burdwan and Paschim Burdwan, to capture a broader understanding of the region's educational environment. However, including a comparative analysis across multiple districts beyond these two could further enhance the study's validity and strengthen the applicability of its conclusions to a wider demographic context.

Applying Maslow's Theory to Primary School Education:

According to Maslow's (1943) hypothesis, there is a hierarchy of requirements that determine human motivation, ranging from fundamental physiological necessities to self-actualization. Among the hierarchies are:

- Physiological needs
- Safety needs
- Social belonging
- Esteem needs
- Self-actualization

Application in a Primary School

- **Physiological Needs:** Ensuring that food, drink, and suitable learning environments are available to pupils is fundamental, as unmet basic needs can hinder cognitive function and learning.
- **Safety Needs:** Establishing a feeling of safety and security for pupils in the classroom is crucial, as a secure environment fosters better engagement and learning outcomes (Gillen-O'Neel & Fuligni, 2013).
- **Social Belonging:** Promoting group activities, team projects, and social interaction helps students feel accepted and part of a community, enhancing their motivation and classroom participation.
- **Esteem Needs:** Teachers can foster self-esteem by acknowledging students' efforts and achievements, which strengthens their confidence and willingness to take on challenges.
- **Self-Actualization:** Encouraging students to pursue creative projects and express themselves freely allows them to reach their full potential and develop intrinsic motivation (Maslow, 1943).

Applying Wiener's Attribution Theory to Primary School Education

Wiener's (1985) Attribution Theory is concerned with how people understand and assign reasons for their achievements or shortcomings. Within the framework of elementary school education, it can provide significant understanding of how pupils view their academic achievement and how these attitudes affect their motivation and education.

1. Types of Attributions:

According to Weiner, individuals attribute their successes or failures to three key factors:

- **Locus of Control:** Whether the source is external (such as task difficulty, luck) or internal (such as effort, competence).

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- **Stability:** The degree to which the cause—such as ability—is steady or unstable (e.g., effort, luck, attitude) (Weiner, 1985).
- **Controllability:** How much the person feels they can control the cause (e.g., effort) or how little control they feel they have over it (e.g., natural ability, external conditions).

2. Application in Primary School Education:

- **Understanding Student Mindset:** Primary school students may attribute their success or failure to different factors. A student who believes they succeed because they are "smart" (internal, stable) may react differently from one who attributes success to effort (internal, unstable, controllable).
- **Encouraging Effort-based Attribution:** Teachers can guide students to attribute their academic successes and failures to controllable factors, such as effort. This helps develop a growth mindset, where students believe they can improve through hard work (Dweck, 2006).
- **Teacher Feedback:** When teachers praise effort rather than intelligence, they help students understand that their success is within their control, fostering resilience and perseverance. For example, instead of saying "You are so smart," a teacher might say "You worked really hard on this assignment, and it paid off" (Kelley, 2018).
- **Motivational Impact:** Pupils who believe that their inability to succeed is due to an intrinsic, steady, or uncontrolled lack of aptitude are more inclined to quit up when faced with difficulties. On the other hand, those who believe that their lack of effort was due to an internal, unstable, or controllable factor are more likely to be inspired to try harder in the future.

3. Classroom Strategies:

- **Teaching Growth Mindset:** Educators can design activities and discussions that emphasize effort and learning from mistakes. For example, giving constructive feedback that focuses on how students can improve through practice (Graham & Taylor, 2016).
- **Modelling Resilience:** Teachers can model how to respond to challenges and failure, showing students that perseverance and hard work lead to growth.
- **Celebrating Process, Not Just Outcome:** By celebrating the process (e.g., effort, strategy, persistence) rather than just outcomes, teachers can reinforce positive attributions that motivate students to keep trying (Mandal & Mandal, 2023).

