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# INDIAN JOURNAL OF ADULT EDUCATION

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# Institutional Autonomy, Organizational Climate and the Pursuit of Creativity among Students of Higher Education

• **Kalpana Behera**[1] • **Shisira Bania**[2]

## Abstract

This study delves into the intricate relationships between organizational climate, college autonomy, and the creativity of students in higher education in India. Employing a quantitative research design, data were collected from 480 students across 12 randomly selected autonomous colleges. Utilizing tools such as the Autonomous College Organizational Climate Description Questionnaire (ACOCDQ) and Dr. B. K. Passi's Creativity Test, the study aimed to discern the individual and combined effects of organizational climate and college autonomy on student creativity. The findings revealed that both organizational climate and the type of college autonomy significantly influence student creativity. Notably, students from government autonomous colleges exhibited higher creativity levels compared to their counterparts in non-government autonomous colleges. Furthermore, a favourable organizational climate was positively correlated with enhanced creative abilities. These insights underscore the pivotal role of institutional environments and governance structures in fostering creativity among students in higher education.

**Keywords:** *Organizational climate, creativity, institutional autonomy, higher education.*

## Introduction and Rationale

Creativity, widely recognized as a critical component of innovation and problem-solving, has become increasingly central to the mission of higher education institutions (HEIs) worldwide (Jakovljevic, 2019). The ability of students to think creatively is essential not only for their personal and academic development but also for their future professional success in a rapidly evolving global economy. Several studies have investigated the relationship between creativity and various factors. McLellan

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and Nicholl (2008) found classroom climate to be influential in fostering student creativity. Naderi et al. (2010) established a link between creativity and academic achievement for both genders. Ayoufu (2012) identified intrinsic motivation, psychological empowerment, and support for innovation as key contributors to students' creativity. Afshari et al. (2012) found a positive correlation between transformational leadership and student creativity. The impact of organizational climate on students' creative self-efficacy and innovative behavior was highlighted by Chang and Yang (2012). Eishani (2014) further supported the connection between learning styles and creativity. Shirzadi (2006) emphasized the importance of organizational climate in education for fostering creativity. The moderating role of organizational climate on the relationship between transformational leadership and follower creativity was confirmed by Yildiz and Ozcan (2014).

Despite its importance, there is a notable paucity of research that comprehensively examines the environmental factors within educational institutions that either foster or hinder student creativity. Specifically, the interaction between organizational climate and the degree of institutional autonomy has not been thoroughly explored, leaving a significant gap in understanding how these factors influence creative outcomes among students.

In educational settings, a positive organizational climate—characterized by support for innovation, open communication, and an emphasis on autonomy—has been shown to encourage creativity among students (Greenier et al., 2023). Research on organizational climate and job satisfaction has yielded mixed results. Natarajan (2001) found a positive correlation between school climate and teacher job satisfaction. Griffith (2006) supported this finding, linking positive organizational climate to higher job satisfaction and organizational performance. Vashdi et al. (2012) expanded on this by identifying multiple climates within schools that positively influence teacher satisfaction and organizational citizenship behavior. However, much of the existing literature focuses on organizational climate in business or industrial contexts, with relatively fewer studies examining its role in educational environments, particularly in higher education. Furthermore, research on creativity in education tends to focus on individual traits and classroom-level interventions (Tzachrista et al., 2023), while often neglecting broader institutional factors such as organizational climate and college autonomy. The autonomy of educational institutions—the degree to which colleges and universities can govern themselves independently of external authorities—has been linked to various positive outcomes, including academic excellence and institutional innovation (Aithal & Aithal, 2019; Sankaran & Joshi, 2016). Granting autonomy to higher education institutions significantly enhances quality across multiple

dimensions (Bania & Sarangi, 2020; Bania et al., 2021). The National Education Policy of India (NEP-2020) also recommends the implementation of graded autonomy in a phased manner to promote institutional excellence and accountability (Bania, 2021). However, there is limited empirical evidence on how this autonomy interacts with the internal climate of the institution to impact creativity among students.

While existing studies highlight the positive effects of a supportive organizational climate on student outcomes, and the benefits of autonomy in enabling institutions to tailor their educational approaches, there is a conspicuous lack of empirical research examining how these two factors interact to influence creativity. This is particularly relevant in the context of India, where educational reforms have increasingly empowered autonomous colleges with greater control over their academic and administrative processes. Odisha, with its diverse array of autonomous institutions, presents a unique opportunity to investigate these dynamics in a setting that is representative of broader trends in Indian higher education. By examining how different organizational climates within autonomous colleges either facilitate or hinder creativity, this study aims to generate insights that can inform both the management of these institutions and the policies that govern them. Ultimately, the findings are expected to contribute to a deeper understanding of the optimal conditions for fostering creativity, providing actionable recommendations for educators, administrators, and policymakers who are striving to enhance the creative capacities of students. These capacities are crucial for their personal and professional success, as well as for broader societal progress.

## Objectives of the study

(i) To study the effect of organizational climate on creativity of the students of higher education;
(ii) To study the effect of the type of the autonomous colleges on creativity of the students of higher education;
(iii) To study the interaction effect of organizational climate and type of autonomous colleges on creativity of the students of higher education.

## Hypotheses of the study

(i) There exists independent effect of organizational climate on creativity of the students of higher education.
(i) There exists independent effect of the type of autonomous colleges on creativity of the students of higher education.

(ii) There exists interaction effect of organizational climate and type of autonomous colleges on creativity of the students of higher education.

## Research Methodology

**Table 1: Design of the study**

| S.N. | Objectives | Nature of data | Data source | Tool | Sample | Data collection procedure | Analysis procedure |
|---|---|---|---|---|---|---|---|
| 1. | To study the effect of the organizational climate on creativity of the students. | Information on organizational climate of students and creativity of students in autonomous colleges of Odisha | Students | Questionnaire for students, Creativity Test of Dr. B.K. Passi | 480 students | By administering questionnaire through personal contract and B.K. Passi Creativity Test | ANOVA & Scheffe |
| 2. | To study the effect of the type of the autonomous colleges on creativity of the students. | Information on organizational climate of students and creativity of students in autonomous colleges of Odisha | Students | Questionnaire for students, Creativity Test of Dr. B.K. Passi | 480 students | By administering questionnaire through personal contract and B.K. Passi Creativity Test | ANOVA & Scheffe |
| 3. | To study the interaction effect of organizational climate and type of autonomous colleges on creativity of the students. | Information on organizational climate of students and creativity of students in autonomous colleges of Odisha | Students | Questionnaire for students, Creativity Test of Dr. B.K. Passi | 480 students | By administering questionnaire through personal contract and B.K. Passi Creativity Test | ANOVA & Scheffe |

To unveil the intricate relationship between organizational climate, college autonomy, and creativity, this study employed a quantitative approach using a descriptive survey method to obtain precise and pertinent information concerning

the effect of organizational climate and type of autonomous college on student creativity in higher education institutions in Odisha, India. The population for the study comprised students from both government and non-government autonomous degree colleges in the state. The sample was drawn using random sampling techniques and included 480 students from 12 educational institutions across 8 districts of Odisha. Data was collected on various dimensions of organizational climate such as infrastructure, teaching-learning materials, curricular, co-curricular, extra-curricular activities, and examination systems with details provided in Table 1.

## Data Collection Instruments

Self-reported questionnaires were administered to students to assess their perceptions of the organizational climate within their college. Autonomous College Organizational Climate Description Questionnaire (ACOCDQ) for students was developed by the investigators for measuring organizational climate of autonomous colleges of Odisha. Table 2 here indicates this in detail.

**Table 2: Questionnaire for Students on Organizational Climate**

| S.N. | Statement | Statement / Dimension | Number of Questions |
|---|---|---|---|
| 1. | Organizational Climate | Infrastructure facilities | 8 |
| | | Communication | 3 |
| | | Library facilities | 5 |
| 2. | Academic Achievement | Learning environment | 6 |
| | | Curricular activities | 8 |
| | | Co-curricular activities | 5 |
| 3 | Creativity | Reflectiveness | 2 |
| | | Spontaneity | 2 |
| | | Risk taking | 1 |
| | | **Total** | **40** |

## Reliability and Validity of the ACOCDQ

The reliability of the ACOCDQ was established through spilt-half reliability method which was computed by using Rulon's formula. The reliability index was found to be .8576 and was considered to be sufficiently high for the purpose of this study.

## Validity of the ACOCDQ

Content validity was established by asking the judges to report whether the item described organizational climate of degree colleges. It was reported that the statements included in the scale had very small Q-values indicating consistency among the judges. On the basis of that it was concluded that the ACOCDQ had sufficiently high content validity.

## Questionnaire of Creativity Test for the Students

Dr. B.K. Passi's Test of Creativity (PTC: Verbal and Non-verbal) designed by B.K. Passi (2001) was used. All the tests are available both in Hindi and English. His intent was to set the tone so that examinees would enjoy the activities. Examinees should be encouraged to have fun and should experience passive. In all six tests namely; (1) The Seeing Problems Test, (ii) The Unusual Uses Test, (iii) The Consequences Test, (iv) The Test of Inquisitiveness. The components and objects of Dr. B.K. Passi Creativity Test was reflected in table-3.

**Table 3: Dr. B.K. Passi Creativity Test**

| S.N. | Components | Sub Components (Defects & Problems) | Sub Components (Uses) |
|---|---|---|---|
| 1. | Seeing the Problem Test | (a) Shoe<br>(b) Pen<br>(c) Chair<br>(d) Post Card | |
| 2. | Unusual Uses Test | | (a) Piece of cloth<br>(b) Bottle |
| 3. | Consequence Test | (a) If human beings start flying like birds<br>(b) If all houses start flying<br>(c) If all people become mad<br>(d) If all females become male | |
| 4. | Test of Inquisitiveness | Any question to be provided by the students from their own | |

The table depicts that Dr. B.K. Passi Creativity Test includes various components like seeing the Problem Test, Unusual Test, Consequence Test and Test of Inquisitiveness.

## Data Analysis

The collected data underwent rigorous statistical analysis using two-way ANOVA and Scheffe Tests. Analysis of Variance (ANOVA) was used to determine if significant differences existed in creativity based on college type (autonomous vs. non-autonomous) and organizational climate. Following a significant ANOVA result, post-hoc Scheffe tests were conducted to pinpoint specific group differences in creativity across various combinations of college autonomy and organizational climate.

## Results and Discussion

### Effect of Type of Autonomous Colleges on Creativity of the Students of Higher Education

Collapsing organizational climate, table no. 4 shows that there is significant independent effect of type of autonomous colleges on creativity of students (F=14.54; df = 476; p <.01).

**Table 4: Summary of ANOVA for Creativity of Students Studying in Government and Non-Government Autonomous Colleges with High and Low Organizational Climate (N=480)**

| Sources of Variance | Degree of Freedom (Df) | Sum of Squares (SS) | Mean Square (MS) | F-ratio |
|---|---|---|---|---|
| Types of Autonomous Colleges | 1 | 11603.34 | 11603.34 | 14.54** |
| Organizational Climate | 1 | 165169.2 | 165169.2 | 206.97** |
| Interaction | 1 | 4864.13 | 4864.13 | 6.09 |
| Within | 476 | 379872 | 798.05 | |
| **Total** | **479** | **561508.67** | | |

Df 1/476 at .05 level = 3.86, .01 level = 6.7 ** Significant at .01 level

Therefore, the null hypothesis stating that there exists no independent effect of type of autonomous colleges on creativity of students was rejected in favour of research hypothesis.

**Table 5: Summary of the Mean Creativity Scores of Students Studying in Government and Non-Government Autonomous Colleges (N=480)**

| Government Autonomous Colleges | Non-Government Autonomous Colleges |
|---|---|
| 123 | 113.17 |

Further, as seen in table no. 5 it was found that the creativity of students studying in government autonomous colleges (M=123) was better than the creativity of students studying in non-government autonomous colleges (M=113.17). Therefore, the null hypothesis stating that there exists no difference between the creativity of students studying in government autonomous colleges and non-government autonomous colleges was rejected in favour of research hypothesis.

**Effect of Organizational Climate on Creativity of the Students**

Collapsing type of colleges, table no. 4 shows that there is significant independent effect of organizational climate on creativity of students. Thus, the null hypothesis stating that there exists no independent effect of organizational climate on creativity of students was rejected in favour of research hypothesis.

**Table 6: Summary of the Mean Creativity Scores of Students Studying in High Organizational Climate and Low Organizational Climate (N=480)**

| High Organizational Climate | Low Organizational Climate |
|---|---|
| 136.64 | 99.53 |

Further, it as seen in table no. 6, it was found out that the creativity scores of students with high organizational climate (M=136.64) was better than the creativity scores of students with low organizational climate (M=99.53). Therefore, the null hypothesis stating that there exists no difference between the creativity of students score with high organizational climate is better than the creativity of students with low organizational climate was rejected in favour of research hypothesis.

**Interaction Effect of Organizational Climate and Type of Autonomous Colleges on Creativity**

As it can be seen, in table no. 4, it was found out that there was significant interaction effect of type of autonomous colleges and organizational climate on creativity of students ($F = 6.09$; $df = 476$; $p < .05$). Therefore, the null hypothesis

stating that there exists no significant interaction effect of type of autonomous colleges and organizational climate on creativity was rejected in favour of research hypothesis.

Further, table no.7 showing intergroup comparisons of students studying in two different type of autonomous colleges such as government autonomous colleges and non-government autonomous colleges with high organizational climate and low organizational climate reveals that the creativity of students studying in government autonomous colleges with high organizational climate differed significantly from the creativity of students studying in government autonomous colleges with low organizational climate ($F=23.68$; $df=476$; $p < .01$) in favour of students studying in government autonomous colleges with high organizational climate ($M=138.37 > M = 107.63$).

**Table 7: Summary of F-value for Intergroup Comparisons of Students on Creativity Using Scheffe Test (N=480)**

| Groups | Mean Score | F-ratio |
|---|---|---|
| Government autonomous colleges with high organizational climate<br>Vs<br>Government autonomous colleges with low organizational climate | 138.37<br>107.63 | 23.68** |
| Government autonomous colleges with high organizational climate<br>Vs<br>Non- government autonomous colleges with high organizational climate | 138.37<br>134.9 | 0.31 |
| Government autonomous colleges with high organizational climate<br>Vs<br>Non-government autonomous colleges with low organizational climate | 138.37<br>91.43 | 55.21** |
| Government autonomous colleges with low organizational climate<br>Vs<br>Non- government autonomous colleges with high organizational climate | 107.67<br>134.9 | 18.58** |
| Government autonomous colleges with low organizational climate<br>Vs<br>Non- government autonomous colleges with low organizational climate | 107.63<br>91.43 | 6.58 |
| Non- government autonomous colleges with high organizational climate<br>Vs<br>Non- government autonomous colleges with low organizational climate | 134.9<br>91.43 | 47.35** |

Df 1/476 at .05 level = 3.86 ; .01 level = 6.70 ** significant at .01 level

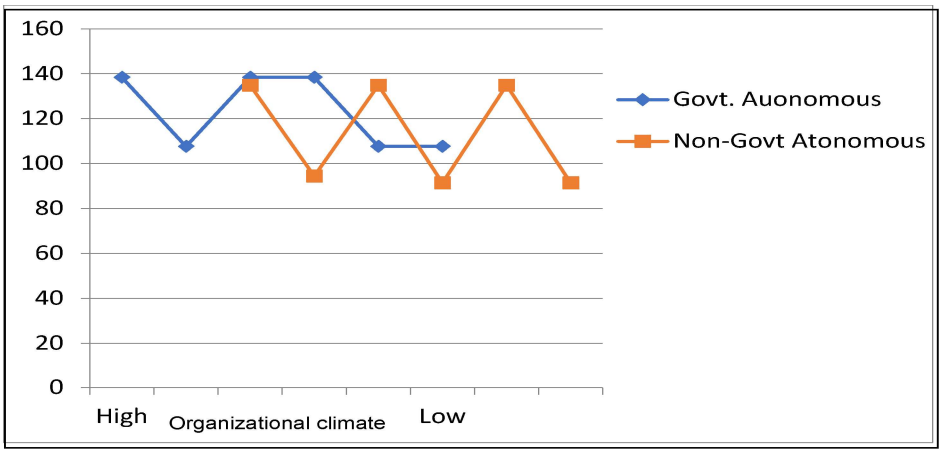


**Fig.1: (Ref. Table No. 7) Interaction effect of types of autonomous colleges and organizational climate on student's creativity**

Further, table no. 7 shows that the creativity of students studying in government autonomous colleges with high organizational climate did not differ significantly from the creativity of students studying in non-government autonomous colleges with high organizational climate ($F = 0.31$; $df = 476$ ; $p > .05$). In addition to it, table no. 7 shows that the creativity of students studying in government autonomous colleges with high organizational climate differed significantly from the creativity of students studying in non-government autonomous colleges with low organizational climate ($F=55.21$; $df = 476$; $p <.01$) in favour of students studying in government autonomous colleges with high organizational climate ($M=138.37 > M = 91.43$).

Further, table no. 7 shows that the creativity of students studying in government autonomous colleges with low organizational climate differed significantly from the creativity of students studying in non-government autonomous colleges with high organizational climate ($F=18.58$; $df=476$; $p <.01$) in favour of students studying in non-government autonomous colleges with high organizational climate ($M=107.67 < M=134.9$).

Further, table no. 7 shows that the creativity of students studying in government autonomous colleges with low organizational climate differed significantly from the creativity of students studying in non-government autonomous colleges with low organizational climate ($F=6.58$;$df = 476$; $p <.05$) in favour of students studying in government autonomous colleges with low organizational climate ($M=107.63 > M = 91.43$).

Further, table no. 7 shows that the creativity of students studying in non-government autonomous colleges with high organizational climate differed significantly from the creativity of students studying in non-government autonomous colleges with low organizational climate ($F=47.35$ ; $df=476$ ; $p<.01$) in favour of students studying in non-government autonomous colleges with high organizational climate ($M=134.9 > 91.43$).

## Major Findings

The study yielded the following key findings:

i. There is a significant independent effect of the type of autonomous college on students' creativity.

ii. Students in government autonomous colleges demonstrated higher creativity than those in non-government autonomous colleges.

iii. There is a significant independent effect of organizational climate on students' creativity.

iv. Students in colleges with a high organizational climate exhibited greater creativity than those in colleges with a low organizational climate.

v. There was a significant interaction effect between the type of autonomous college and organizational climate on students' creativity.

vi. Students in government autonomous colleges with a high organizational climate were more creative than those in government autonomous colleges with a low organizational climate.

vii. Creativity levels of students in government autonomous colleges with a high organizational climate were similar to those in non-government autonomous colleges with a high organizational climate.

viii. Students in government autonomous colleges with a high organizational climate were more creative than those in non-government autonomous colleges with a low organizational climate.

ix. Students in non-government autonomous colleges with a high organizational climate were more creative than those in government autonomous colleges with a low organizational climate.

x. Students in government autonomous colleges with a low organizational climate were more creative than those in non-government autonomous colleges with a low organizational climate.

xi. Students in non-government autonomous colleges with a high organizational climate were more creative than those in non-government autonomous colleges with a low organizational climate.

## Conclusion

This study provides valuable insights into the factors that influence creativity in higher education, emphasizing the importance of both organizational climate and institutional autonomy. The research demonstrates that a supportive organizational climate—characterized by openness, innovation, and intellectual freedom—significantly enhances student creativity. Additionally, the autonomy of educational institutions plays a crucial role in providing the flexibility needed to nurture creative thinking. The interaction between these factors suggests that creativity is most effectively fostered in environments where both autonomy and a positive organizational climate are present.

The implications of these findings are far-reaching, offering guidance for educators, administrators, and policymakers committed to cultivating creativity in higher education. By creating and maintaining environments that support creative exploration, and by protecting the autonomy of institutions, students can be better prepared to meet future challenges with innovative and creative solutions. As higher education continues to evolve in response to global demands, these insights will be increasingly critical in shaping the educational experiences that define the next generation of thinkers, leaders, and innovators.

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# Effectiveness of E-Learning Module in Teaching Smartphone Applications Designed for the Elderly

**• Avani Maniar[1] • Krutika Bhate[2] • Nitin Kashyap[3]**

## Abstract

In India, there is a substantial number of smartphone users, with the elderly population increasingly adopting this technology. This study explores the effectiveness of an e-learning module designed to teach elderly individuals how to use smartphone applications tailored to their needs. The primary objective is to assess the awareness and usage of smartphone applications among the elderly, as well as to develop and evaluate an e-learning module that enhances their capability to use these applications. The study also aims to determine the effectiveness of the module across different demographic segments of the elderly population. A purposive sampling method was used to select 81 elderly participants from Vadodara city. Data were collected using a structured questionnaire, and analysis was conducted with statistical software, primarily Microsoft Excel. A comprehensive e-learning module was developed and validated by experts to facilitate the learning process for the elderly. The findings revealed that most participants were retired, in good health, and used Android smartphones for more than two hours daily, predominantly accessing the internet via mobile data. While smartphones were commonly used for social media, video calling, and entertainment, few participants utilized applications specifically designed for their age group. Most expressed interest in learning about new applications through the e-learning module. The module proved effective in improving participants' knowledge and usage of smartphone applications, with consistent results across different age groups, occupational statuses, and health conditions. However, light users of smartphones benefited more from the module than moderate users.

**Keywords:** *Smartphone, applications, elderly, e-learning module.*

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## Introduction

Smartphones have revolutionized various facets of human life, including communication, education, and personal development. In India, the proliferation of smartphones has extended across all demographics, including the elderly population. Although the rapid global adoption of smartphones has included older adults, the pace has been slower for this group due to several barriers. This demographic shift presents both challenges and opportunities, particularly in enhancing the elderly's engagement with technology to improve their quality of life. Older adults often face difficulties in adopting new technologies because of physical, cognitive, and psychological barriers. These include diminished eyesight and dexterity, difficulty in learning unfamiliar technologies, and psychological resistance caused by fear of failure or lack of confidence. Nevertheless, the potential benefits of smartphone applications for this demographic are substantial - ranging from improved social connectivity to better health management and greater access to information.

Smartphones can foster social connections, provide access to health and wellness resources, and offer entertainment as well as lifelong learning opportunities. In response, several smartphone applications have been specifically designed for elderly users. These applications address a wide range of needs, including cognitive stimulation, safety, security, interpersonal connections, healthcare, and the development of new interests. They serve as valuable tools that enhance psychological well-being and enable seniors to participate more actively in their communities. However, despite their willingness to embrace technology, older adults often struggle with complex smartphone interfaces. Usability becomes crucial, as seniors may face distinct challenges that require tailored solutions. Senior-specific applications therefore incorporate special features to meet their needs in areas such as shopping, travel, education, health, physical activity, and security. For this reason, it is imperative to provide targeted instruction to seniors on how to use such applications effectively. While many mobile apps are available, the present study selected a few that are both useful and easy for the elderly to understand. This study aims to bridge the gap by developing and assessing an e-learning module to teach elderly individuals how to use smartphone applications.

## Objectives

The study's primary objectives are threefold:

1. To assess the awareness and usage patterns of smartphone applications among the elderly.

2. To develop an e-learning module that effectively teaches elderly individuals how to use these applications.

3. To evaluate the effectiveness of the e-learning module in improving the digital literacy of elderly users with respect to their age, smartphone usage, health status, and occupational status.

## Review of Literature

The literature review covers several key areas:

1. Digital Literacy and the Elderly: Studies indicate that digital literacy among the elderly is crucial for social inclusion and access to information. However, many elderly individuals lack the necessary skills to use digital technologies effectively.

2. E-learning for the Elderly: E-learning has been recognized as a valuable tool for adult education. Tailored e-learning modules can address the specific needs and limitations of elderly learners, providing them with flexible and accessible means of acquiring new skills.

3. Smartphone Applications for the Elderly: There is a growing market for smartphone applications designed specifically for elderly users. These include health monitoring tools, communication aids, and social media platforms tailored to their needs.

## Methodology

The study employs a mixed-method approach, combining quantitative and qualitative research techniques. Purposive sampling was used to select 81 elderly participants from Vadodara city. Data were collected through structured questionnaires and analyzed using Microsoft Excel. The development of the e-learning module involved several stages, including content creation, expert validation, and pilot testing.

## Sampling and Data Collection

Participants were selected based on specific criteria: they had to be aged 60 or above, use a smartphone, and be willing to participate in the study. The questionnaire covered various aspects, including demographic information, health status, current smartphone usage patterns, interest in learning new applications, and feedback on the e-learning module.

## E-learning Module Development

The e-learning module was designed to be user-friendly and accessible, considering the physical and cognitive limitations of the elderly. It included video tutorials, interactive exercises, and assessments to reinforce learning. The content focused on commonly used applications such as social media, health monitoring apps, and communication tools.

## Validation and Testing

A panel of experts in gerontology, education, and technology validated the module. Pilot testing was then conducted with a small group of elderly users to refine the content and ensure usability. Feedback from the pilot test was used to make adjustments before full-scale implementation.

## Findings

The study's findings are categorized into four main areas: demographic and health status of participants, current smartphone usage patterns, interest in the e-learning module, and the module's effectiveness.

## Demographics and Health Status

Most participants were retired, in relatively good health, and used Android smartphones for more than two hours daily. The majority accessed the internet via mobile data rather than Wi-Fi, reflecting the broader trend of mobile internet usage in India.

## Smartphone Usage Patterns

A considerable number of elderly participants had been using smartphones for more than two hours daily for over four years. They commonly used smartphones for social media, video calling, and entertainment. However, few utilized applications specifically designed for the elderly, such as health monitoring apps or services tailored to age-related needs. This gap highlights the importance of targeted education to encourage the use of beneficial applications.

## Interest in the E-learning Module

A large majority of participants expressed interest in learning about new applications through the e-learning module. Interest was particularly strong among those who felt their current knowledge was insufficient. This enthusiasm indicates a latent demand for educational resources tailored to elderly learners.

## Effectiveness of the E-learning Module

The module improved participants' knowledge and usage of smartphone applications. Pre- and post-test assessments showed significant improvements in digital literacy. Participants appreciated the module's design, which included clear instructions, interactive elements, and practical exercises. After completing the module, they reported greater willingness to use elderly-specific applications related to entertainment, social interaction, and health.

## Impact of Demographic Variables

The effectiveness of the e-learning module was consistent across different age groups, occupational statuses, and health conditions. However, light users of smartphones benefited more from the module than moderate users, suggesting that those with less prior experience gained the most from structured learning. Similar findings have been reported in earlier research. Zhao et al. (2020) designed a smartphone operation manual for elderly participants. After 20 weeks, the intervention group showed significant improvements in smartphone usage competency (except health applications) and overall quality of life compared to the control group. Similarly, Lu, Wen, and Chang (2017) developed an assessment of smartphone usage competence and a training programme for the elderly. Their results indicated significant improvement in competencies after training, though some items remained difficult for participants to comprehend. These studies, along with the present findings, highlight the value of structured training in improving smartphone literacy among older adults.

## Discussion

The study underscores the potential of e-learning modules to enhance the digital literacy of elderly individuals. The positive reception and demonstrated effectiveness of the module emphasize the importance of developing educational tools tailored to the specific needs of older learners. Continuous support and encouragement are essential to help the elderly embrace new technologies, thereby improving their quality of life and keeping them connected with the world around them.

## Challenges and Limitations

Several challenges were encountered during the study, including initial resistance from some participants who were skeptical about their ability to learn new technology. Additionally, the study was limited to a specific geographic area and demographic, which may affect the generalizability of the findings.

## Recommendations

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

1. **Development of More E-learning Resources**: Additional modules focusing on diverse aspects of smartphone usage could further benefit elderly learners.
2. **Community Programmes**: Initiatives promoting the adoption of smartphone applications among the elderly should be supported through community programmes and the active involvement of family members.
3. **Further Research**: Continued research is needed to refine e-learning tools and assess their long-term impact on the digital literacy and quality of life of the elderly.

## Implications

The findings suggest several policy implications:

1. **Integration into Community Programmes**: Local governments and community organizations should incorporate digital literacy training for the elderly into their programmes. Regular workshops and sustained support can facilitate ongoing learning and adaptation to emerging technologies.
2. **Support for E-learning Development**: Policy initiatives should prioritize the development of e-learning modules tailored to different aspects of smartphone usage for older adults. This may include funding for research and development, as well as partnerships with technology companies.
3. **Access to Technology**: Ensuring that elderly individuals have access to affordable smartphones and reliable internet connections is crucial. Subsidies or programmes providing discounted devices and services can help bridge the accessibility gap.

## Conclusion

This study highlights the significant impact of e-learning modules in teaching elderly individuals how to use smartphone applications. The positive reception and

demonstrated effectiveness of the module emphasize the importance of developing targeted educational resources for the elderly population. By addressing their specific needs, such modules can improve digital literacy, strengthen social connectivity, and contribute to overall well-being. The findings provide a strong foundation for future research and policy initiatives aimed at promoting digital inclusion for the elderly.

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# Transforming Education Today and Tomorrow with AI-Powered Classrooms: Impact of AI on Teaching and Learning

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## Abstract

This article explores the transformative potential of Artificial Intelligence (AI) in enhancing teacher capabilities and preparing educators for AI-powered classrooms. It highlights how AI can automate administrative tasks, personalize learning, and provide data-driven insights to improve student outcomes. The article emphasizes the importance of training teachers in AI literacy, updating curricula, and investing in infrastructure to support seamless integration. It also addresses ethical considerations, data privacy, and fostering a culture of adaptability within educational institutions. Ultimately, it positions AI as a powerful tool that complements traditional teaching, enhancing educational experiences and outcomes for both educators and students.

**Keywords:** *Artificial intelligence, personalized learning, adaptive learning, grading automation, predictive analytics, ethical guidelines, AI literacy.*

## Introduction

Globally, higher education is essential for creating moral professionals and citizens. Both opportunities and problems for the conventional educational model have arisen with the advent of generative AI (GenAI) (Chiu, 2024). AI is increasingly playing a vital role across various sectors of the economy, including higher education. Significant advancements in the idea of "Artificial Intelligence in Education (AIED)" have occurred recently (Unnisa Begum, 2024). AI-powered classrooms are transforming education by introducing new possibilities for personalized, efficient, and interactive learning experiences that were previously unimaginable. The impact of AI on teaching and learning reaches beyond simply adding technology into the classroom; it fundamentally reshapes how knowledge is imparted, how students engage with content, and how educators support diverse learning needs (Ouyang & Jiao, 2021). In these AI-enhanced environments, both teachers and students benefit from a range of advanced tools that support tailored learning paths, data-driven insights, and

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innovative methods to make learning more accessible, engaging, and impactful. As AI becomes an integral part of education today, it sets the foundation for a future where classrooms are equipped not only to teach facts but to foster critical thinking, creativity, and a love for lifelong learning (Ouyang & Jiao, 2021). One of the most significant ways AI impacts teaching and learning is through personalized education. AI systems can evaluate a student's strengths, weaknesses, learning pace, and preferences, enabling the creation of personalized learning paths tailored to each student's unique needs. In traditional classrooms, teachers often face challenges in differentiating instruction to address the diverse needs of learners due to time and curriculum constraints. However, AI-powered adaptive learning platforms can dynamically adjust content in real time, offering additional practice, alternative explanations, or advanced materials based on the student's progress and comprehension. For instance, a student struggling with fractions in a math class may receive targeted exercises that build foundational skills before progressing, while a student excelling in the topic may be offered more challenging problems.

The incredible potential of artificial intelligence (AI) to transform a variety of industries has attracted a lot of attention and acknowledgment, and the education sector is no exception (Tayan et al., 2024). AI-powered classrooms also transform the role of teachers by freeing them from routine tasks, enabling them to focus on higher-value instructional activities and meaningful interactions with students. Traditional grading can be both time-consuming and repetitive. AI tools streamline this process by automating the grading of multiple-choice, fill-in-the-blank, and even essay questions through pattern analysis, error detection, and instant feedback. This automation not only alleviates teachers' workload but also delivers faster feedback to students, enabling them to learn from their mistakes and improve. AI also assists in lesson planning by offering data-driven insights into student performance, enabling teachers to identify areas where the entire class may need additional support. This allows teachers to design lessons that are better aligned with students' needs, fostering a more responsive and engaging learning environment. Instead of focusing on administrative tasks, teachers can spend more time on one-on-one support, facilitating group discussions, and inspiring students' curiosity and creativity.

Another profound impact of AI on education is the use of intelligent tutoring systems, which provide students with virtual, on-demand tutoring and guidance. These AI-driven tutors simulate human-like interaction, answering questions, explaining concepts, and offering feedback in a way that feels conversational and approachable. For students who may hesitate to ask questions in a classroom setting, AI tutors offer a private and non-judgmental space to explore concepts in-depth.

This technology is particularly beneficial for subjects like math and science, where students may need step-by-step guidance to understand complex problem-solving processes. AI tutors can also offer alternative explanations if a student doesn't grasp a concept the first time, adapting to the student's learning style. Although AI tutors do not replace human teachers, they serve as an invaluable resource, offering continuous support outside of regular class hours and promoting a more autonomous, self-paced learning experience for students. Over the past few decades, the widespread use of information technology in teaching and learning activities has led to a number of new research issues and areas of focus in the field of education (Feng & Law, 2021).

AI greatly improves student engagement by transforming learning into a more interactive and dynamic experience. Traditional teaching methods often depend on passive learning, such as listening to lectures or reading textbooks. In contrast, AI-powered classrooms offer immersive learning opportunities through tools like virtual reality (VR), augmented reality (AR), and gamification, making subjects more engaging and relatable. AI can generate simulations that let students explore historical events, scientific phenomenon, or complex mathematical models within 3D environments, effectively bringing abstract concepts to life. For example, a history lesson on ancient Egypt might use VR to allow students to "visit" the pyramids, or an environmental science class might simulate ecosystems, enabling students to observe the impact of changes in biodiversity over time. Gamified learning, where educational content is presented in the form of games or challenges, further motivates students by introducing elements of competition, reward, and achievement. This approach enhances retention while cultivating a positive attitude towards learning, as students are more inclined to engage with content that is interactive and enjoyable.

AI technology is transforming the way educators and institutions make informed decisions about teaching strategies and student support through data-driven insights. By continuously collecting and analyzing data on student performance, engagement, and behaviour, AI systems enable educators to monitor progress precisely and provide timely interventions when students exhibit signs of difficulty. Predictive analytics can identify students who may be at risk of falling behind or dropping out, enabling schools to offer timely support and resources tailored to each student's situation. These insights also allow for more effective resource allocation, as administrators can identify trends in academic performance across subjects, grade levels, or demographic groups. By proactively addressing learning gaps and potential challenges, schools and teachers can foster a more supportive and inclusive environment, ensuring that every student has the opportunity to thrive.

The integration of AI in classrooms also creates new opportunities for inclusivity and accessibility, especially for students with disabilities. AI-powered tools like text-to-speech, speech-to-text, and real-time translation assist students with auditory, visual, and learning impairments, enabling them to engage more fully in the classroom. For example, AI-powered captioning can provide real-time text translations for hearing-impaired students during lectures, while language translation tools help non-native speakers understand instructions and communicate with peers. Additionally, AI tools that track eye movement or detect cognitive load can alert teachers when a student may need additional assistance, promoting a more attentive and empathetic approach to education. By making classrooms more inclusive, AI helps in ensuring that all students, regardless of their abilities or backgrounds, have equal access to quality education. However, the integration of AI in classrooms also brings challenges, especially regarding data privacy, ethical considerations, and the potential for over-reliance on technology. Since AI systems depend on collecting and analyzing data, concerns arise about safeguarding students' personal information. Schools and policymakers need to establish robust data privacy standards and ethical guidelines to ensure that AI use respects student confidentiality and adheres to legal requirements. There is also a need to strike a balance between technology and the human aspects of teaching, as AI should complement, not replace, human interaction. Teachers play an essential role in nurturing empathy, emotional intelligence, and social skills, which AI cannot fully replicate. Furthermore, as students become more reliant on AI for learning and problem-solving, educators must ensure that critical thinking, creativity, and resilience remain central to the educational experience.