Comparison - Maslow's Hierarchy of Needs and Weiner's Attribution Theory:

Feature	Maslow's Hierarchy of Needs	Weiner's Attribution Theory
Focus	Basic needs and self-actualization	Causal explanations for success/failure
Level	External/environmental	Internal/cognitive
Educational Implication	Ensuring student safety, belonging, esteem	Promoting positive attributions (e.g., effort over luck)

(Source: Self-Developed)

While both models aim to explain student motivation, they operate on fundamentally different levels. Maslow's theory emphasizes external needs arranged in a hierarchical

structure—from physiological necessities to self-actualization—arguing that motivation is hindered if lower-level needs (e.g., food, safety) remain unmet (Maslow, 1943). In contrast, Weiner's attribution theory focuses on internal cognitive evaluations students make about their academic outcomes, such as whether success is due to effort, ability, or luck (Weiner, 1985). In educational contexts, Maslow's model highlights the importance of a secure and supportive school environment, recognizing that unmet emotional or physical needs can inhibit learning. Meanwhile, Weiner's framework is instrumental in shaping student mindset—encouraging them to attribute outcomes to controllable factors like effort, which fosters resilience and growth.

Analysis of the Findings from the Survey

Based on the chart, 68% of respondents are students, with 14% of respondents being parents and 12% administrators. Only 6% are teachers. Additionally, 68% of students have been associated with the school for more than five years, indicating a long-term engagement. This suggests that the majority of feedback is from students who are well-acquainted with the school environment. The low percentage of teachers (6%) and administrators (12%) may limit insights into the school's educational practices and policies from a broader perspective.

The chart shows that 32% of respondents believe students' basic physiological needs (food, water, shelter) are always met, while another 32% say they are often met. However, 25% report that these needs are sometimes met, and 12% indicate they are rarely met. While the majority perceive adequate provision of basic needs, a significant portion (37%) highlight inconsistency. This suggests that while the school makes efforts to fulfil students' fundamental needs, there may be gaps that require further attention and improvement.

The chart shows that 48% of respondents agree that students are provided with a safe and secure environment, while 23% strongly agree. However, 23% remain neutral, and 6% disagree, indicating concerns about safety. While the majority (71%) believe the school ensures a safe atmosphere, the presence of neutral and negative responses suggests potential issues like bullying or anxiety that need further investigation. Strengthening anti-bullying policies and student support systems may help improve perceptions of school safety.

The chart indicates that 67% of respondents believe the school promotes a sense of belonging either effectively (40%) or very effectively (27%). However, 24% feel it is only somewhat effective, while 9% believe it is not effective. This suggests that while most students experience positive peer relationships and teacher support, a notable portion may feel excluded or lack strong connections. To improve inclusivity, schools could implement mentorship programs, peer support groups, or more collaborative activities to strengthen student relationships.

The chart shows that 86% of respondents believe the school supports students' self-esteem through recognition and appreciation, with 34% agreeing to a great extent and 52% to some extent. However, 15% feel that the school does not actively contribute to students' self-esteem. While the majority perceive positive reinforcement efforts, there is room for improvement. Schools could enhance self-esteem by implementing more student recognition

programs, personalized feedback, and inclusive appreciation methods to ensure all students feel valued and supported.

The chart reveals that 85% of respondents believe students have opportunities for self-actualization through creative activities, problem-solving, and critical thinking, with 40% stating it happens frequently and 45% occasionally. However, 15% feel such opportunities are rare. While the majority perceive these opportunities positively, there is room for growth. Schools could further integrate project-based learning, interdisciplinary approaches, and open-ended problem-solving tasks to ensure all students consistently engage in activities that foster creativity, critical thinking, and self-expression.

The chart indicates that 73% of respondents believe teachers always (32%) or often (41%) encourage students to attribute success to internal factors like effort and ability. Meanwhile, 24% say this happens sometimes, and 4% think it happens rarely. This suggests that most teachers foster a growth mindset, reinforcing perseverance and skill development. However, the 28% who report sometimes or rarely highlight an opportunity for improvement. Schools could implement consistent reinforcement strategies to further strengthen students' self-efficacy and intrinsic motivation.

The data shows that 66% of teachers respond positively to students' failures—either by providing constructive feedback (33%) or offering guidance for improvement (33%). However, 22% ignore the failure, and 16% criticize students, indicating room for improvement in fostering a supportive learning environment. While many teachers adopt a growth-oriented approach, the 38% of less supportive responses suggest a need for professional development to ensure that all students receive encouragement and direction to learn from their mistakes effectively.

The data reveals that 71% of students are taught to differentiate between controllable and uncontrollable factors affecting their performance, while 29% are not. This suggests that most educators emphasize personal responsibility and self-awareness in learning. However, nearly a third of students lack this guidance, which may affect their ability to develop resilience and effective problem-solving skills. Ensuring that all students receive this instruction could help them manage setbacks more constructively and foster a growth mindset in their academic journey.

The data shows that 39% of teachers always help students set realistic goals based on their abilities and efforts, while 32% do so often. This suggests that a majority of students receive structured guidance in goal-setting. However, 20% report receiving this support only sometimes, and 10% rarely experience it. While most students benefit from goal-setting assistance, a portion may lack the necessary guidance, which could impact their motivation and achievement. Enhancing consistency in this area could further support student success.

The survey indicates that 39% of teachers always help students set realistic goals, while 32% do so often. This suggests that a majority of students receive consistent support in goal-setting. However, 20% of students experience this sometimes, and 10% rarely get such guidance. While most students benefit from structured goal-setting, a significant minority

may not receive adequate support. Schools and educators could work on ensuring all students consistently receive assistance in setting and achieving realistic academic and personal goals.

Discussion and Further Evaluation

The survey responses underscored several effective strategies for fostering student motivation: safe, supportive learning environments, personalized feedback, goal-setting, extracurricular engagement, and strong teacher–student relationships. However, to fully address your research objectives—notably linking Maslow and Weiner's theories to student outcomes in West Bengal—it's crucial to deepen the analysis in light of implementation barriers, teacher readiness, institutional constraints, and cultural context.

1. Implementation Barriers & Teacher Readiness

While participants highlighted the value of a positive environment and personalized feedback (Ryan & Deci, 2020). Hattie & Timperley (2007), observations revealed a significant gap between intent and practice. Many teachers are eager to motivate students, but few have received formal training in attribution theory or techniques derived from motivational psychology. As one teacher candidly noted, "We focus on completing the syllabus; we don't get trained on how students think about their failures. This gap reflects a broader disconnect between policy rhetoric and classroom reality. Core principles of Weiner's theory—such as praising effort over fixed ability—are only sporadically implemented, often replaced by outcome-driven recognition or, in negative cases, blame. This misalignment undermines efforts to build resilience and instill a growth mindset among students.

2. Institutional Support & Systemic Constraints

A stark contrast emerged between resource-rich private schools and under-resourced government schools. Private institutions often better fulfil Maslow's lower-tier needs—ensuring safety, belonging, and esteem—through smaller class sizes, counselling services, and psycho-social support. Conversely, government schools struggle with overcrowding, rigid curricula, and scant funding, limiting their ability to provide supportive environments. Institutional inertia also hinders reform. Administrators frequently prioritize academic compliance over pedagogical innovation, leaving little room to incorporate motivational frameworks into daily practice (Hattie & Timperley, 2007). Without budgetary or curricular flexibility, integrating Maslow- and Weiner-based strategies remains challenging.

3. Cultural Context & Student Perceptions

The findings showed that many students in West Bengal attribute academic outcomes to innate ability or fate—a locus of control inconsistent with Weiner's emphasis on controllable factors like effort. Further complicating this is a collective cultural orientation: parental expectations often frame success or failure as a family legacy, intensifying pressure and discouraging risk-taking or self-efficacy. To counter these norms, it's essential to contextualize motivational strategies—encouraging effort-oriented attributions while engaging parents in dialogue that reframes failure as a learning opportunity.

4. Policy Implications & Practical Recommendations

1. **Curricular Integration -** Embed motivational frameworks in educational standards—not just in teacher training, but also in classroom routines. Regular reflection exercises and effort-based discussions help reinforce internal attributions and a sense of agency.
2. **Professional Development for Teachers -** Mandatory training programs should include:

- Instruction on attribution theory, growth mindset, and motivational psychology.
- Case studies and role-play workshops.
- Coaching in effort-based praise and constructive feedback grounded in real classroom scenarios (Eccles & Roeser, 2011).