AI-powered classrooms are reshaping education in ways that enhance learning and teaching processes, making them more personalized, efficient, and inclusive. Through adaptive learning, intelligent tutoring, and data-driven insights, AI addresses the individual needs of students, making learning more accessible and engaging. For teachers, AI alleviates administrative tasks, enabling them to focus on meaningful instructional activities that create a supportive, interactive learning environment. By carefully balancing the advantages of AI with a commitment to ethical standards and human-centered teaching practices, education can harness AI to create classrooms that prepare students not only academically but also emotionally and socially for the complexities of the modern world. As AI continues to advance, its potential to revolutionize education will expand, offering a future where every student is empowered to reach their full potential in an inclusive, dynamic, and forward-thinking learning environment.

## Brief History of Technological Advancements in Education: Background and Context

Technological advancements in education have transformed the way knowledge is delivered and accessed, evolving significantly over time. The integration of technology in education began with simple tools like the chalkboard in the 19th century and radio broadcasts in the early 20th century, which extended learning beyond traditional classrooms. The introduction of personal computers in the 1980s and the internet in the 1990s revolutionized educational practices by enabling digital learning, interactive software, and online resources. The 21st century saw a rapid acceleration with the development of e-learning platforms, virtual classrooms, and mobile technology, allowing for more flexible, personalized, and self-paced learning. Emerging technologies such as artificial intelligence (AI), augmented reality (AR), virtual reality (VR), and learning analytics have significantly improved teaching methods and educational content by offering immersive experiences and data-driven insights. These innovations have not only expanded access to education but also redefined how educators and students interact, making learning more engaging and effective globally (Roll & Wylie, 2016).

Technological advancements in education have a rich and transformative history, dating back centuries to the earliest forms of learning tools and methods. With each significant technological advancement, from the printing press to the internet, the educational landscape has changed, allowing for increased access to knowledge, changing instructional strategies, and rethinking the responsibilities of both instructors and students. The journey of technological progress in education underscores a continuing drive to make learning more effective, inclusive, and engaging, reflecting society's evolving needs and aspirations (Roll & Wylie, 2016). The first major technological leap in education came with the invention of the printing press by Johannes Gutenberg in the mid-15th century. Before the printing press, books were laboriously handwritten, which made them scarce and expensive. Only the wealthy and privileged had access to educational materials, and learning was often restricted to oral transmission or small private libraries. Gutenberg's printing press revolutionized knowledge dissemination, making books widely available and affordable. This advancement made it possible to build schools and universities as we know them today, laying the groundwork for contemporary education. Mass-produced textbooks became standard, allowing teachers to build a common curriculum and enabling students to study independently. With books now accessible to a broader audience, education became less elitist, sparking the growth of public literacy and the democratization of knowledge.

In the 19th and early 20th centuries, new technologies continued to impact education, with innovations like the blackboard, radio, and film introducing multimedia learning into classrooms. The blackboard, widely adopted in the 1800s, allowed teachers to share information with an entire class, enhancing collaborative learning and making classroom management easier. In the 1920s, radio and film were introduced as educational tools, bringing the outside world into classrooms and enabling students to learn from experts and see real-world applications of their lessons. Educational radio broadcasts became especially popular, and some schools even set up classrooms specifically to listen to educational programming. While limited by the technology of that time, these early multimedia tools sparked new ways of thinking about education as a shared and dynamic experience, moving beyond rote memorization towards more interactive learning (Roll & Wylie, 2016).

The invention of the computer in the second half of the 20$^{th}$ century had a significant impact on education. By the 1960s and 1970s, computers began to appear in universities, primarily for research purposes, but soon found their way into secondary and elementary schools as well. Early educational software allowed students to practice basic math and reading skills, marking the first steps toward digital learning. By the 1980s, as personal computers became more affordable and user-friendly, computer labs became common in schools. Students were introduced to word processing, programming, and educational games, which provided a hands-on, engaging way to learn. The computer not only made new learning tools possible but also sparked the development of digital literacy as an essential skill. By the end of the century, digital technology was seen as a cornerstone of modern education, with schools and policymakers emphasizing the importance of preparing students for an increasingly digital world. In order to prepare students for challenges in the future, it is crucial to take into account that proper teaching methods should be used in conjunction with the efficient use of AI technology (Farizi et al., 2024).

Education underwent a paradigm shift in the 1990s and early 2000s with the introduction of the internet. Suddenly, students and teachers could access vast amounts of information from around the world with just a few clicks. An unprecedented degree of information access was made possible by search engines, online databases, and educational websites, which changed the role of the teacher from being the only source of knowledge to one that facilitated learning. The internet also introduced distance learning, which broke down geographical barriers and allowed students to take courses from institutions located anywhere in the world. Virtual learning environments (VLEs) like Blackboard and Moodle emerged, enabling teachers to upload lectures, assignments, and resources, and allowing students to participate

in discussions, take quizzes, and track their progress online. The internet fundamentally changed education by making learning more flexible, accessible, and student-centered, setting the stage for the development of even more advanced digital tools. In the 2010s, mobile devices and cloud computing further expanded the possibilities for education. With smartphones, tablets, and laptops becoming more affordable and ubiquitous, students could now learn anywhere, anytime. Educational apps, e-books, and online courses became common, catering to different learning styles and preferences. Cloud computing allowed for seamless storage and access to data, enabling collaborative projects, online assessments, and remote tutoring. These developments fuelled the growth of blended learning, where traditional classroom experiences are combined with digital tools to create a more interactive and personalized learning environment. Technologies like Google Classroom and Microsoft Teams became popular in schools, transforming both how teachers taught and how students engaged with content. In higher education, platforms like Coursera, edX, and Udacity allow students to take courses from prestigious institutions online, often at low or no cost. This explosion of online learning content democratized education even further, offering lifelong learners and non-traditional students with new opportunities for skill development and career advancement (Adair, 2023).

Most recently, artificial intelligence (AI) and data analytics have begun shaping the future of education in profound ways. AI-powered platforms now provide personalized learning paths, adaptive assessments, and virtual tutoring, allowing for tailored instruction based on each student's strengths, weaknesses, and learning styles. Advanced data analytics offer teachers valuable insights into student performance, engagement, and learning patterns, enabling data-driven decisions that enhance educational outcomes. However, the rise of AI has also introduced new challenges, particularly regarding data privacy and the ethical use of technology in education. As AI becomes more integrated into classrooms, educators and policymakers must grapple with these issues to ensure that the benefits of AI are realized responsibly and equitably (Adair, 2023). In conclusion, the history of technological advancements in education reflects an ongoing journey toward greater accessibility, interactivity, and personalization. Each major technological innovation has not only transformed how students learn but also broadened the definition of education, extending it beyond the boundaries of the traditional classroom. As we enter an era shaped by AI and digital connectivity, the goal remains unchanged: to leverage technology in ways that support human potential and create a learning environment where every student can succeed. In order to create an educational system that is not just cutting edge but also compassionate, inclusive, and flexible enough to meet the requirements of a varied global population, it will be necessary to

strike a balance between technology innovation and the human touch. Artificial intelligence (AI) has received significant interest in the field of education in recent years. One of the most recent applications of artificial intelligence is the use of language models for learning and teaching. In a variety of natural language processing tasks, the OpenAI-developed language model ChatGPT has demonstrated encouraging outcomes (Japoshvili-Ghvinashvili & Suleman, 2023).

## AI-Driven Personalization in Teaching & Learning

AI-driven personalisation in education uses AI to customise learning experiences to each student's particular requirements, interests, and rate of learning. Through the analysis of enormous volumes of data on student behaviour, performance, and engagement, AI is able to pinpoint specific areas in which a learner may thrive or require additional assistance. This makes it possible to create personalised learning pathways, guaranteeing that every student is given activities and content which are appropriate for their learning preferences and ability levels. AI-powered tools can suggest tailored resources, such interactive exercises, films, or books, to assist students grasp difficult ideas, improving the effectiveness and interest of the learning process. For design students, design education is essential to foster innovative thinking, problem-solving abilities, and creative thinking. With AI technologies emerging, there is a chance to use AI tools and methodologies to transform design education (Hashem & Hakeem, 2024). With its ability to provide individualized feedback, generate replies to learners' input, and encourage engagement and motivation, ChatGPT has the potential to improve language and content-based instruction in the classroom (Japoshvili-Ghvinashvili & Suleman, 2023). By offering individualized, flexible, and captivating learning experiences, artificial intelligence (AI) in education has the potential to revolutionize both teaching and learning (Japoshvili-Ghvinashvili & Suleman, 2023). Based on a student's success, AI can instantly modify the task's level of difficulty to maintain the ideal ratio of challenge to support. This continuous adjustment helps prevent frustration from tasks that are too difficult or redundant.

The use of natural language processing enables AI-powered tutoring systems to provide conversational, on-demand help, answering questions, and explaining concepts in ways that are accessible to the student. AI-driven personalization also extends to assessments, where adaptive testing can dynamically modify the difficulty of questions based on a student's responses, providing a more accurate measure of their abilities (Mohamed et al., 2022).

Better learning outcomes, increased creativity, and improved problem-solving abilities can result from combining AI approaches with design education methodology

(Hashem & Hakeem, 2024). For educators, AI-generated insights can inform instructional decisions, allowing teachers to design targeted interventions and track progress at both individual and class levels. AI-driven personalisation has the potential to greatly improve learning outcomes, but it also brings up serious issues with algorithmic bias, data privacy, and the requirement for human oversight to guarantee fair and moral use. AI-driven personalisation, when used carefully, has the potential to revolutionise education by improving the effectiveness, engagement, and student-centredness of learning experiences. Generative AI in education is increasingly being compared to paper farms/paper mills - commercial services that provide pre-written assignments to students, enabling them to avoid doing the work themselves (El-Had, 2023). However, the use of AI tools and technologies in secondary school science classrooms holds the potential to significantly transform teaching and learning methods, enhancing the effectiveness, accessibility, and engagement of education (Okunade, 2024).

## Innovative AI Applications in Education

Innovative AI applications in education are reshaping how teaching and learning occur, offering new ways to enhance the educational experience. Adaptive learning platforms, which employ AI to tailor classes and activities according to each student's performance, learning preferences, and pace are among the most influential uses. By continuously assessing student progress and modifying the content in real-time to offer individualised challenges or support, these systems improve the effectiveness and customisation of learning. The use of chatbots and virtual teaching assistants driven by AI to do repetitive duties like grading papers, giving feedback, and responding to commonly requested questions is another noteworthy breakthrough. These tools free up teachers' time for more meaningful, high-impact interactions with students. Students may collaborate on design projects online and exchange ideas with ease, thanks to AI-based tools and platforms. AI can fulfil the needs of each individual student and improve learning outcomes by providing tailored feedback and adaptive learning experiences (Hashem & Hakeem, 2024). The identification of plagiarism and grammatical errors is just one of the many benefits AI offers for language instruction and learning. Furthermore, AI has brought both potential and challenges for English language instruction in the future. Digital literacy is necessary to use AI. English instructors must constantly advance their digital literacy because AI may eventually replace them in the teaching profession (Idham et al., 2024).

AI's role in educational content creation is also growing, with tools capable of generating customized quizzes, study guides, and even interactive simulations for experiential learning. AI-powered tutoring systems can now provide on-demand

clarifications and support, as natural language processing (NLP) enables AI to comprehend and respond to student inquiries in conversational language. Predictive insights into student performance are provided by AI-driven analytics, which assist teachers in the early identification of at-risk pupils and prompt intervention. This data-driven approach to education can significantly improve outcomes by enabling proactive, rather than reactive, teaching strategies (Bajaj & Sharma, 2018). In order to build immersive learning environments, AI is also being included in virtual reality (VR) and augmented reality (AR) experiences. AI-enhanced VR simulations, for instance, can replicate intricate scientific investigations or bring historical events to life, giving students a more meaningful and dynamic method to interact with the content. Gamification, supported by AI, also adds an element of fun to learning, using AI algorithms to adapt game-based learning activities to each student's progress and preferences. It has been shown that AR is a very popular and entertaining way to educate about anatomy. It is remarkably effective in assisting pupils in comprehending the three-dimensional organization of structures and achieving excellent exam scores (Chytas et al., 2020). Students are able to swiftly repeat and experiment with various concepts, generate more design possibilities, and gain a deeper grasp of the design process, thanks to AI algorithms that generate design variations (Hashem & Hakeem, 2024).

Even though these AI advancements have significant potential, there are still issues to be resolved, such as protecting data privacy, preventing bias in AI systems, and preserving the human aspect in education. When used properly, artificial intelligence (AI) can be a potent tool to enhance conventional teaching techniques and build a more diverse, engaging, and successful learning environment. AI is also being progressively incorporated into the medical sector because of its capacity to evaluate medical data and improve patient outcomes. With its human-like ability to respond to cues, OpenAI's Generative Pre-trained Transformer (ChatGPT) is a language model that could revolutionize medical education (Vignesh et al., 2023). Language models for content-based instruction are among the exciting applications of artificial intelligence (AI) in education that have garnered significant attention in recent years. AI models that can produce high-quality text in response to a prompt are known as language models. OpenAI's ChatGPT language model has demonstrated encouraging outcomes in producing writing that is both engaging and natural (Japoshvili-Ghvinashvili & Suleman, 2023).

## Challenges and Considerations for AI Integration: Addressing the Digital Divide and Ensuring Equitable Access to AI Technologies

Throughout the past few decades, the widespread use of information technology

in teaching and learning activities has led to a number of new research issues and areas of focus in the field of education (Feng & Law, 2021). The 21st century presents a number of challenges for education, such as the need to improve the didactic processes involved in both in-person and online instruction and to train in mobile and ubiquitous contexts. For this, educators and learners can and ought to utilize the capabilities of artificial intelligence-based tools (Vázquez-Cano, 2021). While there are many benefits to integrating AI in education, there are also many drawbacks, especially when it comes to addressing the digital divide and guaranteeing that everyone has access to AI tools. One major challenge is the disparity in access to the internet, devices, and AI-powered tools, especially in low-income and rural communities. Many schools and students lack the technological infrastructure and financial resources to adopt AI-driven learning platforms, which exacerbates existing educational inequalities. Bridging this digital divide requires significant investment in infrastructure, such as providing affordable internet access, hardware, and training programs for both teachers and students. The integration of digital technology in educational activities has made it easier to gather a large amount of data on user-generated material and traceable learning behaviours (Feng & Law, 2021).

Making sure that equity is taken into account while designing and implementing AI technology is another crucial factor. Because AI algorithms are only as objective as the data they are trained on, AI systems have the potential to maintain or even worsen educational inequities if the data sets they use reflect social biases. For example, AI-driven learning platforms might not effectively serve students with diverse learning needs or backgrounds if the training data does not account for a wide range of student experiences. To address this, developers must prioritize diverse, representative data sets when designing AI systems, ensuring that the tools can adapt to students of different cultures, languages, and abilities. Furthermore, educators must receive adequate training in how to effectively integrate AI tools into their classrooms. Without this support, teachers in under-resourced schools may struggle to adopt AI, widening the gap between well-funded institutions and those with fewer resources. Professional development programs that focus on AI literacy and technology integration are crucial for empowering teachers to leverage these tools in ways that benefit all students.

Creating guidelines for data protection and ethical use is another way to guarantee fair access to AI. In order to customize learning experiences, many AI systems gather enormous volumes of student data, which raises questions regarding its use and who can access it. Strong data governance frameworks, transparent AI policies, and regulations that protect students' privacy must be in place to safeguard against misuse and ensure that AI technologies are used responsibly. Governments,

educational institutions, tech companies, and communities must work together to close the digital gap and guarantee fair access to AI in education. This calls for targeted investments in technology infrastructure, inclusive design of AI tools, and policies that protect vulnerable populations. With these considerations in mind, AI integration in education can become a force for enhancing learning opportunities for all, rather than reinforcing existing inequalities. Large language models (LLMs) and conversational-style generative artificial intelligence (AI) are radically changing higher education pedagogy. Concerns regarding plagiarism detection have been raised by the rise of programs like ChatGPT, but there are also opportunities for teachers to use AI to create supportive learning environments (Eager & Brunton, 2023).

## AI for Enhancing Teacher Capabilities

By supplying data-driven insights for better decision-making, automating administrative processes, and delivering personalised learning experiences, artificial intelligence (AI) has the potential to greatly improve teaching capabilities. AI frees up teachers' time to concentrate on teaching and student engagement by automating chores like scheduling, attendance monitoring, and grading. AI-powered platforms can tailor instruction by modifying materials to each student's specific requirements, taking into account both their strengths and shortcomings. This helps educators create more effective learning experiences and interventions. Furthermore, AI systems can evaluate enormous volumes of student data to find learning trends, forecast academic results, and recommend focused help for students who are having difficulty. This allows teachers to take a proactive stance. Additionally, students can receive round-the-clock support from chatbots and virtual assistants driven by AI, who can respond to their questions and offer feedback outside of regular class hours. By integrating AI into education, teachers can enhance their instructional strategies, streamline their workload, and ultimately improve student outcomes.

AI is transforming the landscape of education by significantly enhancing teacher capabilities, providing tools that help educators deliver better learning experiences, personalize instruction, and manage administrative tasks more efficiently. By leveraging AI, teachers can achieve a more profound impact on student engagement, academic achievement, and individualized learning paths. AI-driven applications streamline lesson planning, automate grading, and provide insights into student progress, which can be instrumental for teachers aiming to focus more on pedagogical strategies and less on routine administrative work (Bajaj & Sharma, 2018). Adaptive learning platforms and intelligent tutoring systems are two main ways through which AI improves instructor capacities. By analysing each student's unique requirements,

preferences, and learning styles, these AI-powered technologies let teachers tailor their lessons in a better way. With AI, teachers can identify students' strengths and weaknesses more accurately, enabling them to adjust their teaching styles and methods (Abdellatif et al., 2022). This is especially helpful for large classrooms where addressing each student's needs can be challenging.

Real-time feedback and assistance are provided by adaptive learning platforms, which enables teachers to step in quickly and assist students who are having difficulty understanding specific subjects. Furthermore, AI can recommend set of tailored resources and assignments, giving teachers a valuable tool to meet the unique requirements of each learner (Abdellatif et al., 2022). In addition to supporting personalized learning, AI helps streamline the evaluation and grading process. Grading, particularly in large classes, often demands significant time from teachers, reducing the time available for lesson planning and engaging with students. AI-based grading systems can efficiently assess objective tests and even assist in evaluating written assignments by analyzing language, coherence, and alignment with the grading rubric. While AI cannot fully replace human judgment in complex assessments, it can serve as a reliable assistant, reducing the grading workload and allowing teachers to focus on giving more constructive feedback. AI can help uncover trends and typical faults in student submissions, which is especially helpful in courses like language arts and social sciences that have a lot of assessments.

AI also aids teachers in developing new pedagogical approaches by analyzing vast amounts of educational data and suggesting instructional improvements. Predictive analytics powered by AI can examine students' performance history and predict future challenges they may face. This insight allows teachers to proactively address potential learning gaps before they affect students' academic performance. For example, an AI-driven platform might highlight that certain students consistently underperform in algebra, prompting the teacher to reintroduce foundational math concepts or use alternative teaching resources. By providing data-driven insights, AI encourages a proactive teaching model rather than a reactive one, ultimately contributing to higher student success rate. Another area where AI plays a transformative role is in teacher training and professional development. AI-based platforms can provide teachers with personalized training modules that focus on areas where they need improvement or on emerging educational trends and methodologies. By delivering real-time feedback and adaptive learning paths to teachers, these platforms enable educators to improve their teaching skills continuously. Furthermore, AI can facilitate simulated classroom environments for training, where teachers can practice managing different classroom scenarios and

receive feedback on their methods and decisions. This virtual practice is particularly useful for new teachers, allowing them to gain experience and confidence before stepping into real classrooms.

AI also contributes to improving accessibility in education, helping teachers address diverse student needs. AI provides technologies like voice recognition, language translation, and speech-to-text programs to improve the learning experience for children with special needs or disabilities. Teachers can use these tools to ensure an inclusive environment where every student has an equal opportunity to learn. Moreover, AI can help educators design content that meets different learning styles, whether visual, auditory, or kinaesthetic thereby fostering a more inclusive and engaging classroom. AI improves teachers' communication and classroom management skills. AI-powered chatbots and virtual assistants can respond to student questions, take care of standard administrative duties, and even remind users about assignments and impending tests. Teachers can set up these assistants to answer common student questions, reducing the number of repetitive tasks they need to handle. Furthermore, AI-based systems can manage classroom attendance, track student progress, and provide updates to parents, fostering better communication between teachers, students, and their families. AI enables teachers to spend more time with students and foster deeper connections that enhances learning outcomes by streamlining administrative and communication duties. In conclusion, AI is not a replacement for teachers but an enabler that strengthens their role in the educational process. By taking over routine tasks, providing data-driven insights, personalizing learning, and enhancing accessibility, AI empowers teachers to focus on what truly matters: educating and inspiring students. As AI technology develops further, it will give educators more opportunities to enhance their methods, which will ultimately result in an education system that is more efficient, inclusive, and prepared for the future.

## Preparing Educators and Institutions for AI-Powered Classrooms

With boundaries becoming hazier, educators in the twenty-first century face a number of difficulties with regard to didactics and expanding their approaches in both in-person and virtual learning contexts. In this regard, the early ideas from artificial intelligence may be viewed as both hopeful and somewhat concerning, given the concerns about sustainability, data security, and emotions, among other things (Vázquez-Cano, 2021). Preparing educators and institutions for AI-powered classrooms involves equipping teachers with the necessary skills and tools, updating curricula, and fostering a culture of adaptability. Educators must be trained in AI

literacy, including understanding AI's capabilities and limitations, ethical considerations, and practical applications in teaching. Personalised learning, automated grading, and data analysis for student performance are just a few examples of how AI tools can be successfully incorporated into teaching tactics by teachers with the support of professional development programs. Institutions, on the other hand, need to invest in the necessary infrastructure, such as AI-powered software and devices, to support the seamless integration of AI in classrooms. Updating curricula to include AI-related subjects will prepare students for future job markets while also encouraging educators to adopt AI-driven teaching approaches. Teachers and students alike will need to keep up with the quickly changing AI technology; therefore, cultivating a culture of flexibility and ongoing learning is essential. Establishing policies for ethical AI use, data privacy, and inclusive access will also ensure that AI adoption benefits all stakeholders in education. By taking a holistic approach to preparing educators and institutions, the transition to AI-powered classrooms can be smooth and effective, enhancing the overall learning experience.

Preparing educators and institutions for AI-powered classrooms requires a thoughtful approach to ensure that both teachers and school infrastructure are equipped to harness AI's potential effectively. As artificial intelligence continues to shape the future of education, institutions must invest in training programs, infrastructural upgrades, and ethical guidelines to foster an environment that maximizes AI's benefits. By laying a robust foundation, educators and administrators can integrate AI tools in ways that enhance teaching, support personalized learning, and streamline administrative processes, ultimately creating classrooms that are innovative, inclusive, and efficient. Twenty-first-century education, like any other field, needs to adapt its principles to the new social and technological realities of the modern world. It must also provide ideas and solutions that ultimately seek to enhance the teaching-learning process and help students acquire the knowledge and skills they need to succeed in both their personal and professional lives, as well as in their civic duties (Vázquez-Cano, 2021). Teachers see artificial intelligence (AI) as a technological advancement that should not be disregarded and are eager to learn more and incorporate it into the classroom. To ensure that the modifications made to their instruction are successful and cover the range of pedagogical options, professional learning to advance AI knowledge and comprehension, therefore, seems to be the main priority (Bower et al., 2024).

A fundamental step in preparing educators for AI-powered classrooms is to provide comprehensive training in AI literacy and its applications in education. The majority of educators, even those with years of experience, might not be well-versed

in AI technologies and how they can be used in the classroom. Schools and universities must offer professional development programs that cover the basics of AI, such as machine learning, data analytics, and adaptive technologies, as well as practical applications in teaching and learning. Training should focus on hands-on learning, enabling teachers to interact with AI tools, experiment with adaptive learning platforms, and understand how AI can automate grading, personalize learning paths, and predict student needs. With the necessary knowledge and confidence, educators are more likely to embrace AI as a tool rather than as a possible substitute for their positions. There will be an increasing number of people using ChatGPT and other AI-based technologies. It is our responsibility as instructors and lecturers to be able to adjust and handle it. At first sight, the students' technology appears to be incredibly appealing, engaging, and simple to use. Given that this is a simple method of passing an exam and getting a great grade, it is reasonable to assume that people will be tempted to utilise it (Valova et al., 2024). Although the educational system has its shortcomings and encourages high academic achievement, these mechanisms can and should be used more effectively to support students' growth in critical thinking and problem-solving abilities (Valova et al., 2024).

Institutions must also address the technical infrastructure needed to support AI applications in classrooms. Many AI-powered tools require substantial computational power, cloud storage, and robust internet connectivity, which may not be readily available in all schools, especially in under-resourced areas. Educational institutions should consider investing in reliable internet access, cloud-based platforms, and high-performance computers capable of running AI software. Additionally, establishing a dedicated IT support team is essential to help troubleshoot issues, maintain security, and guide teachers and students in using AI tools effectively. This infrastructure investment ensures that AI-powered classrooms can operate smoothly and that educators do not face unnecessary technical challenges when implementing new technologies. Schools with limited budgets might explore partnerships with tech companies or government grants to secure these resources, levelling the playing field and increasing the number of students who can access AI-enhanced learning. Creating ethical guidelines for AI usage is another critical component in preparing for AI-powered classrooms. As AI technology advances, concerns around data privacy, bias, and accountability become more prominent. Institutions must set precise rules that specify how AI systems are to gather, keep, and use student data. Teachers and administrators need to be aware of privacy laws, such as GDPR or FERPA, and ensure that AI applications comply with these regulations. Ethical guidelines should also cover transparency, requiring that AI-driven assessments or personalized learning recommendations be explained in ways that both teachers and students can

understand. Ensuring that AI applications are unbiased and do not unfairly disadvantage any group of students is crucial for maintaining equity in education. These ethical considerations not only protect students but also help build trust in AI technologies, making educators more comfortable with integrating them into their teaching.

To successfully transition to AI-powered classrooms, educational institutions should cultivate a culture that embraces innovation and continuous learning. Teachers need to feel that they have institutional support when experimenting with new AI tools and that mistakes will be viewed as learning opportunities. Teachers can exchange experiences, tactics, and difficulties pertaining to AI in education by forming professional learning communities at schools and universities. Encouraging collaboration across departments and schools can help educators feel part of a supportive network, making them more willing to explore AI-enhanced teaching methods. Additionally, incorporating educators in the process of choosing AI technologies promotes a feeling of responsibility and ownership, which raises the possibility of successful deployment. Teachers are more inclined to support AI-powered solutions that actually help students when they believe that their knowledge and opinions are appreciated. Institutions must also create assessment frameworks to gauge how well AI-powered teaching resources are working in the classroom. Without concrete metrics, it can be challenging to determine whether AI is positively impacting student outcomes or merely adding complexity to the educational process. Schools should consider metrics such as student engagement levels, academic performance, retention rates, and teacher satisfaction when evaluating AI tools. Regular assessments and feedback loops can help educators identify which AI applications are most effective and which might need adjustments or replacement. Teachers and administrators can better grasp the advantages and limitations of AI thanks to this data-driven evaluation method, which also maximizes its utilization. With effective evaluation mechanisms in place, institutions can make informed decisions on scaling AI integration, ensuring it aligns with educational goals and improves learning outcomes.

Finally, preparing educators and institutions for AI-powered classrooms involves fostering a mindset that sees AI as a collaborative tool rather than a competitor. Educators should view AI as a means to enhance their abilities, reduce their workload, and enable a more student-centered approach to teaching. AI enables teachers to spend more time on individualized student interaction, critical thinking activities, and innovative project-based learning by automating repetitive chores like lesson planning, grading, and administrative duties. Schools should emphasize that AI is meant to

complement human teaching rather than replace it, highlighting areas where teacher insight, empathy, and adaptability remain irreplaceable. Understanding AI's limitations and the value of human interaction in education promotes a balanced approach in which technology facilitates learning rather than interferes. All of these require careful thought. Since the wave of technological progress in education, the abundance of digital resources and these events have always taken precedence over pedagogy and didactics. The didactic and pedagogical approach that encourages the use of technology both within and outside of the classroom must thus be reconsidered. Proposals based on AI will consequently necessitate considerable didactical adjustments because technology by itself cannot improve education without a strong didactic component (Vázquez-Cano, 2021). In conclusion, preparing educators and institutions for AI-powered classrooms is a multifaceted process that involves training, infrastructure investment, ethical guidelines, and a collaborative mindset. Educational institutions can establish an atmosphere where AI improves the teaching and learning process by tackling these issues, giving students access to a more individualized, engaging, and accessible education. As AI technologies develop and the educational landscape shifts, this preparation is a continuous process rather than a one-time event. Through thoughtful preparation and a commitment to responsible AI use, institutions can transform classrooms into dynamic, future-ready spaces that empower both educators and learners.

## Shaping the Future of Education with AI: Future Directions, Research Opportunities and Emerging Trends in AI-Driven Educational Tools

The development of adaptive learning systems, which use AI to deliver highly personalised learning experiences, is one prominent trend that can shape the future of teaching and learning. Research can examine how adaptive learning affects student outcomes across a variety of subjects and among different age groups. Another important trend is the use of natural language processing (NLP) and AI-driven chatbots, which allow for interactive and immersive learning experiences. These emerging trends provide exciting directions and research opportunities for the future of AI-driven educational tools. For instance, AI tutors can provide conversational support, answer queries, and assist with assignments, mimicking one-on-one tutoring. Research into the effectiveness of these AI-driven interactions compared to traditional instruction could offer valuable insights into the optimization of blended learning approaches (Ouyang & Jiao, 2021). Industry partnerships, teacher training, and government backing are all opportunities for successful integration. Prospects for the future include advancements in better data analytics, virtual and augmented reality integration, personalized learning environments, increased natural language processing, and international collaboration in education (Okunade, 2024).

AI's role in educational content creation is also expanding, with AI tools generating custom quizzes, learning materials, and even simulated virtual environments for experiential learning. This opens research opportunities to evaluate the quality, engagement levels, and educational impact of AI-generated content (Kaban, 2023). Predictive modelling, which can identify children at risk of falling behind and allow for appropriate interventions, is made possible by AI-driven analytics. Research could focus on ethical considerations, data privacy, and the predictive accuracy of these models in different educational settings (Srinivasan, 2022). Finally, a new and promising trend is the combination of AI with virtual reality (VR) and augmented reality (AR) to produce immersive learning environments. Exploring the efficacy of AI-enhanced AR/VR applications in subjects like STEM, history, and language learning could provide a deeper understanding of how to leverage these technologies for maximum educational impact. Overall, AI-driven tools are poised to transform education, and research in these areas can guide their development and implementation to ensure positive outcomes for students and educators alike (Srinivasan, 2022). Universities are becoming more aware of the need for teaching and learning strategies to change to accommodate a shifting environment shaped by the expanding influence of artificial intelligence (AI), as awareness of the technology spreads around the world and consumer-based AI technologies become more widely available and adopted (Eager & Brunton, 2023). Developing models and concepts for integrating AI into the teaching and learning process that are based on reasonable didactic and pedagogical principles is one of the most important new challenges in education. Effectively and suitably addressing this difficulty could contribute to the development of more adaptable, customized, and long-lasting learning environments (Vázquez-Cano, 2021). Artificial intelligence integration in education should be tackled from a strong pedagogical perspective, where proper values and emotions converge with algorithms (Vázquez-Cano, 2021). Teachers are urged to include discussions about responsible AI use in order to raise a generation that not only welcomes technological innovations but also critically assesses how they affect education and intellectual growth (Valova et al., 2024).

As artificial intelligence (AI) technology advances, more and more AI products are being applied in the education sector. In order to encourage the use of AI technology in education, numerous nations have also developed pertinent legislation (Yufei et al., 2020). Artificial intelligence (AI) is drastically changing the way that students and teachers engage with technology, opening up new avenues for personalized learning, and changing the way that the classroom is organized. As educational systems around the world seek ways to adapt to the needs of the 21st century, AI offers promising solutions for a more accessible, flexible, and effective learning environment. With careful application, educators can leverage AI's potential

to promote more in-depth learning, expedite administrative duties, and develop an inclusive educational model that can be tailored to meet the needs of every learner. Personalized learning on a broad scale is one of the most significant effects of AI in education. One-size-fits-all approaches are frequently used in traditional educational methods, which makes it difficult to accommodate each student's unique learning needs, speeds, and styles. Teachers may, however, provide students with personalized learning routes that change in real time based on their performance, engagement, and learning preferences by using AI-powered adaptive learning platforms. Large volumes of data may be analyzed by these systems, which can then be used to find understanding gaps and modify the material to suit the needs of each individual learner. If a student is having trouble understanding a certain arithmetic concept, for example, the AI system can offer more resources, practice questions, or different explanations until the student has mastered the material. This level of personalization is impossible to achieve in a conventional classroom, but with AI, it becomes a realistic and scalable solution that can help every student succeed.

AI is also transforming assessment methods, allowing educators to evaluate student progress in more nuanced and holistic ways. AI makes continuous and formative assessment possible, allowing for real-time feedback that helps students improve over time, as opposed to relying only on standardized examinations and traditional grading. For example, AI-driven platforms can analyze written work, offering suggestions on grammar, structure, and style, as well as deeper insights into content coherence and critical thinking. These tools help students become more self-aware and reflective learners, making the assessment process more collaborative and less intimidating. In subjects like language arts or social studies, where open-ended answers are common, AI can analyze responses to identify trends, gaps, and common misconceptions, offering teachers insights that would be difficult to obtain manually. By shifting the focus from grades to growth, AI is helping create a more supportive and constructive approach to learning assessment (Bajaj & Sharma, 2018). By automating repetitive processes and offering data-driven insights, artificial intelligence (AI) not only improves the student experience but also greatly assists educators and administrators. Grading, lesson planning, and administrative work often consume a significant portion of teachers' time, leaving them with limited opportunities to engage directly with students. AI-powered tools can automate grading for objective questions, assist in evaluating essays, and streamline lesson planning by suggesting resources and activities tailored to student needs. For administrators, AI can aid in managing scheduling, attendance, and other logistical aspects of school operations, making the educational process more efficient and freeing up resources for direct student support. Teachers may devote more of their time to what they do best—guiding, mentoring, and motivating students—with these time-saving features.