3. **Funding & Institutional Reform -** Allocate resources for:

- Reducing student-teacher ratios.
- Hiring counsellors or wellbeing officers.
- Periodic audits to evaluate how schools support students' psychological needs (physiological, safety, belonging, and esteem).

4. **Cultural & Family Engagement** - Strengthen parents' understanding of effort-based motivation via interactive workshops. Help families adopt a narrative that values progress and resilience over outcomes (Ryan & Deci, 2020).

Changes and Improvements

To enhance student motivation, a multifaceted and culturally responsive approach must be adopted by both policymakers and educators. While current educational practices have made strides in addressing student needs, further improvements are necessary to create more inclusive, engaging, and supportive learning environments.

- **For Policymakers** - Integrating motivational psychology—such as attribution theory and growth mindset principles—into national curriculum frameworks and teacher training modules is essential. This ensures that teachers are equipped with a strong theoretical foundation to understand and support diverse student motivations (Ryan & Deci, 2020). Allocation of resources should prioritize hiring school counsellors, implementing classroom mental health programs, and reducing student-teacher ratios by supporting smaller class sizes. These investments are proven to significantly enhance student well-being and academic engagement (Earthman, 2004). Furthermore, cultural sensitivity training in curriculum design must acknowledge and address the socio-cultural dimensions of student self-perception and motivation. This includes integrating content that reflects students' backgrounds and familial expectations, which is particularly important in multicultural societies.
- **For Educators -** Motivation-enhancing strategies must be embedded into daily teaching practices. Effort-focused feedback, emphasizing improvement, resilience, and effective learning strategies, can help students reframe failure and build confidence (Dweck, 2006). Professional development in motivational theories such as self-determination theory, Maslow's hierarchy of needs, and Weiner's attribution theory can enable teachers to recognize the underlying factors that affect student motivation and to respond effectively (Ryan & Deci, 2020). In addition, culturally responsive teaching practices that validate students' experiences while normalizing struggle as a part of learning are crucial for fostering trust and belonging.
- **Holistic Motivation -** To further support holistic motivation, incorporating yoga, mindfulness, physical activities, and reading sessions into the school day can help fulfil students' psychological and physiological needs, promoting a balanced learning experience (Ormrod, 2020). Technology integration, including gamified learning tools and interactive multimedia, can make learning more engaging and dynamic, catering to various learning styles (Clark & Mayer, 2016).

• **Infrastructure development -** Enhancing classrooms, libraries, and laboratories, along with ensuring proper ventilation and air conditioning, especially in warmer regions, creates a more comfortable and focused learning environment (Earthman, 2004). Additionally, involving students in curriculum decisions and allowing choice in assignments or projects based on their interests promotes autonomy, intrinsic motivation, and deeper learning engagement (Deci & Ryan, 2000). Finally, fostering a growth-oriented culture that values resilience, realistic goal-setting, and healthy peer competition helps students view challenges as opportunities for growth rather than threats, mitigating anxiety and fostering perseverance.

Conclusion

Schools in West Bengal should prioritize fulfilling students' basic needs by ensuring access to nutritious meals and a safe learning environment. When students' physiological and safety needs are met, they are better positioned to focus on learning. Teacher training programs should incorporate Maslow's hierarchy of needs and Weiner's attribution theory to enhance motivational strategies. Understanding these psychological frameworks can help educators create supportive environments that nurture student growth. Classroom practices should emphasize effort-based praise and constructive feedback, fostering resilience and a growth mindset. Encouraging students to view challenges as opportunities for learning can improve their academic performance and self-confidence. Additionally, policies should support inclusive and engaging learning environments that cater to diverse student needs, promoting equity and participation. By integrating these principles into educational practices, schools can create a motivating and supportive landscape, ultimately enhancing student engagement, well-being, and long-term academic success.

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