AI has the potential to improve accessibility and inclusivity for a wide range of student populations. AI-powered resources like adaptive devices, language translation software, and speech-to-text offer priceless assistance to students with impairments or language barriers, fostering a more equal learning environment. For example, students with hearing impairments can benefit from real-time captioning in lectures, while non-native speakers can use AI-powered translation tools to help them understand course materials in their preferred language. Additionally, AI can adapt content delivery based on sensory preferences, offering auditory, visual, or kinaesthetic options to suit various learning styles. AI ensures that every student, irrespective of background or ability, has access to a high-quality education and the chance to succeed academically by fostering inclusion. Additionally, AI is supporting cutting-edge methods of instruction that transcend the confines of the conventional classroom. With the help of AI-powered virtual reality (VR) and augmented reality (AR), students may now conduct science experiments, visit historical places, and act out real-world situations—all from the comfort of their classrooms. These tools make learning more engaging and experiential, turning abstract concepts into tangible experiences that deepen understanding. By connecting students from around the globe through digital platforms, AI is also promoting collaborative learning. This allows them to collaborate on projects, share ideas, and broaden their perspectives. This ability to transcend physical and geographical limitations is essential in today's interconnected world, where students must be prepared to collaborate and compete in a global economy (Yufei et al., 2020).

AI is also very important in educating students for the workforce of the future, as data literacy and digital skills are becoming more and more important. As AI becomes more integrated into the professional world, students who have experience with AI tools and data analysis will be better prepared to thrive in various fields, from business and healthcare to technology and the arts. Schools that integrate AI into the curriculum are providing students with the opportunity to learn about machine learning, algorithms, and data ethics—skills that will be invaluable as they enter an AI-driven job market. The ethical implications surrounding AI, such as privacy, bias, and accountability concerns, are also better understood by students who learn how to engage with AI ethically. These considerations are essential for the responsible deployment of AI. However, overcoming some obstacles, such as data privacy and the danger of technological dependence, is also necessary to fully utilize AI in education. Schools and policymakers must establish clear guidelines for data protection, ensuring that AI tools adhere to stringent privacy standards to protect student information. Additionally, while AI offers valuable support, there is a risk of over-reliance, where technology might overshadow the irreplaceable human elements

of teaching, such as empathy, intuition, and adaptability. Teachers and educational institutions need to find a balance between utilizing AI to enhance human instruction rather than replace it, and making sure that students acquire intangible interpersonal and critical thinking abilities. AI has the potential to influence education in the future by improving accessibility, personalization, and alignment with contemporary needs.

Regardless of each student's particular learning needs or circumstances, educators may establish an atmosphere where all students have the chance to achieve by carefully integrating AI. Teachers may concentrate on meaningful, student-centered interactions by using AI to automate repetitive chores and provide personalized insights, which fosters a collaborative and encouraging learning environment. A generation of students prepared to succeed in an increasingly digital environment will be born as AI develops, creating even more opportunities for creative, inclusive, and future-ready education. Through responsible and balanced AI integration, the education sector can look forward to a future where technology empowers both students and teachers, shaping a brighter, more inclusive future for education.

## Conclusion

Teachers' roles are changing as a result of the use of artificial intelligence (AI) in education, which improves student learning and expands their skills. With the help of AI, educators may focus more on teaching and student engagement by streamlining administrative duties like scheduling, attendance, and grading. Through the use of predictive analytics, adaptive learning platforms, and intelligent tutoring systems, artificial intelligence (AI) may personalise education by giving students real-time feedback and individualised learning routes, ultimately improving their academic performance. Additionally, AI helps teachers determine the strengths and limitations of their students, which aids in the creation of tailored teaching methods. However, the effective integration of AI requires educators to undergo comprehensive training to enhance their AI literacy, understand its ethical implications, and learn to apply it within the classroom. Institutions must also invest in the necessary infrastructure, including AI-powered tools, devices, and internet access, to support the transition to AI-powered classrooms.

Establishing ethical standards for inclusion, openness, and data privacy is necessary to guarantee that AI technologies are applied sensibly and fairly. Moreover, fostering a culture of adaptability and continuous learning within educational institutions is vital to embrace these technologies fully. AI has the potential to enhance teaching

by offering students a more personalized, engaging, and accessible learning experience - provided educators embrace it as a collaborative ally rather than a competing force. Preparing educators and institutions for AI-integrated classrooms is a complex, ongoing process that demands strategic investment, continuous professional development, and a strong focus on human judgment and empathy. As AI continues to evolve, its integration into education will further empower teachers, transforming classrooms into dynamic, future-ready spaces that address the diverse needs of all learners.

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# A Study of Technostress Among Higher Education Teachers

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## Abstract

People use technology to complete their tasks effectively and efficiently. Using Information Communication and Technology in Education is beneficial for reducing time and place barriers in the teaching-learning process. It gives more output with minimum effort and ultimately increases the work productivity of teachers as well as students. The present study aimed at studying technostress among teachers at higher education institutions. A questionnaire developed by Ragu-Nathan and Ragu-Nathan (2008) was used to measure the level of technostress of higher education teachers. Sixty-two higher education teachers were selected using a simple random sampling technique from Bareilly District. The findings revealed that the majority of higher education teachers fall under the category of a high level of technostress. No significant difference was found between male and female teachers on technostress; both groups exhibit high technostress. Higher education teachers were not found to differ significantly in the level of technostress. Researchers also found that Science, Arts, and Commerce teachers had no significant difference in the level of technostress, but higher education teachers of these streams were facing a high level of technostress.

**Keywords:** *Technostress, higher education teachers, Science, Arts, Commerce.*

## Introduction

Advancements in technology result in benefits for every sector, whether it is the education sector or the business sector, but technological advancements have created some negative perceptions among employees. Including technology in education makes teaching-learning easy, saves time, and reduces the difficulty level. In contrast to this, on the other hand, technology increases physical and psychological workload.

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It also happens due to the rapid advancement in technology. Unless and until the user understands the present system and software, the new version of that software is released. It is one of the reasons for stress among users.

Brod (1984) defined the concept of techno-stress as a "modern adaptation disorder resulting from failure in coping with new technologies in a healthy way" (as cited in Salazar et al., 2021). Technostress is the inability of an individual who is feeling unable to use technical devices. It is the feeling of anxiety while adopting new technical devices and doing work with these devices for a long period of time.

The teacher's role is very crucial while integrating technology in the teaching-learning cycle. Teachers are facing a number of problems in integrating technology. Teachers who are glued to the technology can handle the work easily; otherwise, they feel fear or resistance to go with the technology. There may be a number of devices they need to work with, such as internet connectivity, smartphones, tablets, webcams, personal computers, laptops, microphones, projectors, etc. Regular use of these devices may lead a person towards technostress.

A strong belief in using technology will be helpful in reducing technostress (Harahap & Effiyanti, 2015). The teacher's level of technostress is medium and is not affected by gender (Coklar et al., 2016). Confidence level increases with the increase in experience of using technical devices (Daling, 2017). An inverse relationship was there between psychological capital and technostress (Efilti & Coklar, 2019). Important factors in experiencing technostress include difficulty in adopting technology, privacy issues while using technology, and benefits of technology. To reduce technostress of teachers, support by co-workers is very crucial (Khlaif et al., 2023). Technical issues work as the main contributor towards technostress and motivate teachers to leave their profession (Siddiqui et al., 2023).

## Objectives of the study

1. To study the level of technostress among higher education teachers.
2. To compare technostress of higher education teachers on the basis of gender.
3. To find out the difference between technostress among rural and urban higher education teachers.
4. To compare technostress of higher education teachers in relation to their stream.

## Hypotheses of the study

H0 1. There is no significant difference between male and female higher education teachers on their technostress.
H0 2. There is no significant difference between rural and urban higher education teachers in reference to technostress.
H0 3. There is no significant difference in Science, Arts and Commerce teachers in relation to their technostress.

## Sample

The present study comprises of 62 higher education teachers as sample. Both rural and urban higher education teachers of different streams (Arts, Science and Commerce) were selected randomly for the study. The sample comprises of both male and female higher education teachers.

## Tool

Technostress questionnaire developed by Ragu-Nathan and Ragu-Nathan (2002) was used by the researcher. This questionnaire consists of 24 items under the five dimensions namely techno- overload, techno- invasion, techno-complexity, techno-insecurity and techno-uncertainty.

## Discussion and Findings

The main objective of the research is to know the level of technostress among higher education teachers and to compare them in relation to their technostress.

**Table 1: Level of technostress among higher education teachers (N= 62)**

| S. No. | Level of technostress | Raw score range | Number of students | Percentage |
|---|---|---|---|---|
| 1 | High technostress | 77 & above | 36 | 58.06 |
| 2 | Moderate technostress | 37- 76 | 25 | 40.32 |
| 3 | Low technostress | 36 & below | 1 | 1.62 |
| | **Total** | | | **100** |

Table 1 presents the percentage distribution of technostress levels among higher education teachers. Interpretation of the table revealed that out of sixty-two teachers

from higher education, thirty-six teachers (58.06%) had a high level of technostress; twenty-five teachers (40.32%) had a moderate level of technostress, whereas only one teacher (1.62%) had a low level of technostress. After analysis, it is found that most of the teachers are experiencing a high level of technostress. It means teachers are facing problems while using technology.

**Table 2: Technostress of higher education teachers on the basis of gender**

| Groups | N | Mean | SD | df | t | | Remark |
|---|---|---|---|---|---|---|---|
| Male | 28 | 81.21 | 13.76 | 60 | 0.30 | Not Significant | Null hypothesis accepted |
| Female | 34 | 82.35 | 10.60 | | | | |

The data in Table 2 shows the comparison of male and female teachers on technostress. The obtained 't' value, i.e., 0.30, is found to be not significant at the 0.05 level of significance. It indicates that there is no significant difference in technostress between male and female higher education teachers. Therefore, the null hypothesis, "There is no significant difference between male and female higher education teachers on their technostress," is accepted.

Table 2 presents the mean scores of technostress of higher education teachers with respect to gender, which are found to be 81.21 and 82.35, respectively. On the basis of mean scores, it is found that the technostress of female teachers is slightly higher than that of male higher education teachers, but both groups fall under the category of a high level of technostress. Coklar (2016) also found no difference between male and female levels of technostress. Both groups in that study fell in the medium level of technostress.

**Table 3: Technostress among rural and urban higher education teachers.**

| Groups | N | Mean | SD | df | t | | Remark |
|---|---|---|---|---|---|---|---|
| Rural | 18 | 82.66 | 12.67 | 60 | 0.282 | Not significant | Null hypothesis accepted |
| Urban | 44 | 81.5 | 15.51 | | | | |

The data in Table 3 compares the technostress of rural and urban higher education teachers. The calculated 't' value, i.e., 0.282, is found to be not significant at the

0.05 level of significance. It shows that there is no significant difference between rural and urban higher education teachers. Therefore, the null hypothesis, "There is no significant difference between rural and urban higher education teachers in reference to technostress," is accepted.

Further, Table 3 presents the mean scores of rural and urban higher education teachers, which are found to be 82.66 and 81.5, respectively. It is interpreted that the technostress of rural higher education teachers is slightly higher than that of urban higher education teachers, but both groups fall under the category of high-level technostress.

**Table 4: Comparison of technostress of higher education teachers with regard to stream (Science, Arts & Commerce)**

| *Groups* | *Count* | *Sum* | *Mean* | *Variance* |
|---|---|---|---|---|
| Science | 25 | 2013 | 80.52 | 153.01 |
| Arts | 25 | 2025 | 81.00 | 285.33 |
| Commerce | 12 | 1028 | 85.66 | 191.87 |

ANOVA

| *Source of Variation* | *SS* | *df* | *MSS* | *F* | *P-value* | *F crit* |
|---|---|---|---|---|---|---|
| Between Groups | 235.8675 | 2 | 117.93 | 0.55087 | 0.57937 | 3.15312 |
| Within Groups | 12630.91 | 59 | 214.08 | | | |

Table 4 clearly shows that the calculated F-value (0.5508) is not significant at the 0.05 significance level. It is inferred that the mean scores of teachers do not differ significantly in relation to their stream of teaching. Therefore, the null hypothesis is accepted.

Table 4 also shows that teachers from Science, Arts, and Commerce streams do not differ significantly at the 0.05 level of significance. The mean value indicates that the technostress level of Commerce teachers is higher than that of Science and Arts teachers. Badoni (2023) found Social Science/Commerce stream teachers having lower technostress than Science/Mathematics stream teachers.

## Summary

The present research work aims to study the technostress among higher education teachers. On analyzing, it was found that majority i.e. 58.06% of higher education teachers had a high level of technostress followed by 40.32% of teachers showing a moderate level of technostress. Only a few i.e. 1.62% had a low level of technostress. The result indicated that the excessive use of technology in workplace increases the level of technostress on teachers. No significant difference was found in the level of technostress on the basis of gender, locality and stream. However, female teachers, rural teachers and teachers with the Commerce stream had slightly higher mean scored on technostress than their counterparts. On interpreting the mean scores, it was revealed that both male and female teachers, as well as rural and urban teachers, were experiencing a high level of technostress.

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# Role of Emotional Intelligence in Teacher Well Being and Adaptation

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## Abstract

In recent years, emotional intelligence (EI) has been recognized as a key component impacting many facets of success and happiness in the workplace. A growing amount of research is focusing on the impact of EI on teachers' well-being and ability to adjust in the classroom. Within the framework of the teaching profession, this research seeks to investigate the complex link between emotional intelligence, teacher well-being, and adaptability. This study offers a thorough examination of educational frameworks, empirical research, and current literature to shed light on how emotional intelligence affects teachers' resilience, job satisfaction, and ability to handle stress, as well as how it affects their capacity to adapt to the ever-changing demands of their profession. This study summarizes the results and shows how important it is to include emotional intelligence training in teacher preparation programmes. It calls for a more comprehensive approach to training teachers so they can handle the challenges of today's classrooms. In addition, the study highlights the need for ongoing research and collaboration to better understand emotional intelligence's role in education. This will help in developing interventions and policies that are supported by evidence and can improve both teacher professional practice and student outcomes.

**Keywords:** *Emotional intelligence, teacher well-being, teacher adaptation, professional development.*

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## Introduction

Teachers in today's schools do much more than just teach their pupils facts and figures; they also act as guides for their students' personal growth, sounding boards for difficult conversations, and sources of emotional support. Maintaining productive classroom settings and guaranteeing ideal student results depend on instructors being healthy and adaptable in the face of the many demands and difficulties of the teaching profession. At the heart of these considerations is the idea of emotional intelligence (EI), which is gaining traction because of the positive impact it may have on teachers' health and flexibility. According to Mayer and Salovey (1997), emotional intelligence is the capacity to be self-aware, to regulate emotions, and to be emotionally intelligent in our interactions with others. The purpose of this research is to examine the complex interplay between teachers' emotional intelligence and their health and flexibility in the classroom. Physical, emotional, and mental health are all interrelated components of teachers' overall well-being. The personal lives of teachers, as well as their professional performance and the learning environment as a whole, may be negatively impacted by the high levels of stress, burnout, and job dissatisfaction that are documented in the literature (Kyriacou, 2001; Hargreaves, 2000). In order to build resilience and increase overall job satisfaction, it is crucial to understand the elements that contribute to teachers' well-being. An important component in this area could be emotional intelligence, which is believed to help people deal with stress, understand and manage their relationships, and keep a positive attitude even when faced with adversity (Brackett & Katulak, 2006). In addition, adaptation—the ability to change and prosper in unpredictable and often challenging environments—is an essential quality for teachers.

Teachers need a toolbox of adaptive skills and the ability to bounce back from setbacks in order to effectively deal with different student populations, administrative pressures, and curriculum changes (Ingersoll, 2001). Despite its potential to illuminate how educators may successfully handle the emotional demands of their work and develop a sense of competence and satisfaction in their positions, the function of emotional intelligence in supporting teacher adaptability has been little explored. There needs to be more in-depth empirical study to clarify the particular consequences of emotional intelligence on teachers' health and flexibility, even if the literature has started to acknowledge its possible relevance to the teaching profession. Examining teachers' perspectives, perceptions, and emotional realities, this research aims to provide detailed insights that might guide the creation of interventions and support systems backed by evidence to improve teachers' well-being and adaptability. This research seeks to enhance our knowledge of how educators might flourish in the

midst of the many problems they confront by conducting a qualitative analysis of the complex relationship between emotional intelligence, teacher well-being, and adaptability.

## Statement of the Problem

Classroom management, student-teacher relationships, learning outcomes, and professional dedication are some of the many complicated and ever-changing aspects of education that instructors encounter on a daily basis. Although there are many aspects that influence how well instructors handle these issues, one important but underexplored component is emotional intelligence. There has been a growing consensus that emotional intelligence - the capacity to identify, analyze, and control one's own emotions—is a critical factor in achieving success in many fields of work, including teaching. More research is needed to determine how it affects teachers' ability to adapt in various areas of their work. The ever-changing nature of classroom management is one of the biggest obstacles that educators face. It takes resilience and flexibility to manage a wide range of student behaviours, deal with unforeseen interruptions, and keep the classroom atmosphere upbeat. The role of emotional intelligence in helping educators adjust to these ever-changing classroom dynamics remains unclear. In order to find ways to help instructors manage classroom dynamics and encourage students to learn to their full potential, it is essential to understand the function of emotional intelligence in this setting.

The quality of the connections between students and teachers also has a significant impact on the atmosphere in the classroom and on students' academic and social-emotional development. Teachers who are emotionally intelligent may have an easier time reading their pupils' needs, building rapport, and navigating classroom difficulties. Further research is needed to determine the precise manner in which emotional intelligence impacts instructors' flexibility in cultivating these connections. By better understanding this connection, we can guide initiatives to foster a positive learning atmosphere, improve teacher-student relationships, and increase student achievement.

Improving students' learning outcomes and providing them with meaningful learning experiences are the end goals of education. To achieve this goal, it is essential that teachers be able to modify their teaching methods, provide individualised assistance, and deal with students' varied learning requirements. Teachers' emotional intelligence may have a major impact on how they adapt in various domains, which in turn affects their lesson planning, student relationships, and handling of difficult situations. However, in order to inspire initiatives to build curricula and evidence-

based practices, a comprehensive examination of the specific ways in which emotional intelligence influences instructors' flexibility to improve learning outcomes is required.

In addition, there are major problems with teacher retention, job satisfaction, and professional dedication in the teaching profession. The overall quality of education might be compromised when instructors are unable to work successfully due to burnout, stress, and disillusionment. Teachers who are emotionally intelligent may be more equipped to handle stress, keep themselves motivated, and remain dedicated to their career in the face of these difficulties. Still unknown, however, is the degree to which emotional intelligence affects educators' flexibility in reducing burnout. Keeping these things in mind, the purpose of this research is to examine how emotional intelligence might help educators adapt in many areas of their work. Improving teacher effectiveness, student outcomes, and the educational climate can be achieved by filling these important knowledge gaps in the literature and providing valuable insights that can guide the creation of tailored interventions, support systems, and professional development programmes.

**Significance of the Study**

Educators and educational stakeholders would benefit greatly from a better understanding of the function of emotional intelligence in relation to teachers' health and flexibility. First, a critical component of good teaching is exploring how emotional intelligence helps teachers adjust to the ever-changing context of classroom management. Effective classroom management is key to fostering an atmosphere that is conducive to learning. Teachers' capacity to quickly adjust to changing circumstances greatly impacts student involvement and academic performance. This research may help shape professional development programmes and efforts that focus on improving teachers' emotional intelligence abilities that contribute to successful classroom management. By identifying these competencies, we can better equip teachers to adapt to different learning environments.

Improving classroom dynamics and students' well-being requires a thorough investigation of how emotional intelligence impacts instructors' flexibility in developing student-teacher connections. Academic achievement, students' social and emotional growth, and classroom atmosphere are all positively impacted by teachers and students who have strong connections with one another. Teachers may gain valuable insight into the interpersonal skills and emotional competencies necessary to build supportive and trustworthy relationships with their students by examining the role of emotional intelligence in maintaining these relationships. With this knowledge in hand,

interventions and training programmes for educators may be designed to raise teachers' emotional intelligence and relational competence, which will have a positive effect on their students' motivation and performance in the classroom. Furthermore, the larger impact of emotional intelligence on educational efficiency may be better understood by examining how it influences instructors' adaptability to improve overall learning results. Optimal learning experiences and outcomes for all students depend on teachers' capacity to adjust their teaching methods, provide customized assistance, and meet unique student needs. This research may help school administrators, curriculum creators, and policymakers who are trying to promote educational excellence and equality by explaining how emotional intelligence affects teachers' flexibility in this area.

A critical issue in education today is teacher retention and job satisfaction; studying the impact of emotional intelligence on teachers' adaptability to reduce burnout and strengthen professional commitment is one way to address this. The quality and continuity of education might be jeopardized when teachers experience burnout, leave the profession, and see a decline in morale. Strategies for creating a professional setting that encourages and supports teachers may be informed by research on the effects of emotional intelligence on teachers' motivation, resilience, and sense of purpose. Educators and students alike will reap the benefits of focused interventions and policies that increase emotional intelligence by determining what elements contribute to teachers' well-being and retention. In conclusion, the importance of this research rests in the fact that it has the ability to deepen our comprehension of the pivotal function of emotional intelligence in the adaptability, health, and efficacy of educators. This project aims to improve teacher professional development, student outcomes, and the educational ecosystem as a whole by answering important research questions and providing evidence for policies, initiatives, and practices in these areas.

## Research Questions

1) What specific emotional intelligence competencies contribute to teachers' ability to adapt to the dynamic nature of classroom management situations?

2) How does emotional intelligence influence teachers' strategies for adapting and fostering positive relationships with students in the classroom?

3) In what ways does emotional intelligence influence teachers' adaptability and its effects on overall learning outcomes for students?

4) How does emotional intelligence influence teachers' adaptability in managing and mitigating factors that can affect their commitment to the teaching profession?

## Objectives of the Study

1) To determine the role of emotional intelligence in facilitating teachers' adaptation to the dynamic situation of classroom management;
2) To ascertain how emotional intelligence influences teachers' adaptation in fostering student-teacher relationships;
3) To analyze in what ways emotional intelligence effects teachers' adaptation in enhancing overall learning outcomes;
4) To investigate how emotional intelligence influences teachers' adaptation in mitigating commitment to the profession.

## Literature Review

Karakus, Toprak, Caliskan, and Crawford (2024) show through their final structural equation model that teachers' stress, anxiety, burnout, and psychosomatic complaints (PSCs) are greatly reduced when their EI levels are high and when they demonstrate effective EL tactics. Ultimately, the model demonstrates that instructors' emotional and physical health are better served by the deep acting approach, which incorporates more adaptable mechanisms for regulating emotions, as opposed to the surface acting strategy, which has the opposite impact. Similarly, Nawaz, Gajenderan, Gopinath, and Tharanya (2024) examine occupational stress in the teaching fraternity via the lenses of emotional intelligence and workplace spirituality. Their results indicate that occupational stress is predicted by emotional intelligence and workplace spirituality, with spirituality in the workplace playing only a little and negligible mediating role between EQ and occupational stress. On the other hand, those who score above average on the emotional intelligence and spirituality scales tend to have less stress overall.

Kamboj and Garg (2021) further highlight the role of perseverance and self-reliance in this context. Findings from parallel multiple mediation show that perseverance is a significant predictor of psychological well-being and a mediator of the relationship between emotional intelligence and teachers' well-being, while self-reliance is an inconsistent but significant mediator in this relationship. Their research also reports a statistically significant correlation between emotional intelligence and psychological health, with female educators outperforming their male counterparts in terms of emotional intelligence and resilience. In another study, Ngui and Lay (2020) focus on the interconnections among student teachers' individual resources for coping with practicum stress, employing a partial least square-structural equation modelling approach with 200 preservice teachers in Sabah, Malaysia. Using a

questionnaire derived from pre-existing measures, they found that although emotional intelligence, self-efficacy, and subjective well-being were useful and had predictive power, they failed to adequately account for practicum stress when it came to explaining resilience. These results point to the need for future exploratory research to include other components in order to properly understand felt practicum stress.

Adding to this body of work, Samanvitha and Jawahar (2012) emphasize that both workplace happiness and productivity are significantly impacted by emotional intelligence on the job. Their research investigates the correlation between academics' strategic emotional intelligence and their level of work satisfaction in schools of the arts and sciences. Using the Mayer-Salovey-Caruso Emotional Intelligence Test and the Wong Work Satisfaction Inventory with a sample of 98 faculty members from Tamil Nadu, India, they analysed the data through a variety of statistical methods, finding that emotional intelligence is an important factor influencing work satisfaction among faculty.

## Research Gap

The study aims to address several research gaps within the existing literature:

**Limited Integration of Emotional Intelligence in Teacher Training -** There is a lack of data on how much emotional intelligence is incorporated into teacher preparation programmes, even as its significance in education is becoming more widely acknowledged. Emotional intelligence abilities are crucial for successful classroom management, positive student-teacher interactions, and overall well-being, yet they are often neglected in teacher training programmes in favour of subject knowledge and methodological understanding.

**Lack of Comprehensive Understanding of Emotional Intelligence in Teacher Well-Being -** While studies have explored specific dimensions of teachers' well-being, there is insufficient research on the overall impact of emotional intelligence on their holistic well-being. Previous studies have largely focused on individual components of emotional intelligence—such as self-regulation or empathy—without considering its integrated effect. A more comprehensive analysis of the relationship between teachers' emotional intelligence and their overall well-being is therefore required.

**Limited Exploration of Emotional Intelligence in Teacher Adaptation -** Although there is a growing body of literature on teacher adaptation and resilience,

a clear research gap remains in understanding the specific role of emotional intelligence in facilitating adaptation to the dynamic challenges of the profession. While some studies have examined the influence of individual emotional intelligence competencies, there is a need for a more holistic investigation into the multifaceted ways in which emotional intelligence supports teachers' ability to adapt to diverse classroom contexts and evolving educational landscapes.

**Insufficient Attention to Contextual Factors -** Many studies on emotional intelligence in education have focused primarily on individual-level factors, such as teachers' personal traits or emotional competencies. However, limited research has examined how contextual factors—such as school culture, leadership practices, and policy environments—interact with emotional intelligence to shape teacher well-being and adaptability. A more nuanced understanding of these dynamics is essential for designing interventions and support systems that address both individual and systemic challenges.

**Limited Longitudinal Research -** While some studies have assessed the short-term effects of emotional intelligence interventions on teacher well-being and adaptation, there remains a gap in longitudinal research that investigates the long-term impact of emotional intelligence development over the course of teachers' careers. Such studies are essential to understanding how emotional intelligence evolves over time, how it influences teachers' professional trajectories, and how it contributes to sustained well-being and effectiveness in the teaching profession.

By addressing these research gaps, this study seeks to provide a deeper understanding of the complex interplay between emotional intelligence, teacher well-being, and adaptation within educational contexts. The findings aim to inform the design of evidence-based interventions and support mechanisms that enhance teacher professional practice and improve student outcomes.

## Method

This study employs a document analysis methodology using a systematic approach to review and analyse relevant literature, research articles, policy documents, and educational frameworks related to emotional intelligence, teacher well-being, and adaptation in the teaching profession. The process involved identifying key themes, concepts, and theoretical frameworks, synthesising information across sources, and critically evaluating findings and implications. Through a comprehensive review of existing literature and documents, the study develops a deeper understanding of the role of emotional intelligence in promoting teacher well-being and supporting

adaptation across diverse educational contexts. This methodological approach ensures that the study is grounded in robust evidence and provides practical insights to inform the development of effective interventions, professional development programmes, and policies aimed at supporting educators in their professional journey.

## Analysis and Interpretation

### Objective 1

*$O_1$: To determine the role of emotional intelligence in facilitating teachers' adaptation to the dynamic situation of classroom management.*

Emotional intelligence plays a crucial role in helping teachers adjust to changing classroom management settings, which is especially important in today's complex classroom ecology where multiple elements impact teaching and learning. Teachers may use emotional intelligence—which includes traits such as self-awareness, self-regulation, empathy, social skills, and resilience—as a guide for dealing with the myriad student behaviours, policy requirements, and classroom challenges. By cultivating a deep awareness of their own emotions and those of others, teachers are better equipped to meet the dynamic demands of their classrooms and students. This introduction lays the groundwork for examining how emotional intelligence provides educators with the resources and understanding to adeptly handle the complexities of classroom management. Several important facets make up emotional intelligence's role in helping teachers adapt to the ever-changing context of classroom management:

**Self-awareness -** Teachers with high emotional intelligence are self-aware; they understand how they feel, what influences their behaviour, and how to adapt their teaching to different circumstances. Self-awareness enables teachers to evaluate their strengths, weaknesses, and opportunities for growth, which in turn allows them to better manage classroom dynamics. With this awareness, teachers can adjust their methods, behaviours, and decision-making processes in real time to address emerging challenges effectively.

**Self-regulation -** Teachers who are emotionally intelligent are better able to manage their reactions and maintain composure under pressure. By controlling their emotional responses, teachers can avoid impulsive reactions, remain focused on lesson objectives, and model positive behaviour for students. This ability to self-regulate fosters a constructive learning environment and supports responsiveness to students' evolving needs.

**Empathy -** Emotionally intelligent teachers are better able to place themselves in their students' positions and understand their feelings. With empathy, teachers can more effectively support students in overcoming challenges, addressing individual needs, and achieving success. Demonstrating empathy helps build trust and respect, creating classrooms that are welcoming, inclusive, and emotionally safe spaces for learning.

**Social skills -** Teachers with high emotional intelligence possess strong social skills, enabling them to interact productively with students and colleagues, collaborate effectively, and resolve conflicts. Teachers who excel in managing group dynamics, building positive relationships, and navigating interpersonal challenges contribute to cooperative learning environments where students support one another and work together toward shared goals.

**Resilience -** Teachers who are emotionally intelligent demonstrate resilience, enabling them to recover from setbacks, confront obstacles, and persist through difficulties. Resilient educators maintain a positive outlook, stay motivated, and remain committed to their work. This resilience allows them to adapt to new circumstances, learn from experiences, and continuously refine their practices to better serve their students' needs.

By encouraging self-awareness, self-regulation, empathy, social skills, and resilience, emotional intelligence is vital in helping teachers adapt to the ever-changing dynamics of classroom management. Through these qualities, teachers can navigate classroom complexities, respond to challenges, and cultivate a positive learning environment that supports student success.

**Objective 2**

*$O_2$: To ascertain how emotional intelligence influences teachers' adaptation in fostering student-teacher relationships.*

When educators have high levels of emotional intelligence, they are better able to connect with their pupils on an emotional level, which enhances their capacity to comprehend and empathize with them. Several facets of the student-teacher dynamic are affected by emotional intelligence, as outlined below:

**Empathy and Understanding -** The ability to understand and share the feelings, thoughts, and experiences of pupils is a hallmark of emotionally intelligent educators.

By acknowledging and validating students' emotions, teachers can foster an accepting and welcoming classroom climate where all students feel heard and appreciated. Through developing a compassionate understanding, educators are able to customize their methods and responses to meet the unique needs of their students, cultivating an environment where students feel valued and trusted.

**Effective Communication -** Teachers with high emotional intelligence are better able to connect with their pupils on an emotional level, which allows them to communicate with greater clarity, empathy, and respect. Such teachers are able to set reasonable standards, provide constructive feedback, and resolve problems without diminishing their students' self-esteem. Open and honest communication, grounded in trust and mutual respect, encourages active participation and collaboration among students.

**Building Rapport -** Emotional intelligence is key to forming strong connections with pupils and establishing rapport. Warmth, sincerity, and approachability on the part of teachers create a welcoming environment where students feel safe sharing their thoughts and asking questions. Emotionally intelligent teachers build close relationships with their students by listening to their opinions, showing genuine concern, and demonstrating interest in their perspectives, thereby fostering engagement, motivation, and academic achievement.

**Conflict Resolution -** Disputes are inevitable in the classroom, both among students and occasionally between students and teachers. Emotional intelligence equips educators with the ability to manage and resolve these conflicts constructively. By maintaining composure and empathy in the face of disagreement, teachers model positive conflict resolution strategies, teaching pupils valuable skills in emotional regulation and problem-solving. Addressing conflicts with sensitivity and understanding strengthens trust and resilience in student-teacher relationships.

**Adaptability and Flexibility -** Teachers with high emotional intelligence are able to adjust their strategies and responses to suit the evolving needs and preferences of their students. They are skilled at interpreting nonverbal cues and responding appropriately through pedagogy, classroom management techniques, and communication styles. This adaptability ensures that students feel heard, understood, and supported, fostering an inclusive and responsive learning environment.

**In conclusion,** emotional intelligence significantly influences how well teachers adapt to their students' needs and strengths by enhancing their communication,

empathy, rapport building, conflict resolution, and flexibility. By cultivating these abilities, teachers can create supportive, inclusive, and rewarding classroom environments that lay the foundation for meaningful learning experiences and academic success.

**Objective 3**

*$O_3$: To analyze in what ways emotional intelligence effects teachers' adaptation in enhancing overall learning outcomes.*

Teachers' emotional intelligence greatly affects their ability to adjust in order to improve learning outcomes. Emotionally intelligent educators create safe and welcoming classrooms, encourage student participation, and employ effective teaching strategies. The following analysis highlights how emotional intelligence influences educators' flexibility and impacts student achievement:

**Creating a Positive Learning Environment -** Emotional intelligence enables teachers to cultivate a positive and inclusive classroom climate where students feel safe, valued, and motivated to learn. Teachers with high emotional intelligence demonstrate warmth, empathy, and respect toward their students, creating an atmosphere conducive to academic risk-taking and exploration. A positive learning environment encourages active participation, collaboration, and critical thinking, ultimately enhancing students' overall learning outcomes.

**Tailoring Instruction to Individual Needs -** The capacity to identify and address the wide range of student strengths, interests, and learning styles is a hallmark of emotionally intelligent educators. Such teachers successfully accommodate student diversity by recognising students' emotions, motivations, and learning preferences, and then adapting their teaching strategies, resources, and assessments accordingly. This tailored method of instruction benefits all learners by increasing engagement, confidence, and performance in the classroom.

**Promoting Social-Emotional Learning (SEL) -** Students' development of social-emotional learning skills—including self-awareness, self-regulation, empathy, and relationship-building—is greatly influenced by their teachers' emotional intelligence. When educators model high levels of emotional intelligence, they foster a classroom culture that values emotional health and interpersonal relationships. Through integrated SEL activities and explicit instruction, emotionally intelligent educators support students' holistic development, thereby improving overall learning outcomes.

**Managing Classroom Dynamics -** Teachers with high levels of emotional intelligence are better able to maintain smooth classroom functioning and address student disputes or disruptive behaviours effectively. In challenging situations, emotionally intelligent educators remain composed, empathetic, and proactive in defusing tensions, ensuring that students continue to learn in a supportive environment. By cultivating safety, respect, and belonging, such teachers enable students to stay focused and achieve their full potential.

**Building Strong Teacher-Student Relationships -** Establishing trustworthy, supportive connections between students and teachers is essential for academic achievement, and emotional intelligence plays a critical role in this process. Teachers with high emotional intelligence build rapport through care, respect, and attentive listening, motivating students to stay engaged and committed. When students feel understood and supported, they are more likely to take risks, ask questions, and actively participate in their learning journey.

**In conclusion,** teachers who demonstrate emotional intelligence are better able to adapt their lessons to student needs, create welcoming classroom climates, foster social-emotional competencies, maintain positive dynamics, and build strong relationships. By applying these skills, teachers not only design engaging and effective lessons but also help students achieve their intellectual, social, and emotional potential.

**Objective 4**

*$O_4$: To investigate how emotional intelligence influences teachers' adaptation in mitigating commitment to the profession.*

Emotional intelligence plays a critical role in influencing teachers' adaptation and sustaining their commitment to the profession by enhancing their resilience, job satisfaction, and sense of purpose. The following discussion outlines how emotional intelligence impacts teachers' adaptation and its subsequent effects on professional commitment:

**Resilience in the Face of Challenges -** Teaching is a demanding profession that often entails facing numerous challenges, including student behaviour issues, administrative pressures, and societal expectations. Emotional intelligence equips teachers with the resilience to navigate these challenges effectively. Emotionally intelligent teachers are adept at managing stress, coping with setbacks, and bouncing back from difficult situations. By recognising and regulating their emotions, setting realistic expectations, and maintaining a positive outlook, emotionally intelligent

teachers are better prepared to persevere in the face of adversity, thereby mitigating factors that could erode their commitment to the profession.

**Coping with Burnout and Stress -** Burnout and stress are pervasive issues in the teaching profession that can significantly affect teachers' commitment and job satisfaction. Emotional intelligence enables teachers to recognise the signs of burnout and implement strategies to cope effectively. Emotionally intelligent teachers prioritise self-care, set boundaries, and seek support from colleagues and mentors when needed. By managing their emotions and stress levels, they can prevent burnout and maintain their passion and dedication to teaching, thereby sustaining their long-term commitment to the profession.

**Maintaining Job Satisfaction -** Emotional intelligence fosters job satisfaction by enabling teachers to cultivate positive relationships with students, colleagues, and administrators. Teachers with high emotional intelligence are skilled at communicating effectively, resolving conflicts, and collaborating with others. By fostering a supportive and inclusive work environment, emotionally intelligent teachers experience greater job satisfaction and fulfilment in their roles. This sense of satisfaction and belonging strengthens their commitment to the teaching profession, as they feel valued and appreciated for their contributions.

**Aligning Personal Values with Professional Goals -** Emotional intelligence helps teachers align their personal values with their professional goals, fostering a sense of purpose and meaning in their work. Emotionally intelligent teachers understand their own motivations, strengths, and areas for growth, allowing them to pursue opportunities for professional development that are aligned with their values and aspirations. By finding fulfilment in their work and making meaningful contributions to students' lives, emotionally intelligent teachers cultivate a strong sense of purpose that sustains their commitment even in the face of challenges.

**Adapting to Change and Innovation -** The field of education is constantly evolving, with new technologies, pedagogical approaches, and policy changes reshaping the landscape of teaching and learning. Emotional intelligence enables teachers to adapt to these changes effectively. Teachers with high emotional intelligence embrace innovation and lifelong learning while remaining open to new ideas and perspectives. By adapting to change and staying flexible in their approaches, emotionally intelligent teachers remain engaged and committed to their profession, even as external circumstances evolve.

**In conclusion,** emotional intelligence influences teachers' adaptation and sustains their professional commitment by enhancing their resilience, coping mechanisms, job satisfaction, sense of purpose, and ability to adapt to change. By cultivating emotional intelligence skills, teachers can sustain their passion, dedication, and commitment to the profession, ensuring that they continue to make a positive impact on students' lives and contribute meaningfully to the field of education over the long term.

## Conclusion

Examining educational frameworks, empirical data, and current research, the study highlights how emotional intelligence greatly affects teachers' well-being and adaptability. The findings shed light on the complex relationship between teachers' professional lives and emotional intelligence characteristics such as self-awareness, self-regulation, empathy, and social skills. Overall, the research demonstrates that emotional intelligence is crucial in helping teachers cope with stress and burnout, build rapport with students and colleagues, and remain resilient in the face of adversity.

In addition, the study underscores the effectiveness of incorporating emotional intelligence development into teacher education and support programmes. It calls for a more comprehensive approach to teacher preparation that integrates emotional competencies alongside pedagogical knowledge and subject expertise. The conclusion advocates for a shift in thinking about teacher support, emphasising the importance of programmes that prioritise emotional intelligence and continuous professional development to enhance teacher well-being and productivity.

The study further highlights the need for ongoing research and collaboration to deepen understanding of emotional intelligence's role in education. While this research provided valuable insights into how emotional intelligence influences teachers' well-being and adaptability, it also revealed gaps that must be addressed. Specifically, more longitudinal studies, qualitative inquiries, and interdisciplinary collaborations are required to capture the long-term and multifaceted effects of emotional intelligence and to inform the development of evidence-based policies and interventions.

Ultimately, the findings of *The Role of Emotional Intelligence in Teacher Well-Being and Adaptation* serve as a strong call for school administrators, policymakers, and researchers to prioritise emotional intelligence training for teachers. By recognising and leveraging the potential of emotional intelligence, the education system can better equip teachers to thrive amidst professional challenges, foster

supportive and resilient classroom environments, and improve both teacher effectiveness and student outcomes.

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# Investigating the Impact of Self-Efficacy on Academic Motivation Among Afghan Adult Learners in India

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## Abstract

The purpose of this study was to investigate the relationship between self-efficacy and academic motivation among Afghan adult learners in India. The research uses a descriptive quantitative design. This study's sample includes 204 Afghan learners enrolled in universities across Gujarat, New Delhi, Karnataka and Maharashtra. The participants were chosen using a purposive selection technique. The data was collected using standardised scales of the General Self-Efficacy Scale (GSES) and the Academic Motivation Scale (AMS). The relationship between self-efficacy and academic motivation was assessed using inferential statistics, namely Spearman's correlation. Additionally, the Mann-Whitney U test was used to evaluate self-efficacy and academic motivation between male and female learners. SPSS software was used to analyse the data and visualise it. The analysis found a moderate positive connection ($\rho = 0.436$, $p = 0.001$) between self-efficacy and academic motivation, showing that stronger self-efficacy leads to greater motivation. However, the Mann-Whitney U test revealed no significant differences in self-efficacy ($p = 0.242$) or academic motivation ($p = 0.768$) between male and female Afghan learners. The data indicated that, while self-efficacy is important for increasing academic motivation, gender had no significant influence on either measure in this population. Self-efficacy plays a crucial role in increasing academic motivation among Afghan adult learners in India. However, gender differences in self-efficacy and motivation were not of statistical significance.

**Keywords:** *Self-efficacy, academic motivation, Afghan learners, higher education, learner experience.*

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## Introduction

Academic motivation is a crucial driver of learning (Deci & Ryan, 2015; King, 2016). When learners are motivated, they experience a stronger sense of accomplishment, show persistence in their studies, display resilience in the face of failure, and develop a deeper interest in specific subjects (Hidi, 2000; Katz & Stupel, 2016). Conversely, students with low academic motivation often struggle to engage meaningfully in the learning process, making motivation an essential factor for academic success in higher education. Research suggests that many learners, including Afghans, face challenges due to low academic motivation, perceiving education as a requirement rather than a fulfilling pursuit (Hidajat et al., 2020; Cannard et al., 2016). This perception can lead to disengagement, skipped learning opportunities, and inconsistent participation. To address these challenges, learning must be designed to be interesting, interactive, and engaging. Afghan learners who lack motivation are more likely to procrastinate, give up when confronted with difficulties, and perform poorly in academic tasks. Several external factors - such as parenting styles, teaching practices, family and peer support - contribute to variations in student motivation (Boonk et al., 2020; Chen, 2015; Egan et al., 2021; Guay et al., 2017). However, internal psychological factors also play a critical role.

Among these internal factors, self-efficacy has emerged as a significant determinant of academic motivation (Hidajat et al., 2020; D'Lima et al., 2014). Self-efficacy refers to an individual's belief in their ability to organize, regulate, and execute actions required to achieve specific goals. It develops through the interaction of environment, personality, and self-assessment (Ormrod, 2006), and is closely tied to self-evaluation of performance (Slavin, 2006; Schunk, 1991). Learners with higher self-efficacy approach academic tasks more productively and confidently, which, in turn, enhances their motivation. Previous studies confirm a positive association between self-efficacy and academic motivation (McGeown et al., 2014; Talsma et al., 2019). This relationship can be explained by the fact that students with strong self-efficacy tend to adopt effective learning strategies, persist in the face of challenges, and actively seek opportunities to expand their knowledge. In the Afghan context, learners who believe in their ability to manage their studies are more likely to engage in lectures, adopt suitable learning approaches, and pursue their academic goals with greater consistency. A positive attitude towards learning further reinforces competence development and knowledge acquisition. While much evidence points to the positive role of self-efficacy in sustaining academic motivation, some studies have reported conflicting findings. Therefore, further research is necessary to deepen our understanding of how self-efficacy influences academic motivation, particularly among Afghan learners who face unique cultural and educational challenges.

## Research Questions

1. How does self-efficacy affect academic motivation among Afghan adult learners in India?
2. Is self-efficacy a significant predictor of academic motivation among Afghan learners?
3. Do gender and academic level influence the relationship between self-efficacy and academic motivation?

## Research Objectives

1. To examine the relationship between self-efficacy and academic motivation among Afghan adult learners in India.
2. To assess the differences in self-efficacy between male and female Afghan adult learners in India.
3. To evaluate the differences in academic motivation between male and female Afghan adult learners in India.

## Research Hypothesis

**H0 1.** There is no significant relationship between self-efficacy and academic motivation among Afghan adult learners in India.

**H0 2**. There is no significant difference in self-efficacy between male and female Afghan adult learners in India.

**H0 3.** There is no significant difference in academic motivation between male and female Afghan adult learners in India.

## Delimitation of the Study

1. The study is delimited to Afghan adult learners in India.
2. The study is delimited to four Indian states: Gujarat, Delhi, Karnataka and Maharashtra.

## Research Design

This study uses a descriptive quantitative research approach in which numerical data is collected and analysed systematically to analyse trends and patterns in self-efficacy and academic motivation among Afghan adult learners in India. This method will assess the relationship between variables and gives statistical information about how self-efficacy affects academic motivation.

## Sampling

Purposive sampling was employed to select a sample of 204 Afghan learners from universities in Gujarat, New Delhi, Karnataka and Maharashtra.

## Research Tools

Survey will serve as the primary data collection tool by employing following scales.

1. The General Self-Efficacy Scale (GSES), originally developed by Schwarzer and Jerusalem (1995), assesses people's confidence in their ability to overcome barriers and achieve goals. It consists of ten items scored on a four-point Likert scale (1 = Not true, 4 = Exactly true), with higher scores indicating stronger self-efficacy. The scale is very reliable (Cronbach's $\alpha$ = 0.76-0.90) and has been extensively validated.
2. The Academic Motivation Scale (AMS), developed by Vallerand et al. (1992), based on Self-Determination Theory, this test assesses learners' intrinsic motivation, extrinsic motivation and amotivation. It consists of 28 items scored on a 7-point Likert scale, with higher scores indicating greater drive. The AMS is very reliable (Cronbach's $\alpha$ = 0.70–0.86) and commonly used in educational studies.

## Data Collection Procedure

The researcher personally visited the sampled states in India. The data collection began with distributing tools on self-efficacy and academic motivation to each learner in person.

## Data Analysis and Interpretation

The data analysis for the study was done using inferential statistics to analyse the relationship between self-efficacy and academic motivation using Spearman's correlation. Additionally, the Mann-Whitney U test was used to compare self-efficacy and academic motivation between male and female learners. SPSS software was used to analyse and visualise the data.

**Objective 1** - To examine the relationship between self-efficacy and academic motivation among Afghan adult learners in India.

**H0 1**. There is no significant relationship between self-efficacy and academic motivation among Afghan adult learners in India.

The Spearman's correlation test was used to investigate the relationship among Afghan adult learners' self-efficacy and academic motivation. This non-parametric test was chosen because it violated the normality and linearity assumptions, making it appropriate for determining the strength and direction of the relationship between these two variables.

**Table 01 - Spearman's Correlations for Self-efficacy and Academic Motivation**

| Correlations | | | | |
|---|---|---|---|---|
| **Spearman's rho** | | | **Self-efficacy** | **Academic Motivation** |
| | **Self-efficacy** | Correlation Coefficient | 1.000 | 0.436 |
| | | Sig. (2-tailed) | . | 0.001 |
| | **Academic Motivation** | Correlation Coefficient | 0.436 | 1.000 |
| | | Sig. (2-tailed) | 0.001 | . |

The analysis assessed the relationship between self-efficacy and academic motivation among Afghan adult learners in India. Spearman's rho correlation revealed a slight positive relationship ($\rho = 0.436$), indicating that better self-efficacy is linked to higher academic motivation. Furthermore, the significance value ($p = 0.001$) fell below the 0.05 level, indicating that the relationship is statistically significant. The null hypothesis, which indicated that there is not a significant relationship between self-efficacy and academic motivation, is rejected because the results demonstrate a significant relationship.

**Objective 2** - To assess the differences in self-efficacy between male and female Afghan adult learners in India.

**H0 2.** There is no significant difference in self-efficacy between male and female Afghan adult learners in India.

The Mann-Whitney U test was used to compare self-efficacy levels among male and female Afghan adult learners. This non-parametric test was chosen because it is suitable for comparing two independent groups when normality assumptions are violated.

**Table 02 - Mann-Whitney U Test Rank for Self-efficacy**

| **Ranks** | | | |
|---|---|---|---|
| **Self-efficacy gender** | **Number** | **Mean Rank** | **Sum of Ranks** |
| Male | 181 | 104.22 | 18864.00 |
| Female | 23 | 88.96 | 2046.00 |
| **Total** | 204 | | |

**Table 03 - Mann-Whitney U Test Statistics for Self-efficacy**

| **Self-efficacy Test Statistics** | |
|---|---|
| Mann-Whitney U | 1770.000 |
| Wilcoxon W | 2046.000 |
| Z | -1.171 |
| Asymp. Sig. (2-tailed) | 0.242 |

According to the Mann-Whitney U test results, the mean rank for male learners (104.22) appears to be greater than that for female learners (88.96), but the statistical analysis does not show a significant difference in self-efficacy between the two groups. The Mann-Whitney U value of 1770.000 results in a p-value of 0.242, which is greater than the standard 0.05 level for significance. As a result, we fail to reject the null hypothesis, which states that there is no significant difference in self-efficacy between male and female adult Afghan learners in India. These data indicate that, within this sample, gender had no significant influence statistically on learners' self-efficacy levels.

**Objective 3 -** To evaluate the differences in academic between male and female Afghan adult learners in India.

**H0 3**. There is no significant difference in academic motivation between male and female adult Afghan learners in India.

To investigate gender differences in academic motivation among adult Afghan learners, the Mann-Whitney U test was used. This non-parametric test was chosen because it effectively compares two independent groups when the data does not have a normal distribution.

**Table 04 - Mann-Whitney U Test Rank for Academic Motivation**

| Ranks | | | |
|---|---|---|---|
| **Academic motivation gender** | **Number** | **Mean Rank** | **Sum of Ranks** |
| Male | 181 | 102.93 | 18631.00 |
| Female | 23 | 99.09 | 2279.00 |
| **Total** | 204 | | |

**Table 05 - Mann-Whitney U Test Statistics for Academic Motivation**

| Academic Motivation Test Statistics | |
|---|---|
| Mann-Whitney U | 2003.000 |
| Wilcoxon W | 2279.000 |
| Z | -0.294 |
| Asymp. Sig. (2-tailed) | 0.768 |

According to the Mann-Whitney U test, male learners have a slightly higher mean rank (102.93) than female learners (99.09), but the difference is not statistically significant. The test statistic (U = 2003.000) gives a p-value of 0.768, which exceeds the standard alpha limit of 0.05. Therefore, we do not reject the null hypothesis, which suggests that there is no significant difference in academic motivation between male and female Afghan adult learners in India. So, gender does not appear to have a significant influence on academic motivation in this group.

## Findings and Discussion

The study found a moderate positive relationship ($\rho = 0.436$, $p = 0.001$) between self-efficacy and academic motivation among Afghan adult learners in India. This finding suggests that learners with higher self-efficacy are more academically inspired. This evidence is consistent with Bandura's (1997) self-efficacy theory, which states that belief in one's abilities promotes goal-directed behaviour and persistence. The rejection of the null hypothesis indicates self-efficacy as a significant predictor of academic motivation, highlighting the importance of interventions to boost learners' self-belief. According to a previous study (Schunk & Pajares, 2009), high self-efficacy promotes confidence, resilience and intrinsic motivation, whereas poor self-efficacy can lead to anxiety and disengagement. Given the cultural and transition issues that Afghan adult learners confront in India, mentorship programmes, peer support and academic counselling may help them feel more capable and motivated.

Gender differences were not statistically significant for self-efficacy (U = 1770.000, p = 0.242) or academic motivation (U = 2003.000, p = 0.768). While male learners had slightly higher mean ranks, the differences were not significant, despite several studies that indicate male learners had stronger self-efficacy (Schunk & DiBenedetto, 2021). Instead, these data indicate that cultural adaptation, institutional support and personal resilience are more important in influencing self-efficacy and motivation than gender alone. Overall, the study emphasises self-efficacy as a key driver of academic desire while challenging gender stereotypes.

## Implications of the Study

The study's findings have practical and theoretical consequences for educators, governments, and institutions that help Afghan adult learners in India.

**1. Academic and Institutional Support**

- Universities should conduct mentorship programmes, skill development seminars and academic counselling sessions to boost learners' self-efficacy, as it greatly impacts academic motivation.
- Providing structured orientation programmes can boost Afghan adult learners' confidence in their academic ability, leading to improved motivation and performance.

**2. Gender-Neutral Interventions**

- The study identified no significant gender differences in self-efficacy and academic motivation, indicating that academic interventions should prioritise general learner empowerment over gender-specific programmes.
- Educators should use inclusive teaching methods that address varied learner needs, regardless of gender.

**3. Psychological and Emotional Support**

- Universities should provide psychological support services like counselling, stress management courses, and self-efficacy training to enhance motivation.
- Encourage peer mentoring and faculty-learner engagement to help Afghan adult learners gain confidence in their academic ability.

4. Policy Considerations for Afghan Learners in India

- Universities and government agencies should provide scholarships, financial aid and institutional support to boost self-efficacy and academic motivation.
- Policies should prioritise creating culturally sensitive learning environments that address the unique challenges faced by Afghan learners in Indian universities.

## Conclusion

This study investigated the influence of self-efficacy in increasing academic motivation among Afghan adult learners in India and looked at gender inequalities in

these factors. The findings indicated a moderate positive relationship between self-efficacy and motivation, supporting the idea that learners who trust their own talents are more likely to remain motivated and succeed in their studies. However, gender differences were found to be statistically negligible, implying that personal, cultural and institutional factors had a greater influence on self-efficacy and academic motivation than gender. The findings of this study emphasise the importance of self-efficacy in learner performance, arguing that institutions should actively develop conditions that encourage self-confidence, resilience and motivation among Afghan learners. Given the challenges that these learners face, like language barriers, cultural adaptation and financial constraints - targeted interventions, such as structured mentorship programmes, academic counselling and psychological support services, can play a critical role in increasing self-efficacy and motivation. Universities should also prioritise peer mentoring programmes, faculty participation self-regulation and goal-setting courses to ensure that learners have the tools they need to successfully handle academic hurdles.

Furthermore, the lack of significant gender differences in self-efficacy and motivation suggests that educational initiatives should be inclusive and accessible to all, rather than gender specific. Future research should look into additional underlying elements that affect self-efficacy and motivation, such as socio-economic status, language competence, cultural identity, and institutional support mechanisms. Further studies might look at how self-efficacy and motivation change over time, offering more insight into the long-term impact of various support systems. Addressing these concerns is not only critical for Afghan adult learners' success in India, but it also helps to create a more diversified, internationally aware and culturally rich educational landscape.

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# Evolving Experiential Learning Culture in Middle Schools in India: A Pedagogical Approach through the Lens of Kolb's Model

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"Experience is the only source of learning." - Swami Vivekananda

## Abstract

The rapid technological advancements and replacements lead to changeability. This results in newer meanings and representations of the epistemic and affective styles. Learning happens from synergetic transactions between the person and the environment. Therefore, education should simulate experiences of the real-world. This article intends to study experiential learning through the lens of Kolb's Experiential Learning Theory, and its implementation in schools. Kolb's Learning Cycle displays practicality and rationale to meet the overarching aim of equability and inclusiveness in contemporary education. He maintains the constructivist approach, where experience is the key to learning and new experiences are based on prior encounters. Learning to Kolb is a process and not an outcome. Kolb's differentiators are the learning modes or stages and learning styles which integrate the processing continuum and the perception continuum in the learning process. The article explores experiential learning using Kolb's Learning Cycle as a pedagogical approach at middle school level and proposes guidelines for teachers to plan and execute their lessons.

**Keywords:** *Experiential learning, Kolb's learning cycle model, pedagogy, middle school, NEP 2020, NCF, learner's autonomy, developmental stages.*

## Experiencing Experiences

In general, we can say that learning is a lifelong process, which goes from womb to tomb. In psychological terms, learning is a relatively permanent change in behaviour (Kimble, 1961). Therefore, learning provides a key to the structure of personality and behaviour. Experience plays a dominating role in moulding and shaping the behaviour of the learners right from birth. This brings up an important question -

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what is experience? Dewey (1925) believes that experience is an "interaction of organism and environment". The interaction leaves an impression on the mind. Experiences are "mental and corporeal phenomena" that can be directly or vicariously felt, recounted, reproduced, and transferred to new situations thereby generating new experiences (Jantzen, 2013). A child knows merely through experience that if they throw a ball towards the sky, it is bound to fall back on the ground. Looking at the mirror, children are fascinated by their image in it, and they construct a new understanding about reflection in shiny surfaces including water.

How does experience exhibit itself? Experiences are manifested in intrapersonal and interpersonal interactions embedded in an environment that forms the basis of an individual's perceptions and thoughts which eventually modify behaviour (Paulsen, 2020, p. 863). Directly or indirectly, experiences bring a change in behaviour which is the end goal of all learning. Learning precedes all changes or modifications in behaviour, and new learning is constructed through prior experiences maintaining the "experiential continuum" (Dewey, 1938, p. 28). Therefore, experiences and learning are complementary in nature and together they play a vital role in shaping the behaviour of learners. The two-way exchange of experience and learning forms the basis of experiential learning.

## Theoretical Framework of Experiential Learning

In modern times, experiential learning has found its theoretical and pedagogical stronghold through the works of Kurt Lewin, John Dewey, Jean Piaget, Lev Vygotsky, and David Kolb. Lewin's Field Theory (1940) emphasizes behaviour formation when an individual participates in a series of life spaces (work, family, society) to make learning "effective and goal-directed". The theory draws similarities from B. F. Skinner's (1938) theory of operant conditioning which is particularly relevant when considering pedagogical activities (Roberts & Potrac, 2014). Lewin, in his three-stage change model (1940), highlighted that a dialectical process that includes concrete experiences and ongoing feedback to learners is inevitable to modify learners' behaviour. Dewey's Model of Experiential Learning (1938) asserts that learners "learn by doing" and "concrete experiences lead to higher-order purposeful action". Dewey (1896), through his "Laboratory Schools", ascertained that life is a laboratory where learners test hypotheses within a system of variables. Like Lewin, Dewey (1938) also describes learning as a dialectical process that "integrates experience and concepts, observations and actions". Piaget's Model of Learning and Cognitive Development (1936) substantiates the implementation of experiential learning as pedagogy. Piaget claims that cognitive structures are a result of "direct exposure

and interaction with the environment" (Jeanette C. et al., 2023, p. 86). Learning, according to Piaget, takes place through assimilation of experiences into existing schemas/concepts, accommodation of schemas/concepts to fit new schemas, and striking balance between existing and new information (Hanfstingl B. et al., 2021). Therefore, experiences beget experiences, learning constructs learning.

The constructivist philosophy is consolidated by Vygotsky (1978, p. 73) who believes learners construct knowledge through close interactions by intertwining external and internal factors in a socio-cultural environment. This implies the importance of individual and collaborative experiences in the learning process. David Kolb pioneered Experiential Learning Theory (ELT) in 1984 by integrating the works of the above philosophers. Kolb (1984) believes that experience is the learning source, and learning is the process to create knowledge through the transformation of experience. Experiences may have a "developmental quality" and could help people improve their capabilities by having their current presuppositions, expectations, and abilities challenged (Bessant J., 2001). Kolb's theory and model are premised on providing learners with learning experiences that foster active participation and sensory interactions with the learning experiences (Akella, D., 2010). Saunders (1992) explains that meaning is created in the mind of the students because of their sensory interactions with their world and because it is created in the mind of the learners, it cannot simply be told by the teacher. Therefore, students should be able to choose and take charge of their learning. Therefore, Kolb (1984) places utmost emphasis on learner's autonomy. Research supports the view that when learners are psychologically attached to the learning process, it is more meaningful and relevant. Furthermore, learner involvement in decision-making ensures that learning is effective. Kolb (2005) states that increased learner engagement has been seen when learners are aware of their abilities and interests. Therefore, identifying learning styles is helpful in setting learning goals, implementing learning strategies, reflecting on experiences, and taking responsibility of one's learning in and out of class. Kolb's recursive learning cycle provides a structure for identifying learning styles and establishing learning stages.

Considering the above, experiential learning is a pedagogical approach that can cater to a wide range of skills for a diverse population. There are two important reasons to substantiate the claim. One, through experiential learning, learners are provided with a variety of experiences to be actively engaged in the learning process. Experiences are so designed that they develop their critical thought, generate ideas, and foster effective communication of the ideas. Second, ideas are not immutable elements of thought as they undergo continuous transformation through prior and

new experiences (Kolb, 2014, p. 26). The above perspective also resonates with cognitive conflict theory of learning (Piaget, 1963).

Exposure to varied and rich experiences leads to behaviour modification through the resolution of "conflicts among dialectically opposed modes of adaptation" to the world (Kolb, 2011). Therefore, the prerequisite for learning to happen is only possible when the learner has an active experiential engagement and immersion where experiences are at the "center of the learning process" (Kolb, 2005). Kolb defines experiential learning as a "continuous process grounded in experience" (Kolb, 1984) and takes place beyond the traditional classroom to enhance the personal and intellectual growth of the learners. Therefore, experiential learning as a pedagogy has the potential to provide opportunities that are missing in a textbook-centric and teacher-driven educational environment which focuses on outcomes and not the process. Teachers command an elevated role of a facilitator in the interplay and functioning of the three domains for holistic development of learners. Experiential learning is a strong pedagogical ground-plan where teachers draw from the three domains to design, plan, and implement a successful pedagogy addressing the three domains through the learning process to generate new experiences.

## The Concept of Experiential Learning in Indian Context

Experiential learning (Prayogic Gyan) finds its origin in the Gurukul system. The Gurukul system believes learning to be an experience. The Gurukul pedagogy fostered holistic development through curiosity, participation, and hands-on learning with an underpinning philosophy of learners' uniqueness to personalize learning (Joshi, 2021, p. 7), and through storytelling, learners (shishyas) constructed knowledge of ethics, mathematics, astronomy, philosophy, medicine, political science, physical fitness, and warfare.

The experiential engagement of Arjuna with Dronacharya, Rama with Vishwamitra, and Chandragupta Maurya with Chanakya are inspiring examples in the history of ancient Indian pedagogy. Moreover, the Indian education system in the ancient past had been rooted in experiential learning. The Gurukul system believes "learning to be an experience." With an underpinning philosophy to personalize learning through hands-on practice and storytelling, the learners (shishyas) constructed knowledge of ethics and logic, mathematics, astronomy, philosophy, medicine, political science, physical fitness, and statecraft (Rajguru, 2024, pp. 1–9). The Gurukul pedagogy embedded the tenets of Panch Kosha to foster holistic development through curiosity, participation, and hands-on learning.

There has been a dominant shift from ancient India's traditional learning model to rote memorization that "fails to do justice to a child's potential" (Nagarathinam & Vani, 2018).

The emergence of the strong intent for preserving the roots and reviving the Pancha Kosha theory within educational settings is evident in contemporary national educational policies. The integration aims to foster a transformative approach that aligns with the holistic development of learners where the value of nurturing not just the intellectual, but also the emotional, physical, energetic, and spiritual layers of learners (Chapagain, 2025, p. 31). Furthermore, the National Curriculum Framework (NCF, 2023, p. 109) proposed suggestions on the fact that children learn in a variety of ways—through a variety of experiences which can be done by experimenting, reading, questioning, listening, ideating, discussing, and reflecting. They express themselves in speech, movement, or writing—both individually and with others including family members and peers. The National Education Policy (NEP, 2020, p. 5) emphasizes the comprehensive development of learners across physical, emotional, social, mental, intellectual, and ethical dimensions.

The Happiness Curriculum states that education should build resilience to face real-life challenges, empower learners to solve problems through critical thought and reasoning, and enable them to comprehend happiness within self, relationships, and society (Rani & Kumar, SCERT, 2023). Moreover, in the words of Mahatma Gandhi (1937), to achieve holistic learning (3H) and development, learners need an experience that facilitates "an all-round drawing out of the best in child and man—body, mind, and spirit." This heightens the need for education to provide holistic development of the three interdependent domains of learning—cognitive, affective, and psychomotor skills. The cognitive domain encompasses all mental and intellectual processes for gaining knowledge. The affective domain is characterized by learners' emotions and attitude as reflected by their values, beliefs, and personal interests. The psychomotor domain constitutes learning behavior achieved through kinesthetic or neuromuscular motor activities (National Library of Medicine, 1996, p. 1).

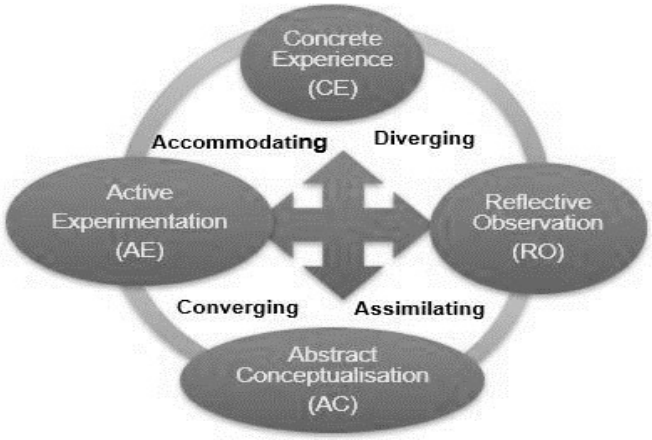
## Kolb's Experiential Learning Theory: The Cycle of Learning

Kolb's Experiential Learning Theory (1984) was established through his experiential learning model. ELT is based on Kolb's belief that ideas are transformed through experience and that ideas are not fixed and immutable elements of thought. They are formed and reformed through learners' preferred learning styles which are influenced by multiple factors such as social environment, educational

experiences, and a wide spectrum of learners' cognitive processes. The learning cycle model is a recurring four-mode/stage cycle with four separate learning styles. Through the model, learners engage in a concrete experience and reflective observation which assimilates into theory and conclusions (abstract conceptualization), and finally the new hypotheses are tested in different situations (active experimentation).

The result after active experimentation could be a concrete experience for the next cycle and the cycle recurs. Kolb considers any one learning mode to be insufficient in processing information, and all four modes of the cycle must be negotiated by the learner. Effective learning occurs when a learner completes each stage of the cycle. However, a learner could enter at any point of the cycle.

**Kolb's Cycle of Learning**




Kolb's cycle of learning reflects his philosophy of presenting and resolving "conflicts" to establish learning. Learner's preferred style is a product of "two conflicting choices" given at the two ends of each axis. Kolb named the axes as the processing continuum and perception continuum. He believes that learners perceive information from concrete experience and abstract conceptualization; and process information from reflective observation and active experimentation. The following table describes the four modes or stages of learning:

| | |
|---|---|
| Concrete Experience (CE) | Learners learn from their surroundings, personal interactions and real-life experiences. They actively participate in the experience through the five senses - sight, hear, touch, smell and taste. |
| Reflective Observation (RO) | Learners employ cognition to reflect about the situation or experience before forming an opinion. They engage in the process through observing and perceiving. They evaluate with objectivity and patience. |
| Abstract Conceptualization (AC) | Learners create theories and principles based on concrete information and logical reasoning. They explain their experiences without subjectivity and biases. They use inductive-deductive reasoning to draw conclusions and generalize theories and principles. |
| Active Experimentation (AE) | Learners use the conclusions drawn in the AC stages hypotheses to test validity and reliability. Learners constantly change or renew their original thinking and methods. Learners conceptualize new experiences and integrate them with past experiences. |

## Kolb's Learning Styles

Kolb proposed four learning styles developed from his concept of perception and processing continuum.

**1. Converging style of learning:** Learners approach knowledge through AC stage and process it through AE. They think deductively and are more interested in technical tasks and problem solving. They are also good at decision making and putting ideas into practice. They are less concerned about people and interpersonal aspects.

**2. Diverging style of learning:** Learners prefer to learn through CE and process through RO. They view situations from multiple points of view. They are characterized by the ability to imagine, brainstorm to generate new ideas. Their broad cultural orientations make them interested in people, communication, feelings and values. They are active listeners and have an open mind to receive feedback.

**3. Accommodating style of learning:** Learners enter the learning cycle at CE stage. They rely on other people for information and analysis. They then process the information and test their ideas through active experimentation. They can be best described as 'hands-on' individuals who have a practical and experimental

approach. These individuals are more intuitive than logical. Thus, they are willing to take risks and develop extreme resilience.

**4. Assimilating style of learning:** Learners prefer to enter at AC stage and process it through RO. They require theoretical explanations and gain a wide range of information which they arrange in logical order. They are more focused on ideas and abstract concepts than on people. Therefore, their strengths lie in inductive reasoning and ability to create analytical models.

## Literature Review

Multiple pedagogical philosophies have been established and implemented to achieve learning outcomes through holistic development of learners. However, Experiential Learning (EL) has been linked with progressive education (Ranken E. et al, 2024). Recent empirical research suggested that EL may be a valuable pedagogical approach to support the acquisition of knowledge and children's academic achievement (Ranken E. et al, 2024). In addition, EL methods could be an appropriate method to be applied to bridge conceptual knowledge with skills adapted to real conditions (Efstrati D., 2019). Learning comes from experience and one of the four basic elements of learning is experience (Pamungkas S.F. etal, 2019). Moreover, Kishor (2020) conducted a study on a title "Promoting learners' autonomy" through experiential learning among secondary school students. The objective was to study the effectiveness of developed instructional modules with traditional methods of teaching. The results were quantified using the achievements scores of experimental groups that comprised of students in grade eighth. The study concluded that experiential learning in *Sciences* enhances learner autonomy, and it is best achieved when teacher acts as a facilitator of learning. The results have a potential to provide a framework for educators to implement best practices that will raise the achievement level of students in science.

In a study to highlight the difference in students' cognitive and affective development in Indian classrooms through experiential learning, Sachdeva (2017) has emphasized the role of experiential learning where dialogue, students' active involvement, and action are encouraged. Furthermore, Mehra and Kaur (2010) conducted a study on the effectiveness of an experiential learning strategy on the enhancement of environmental awareness among primary school students. The experimental group was exposed to an experiential learning strategy, and students of the control group were taught the same topic by a traditional learning method. The findings of the study revealed that the students taught EVS by an experiential learning strategy exhibited better environmental awareness than those taught by

traditional learning methods. The prior research helped researchers adhere to the principles of experiential learning and decide to promote learner autonomy using experiential learning among secondary school students.

Jarrell (2019) conducted a qualitative study employing Kolb's principles of ELT to assess its efficacy for exchange students in Australia. Jarrell strictly adhered to Kolb's four learning styles and modes in successfully developing students' leadership abilities, socio-cultural assimilation, and emotional awareness along with gaining technical knowledge.

Additionally, Kumar and Lakra (2023) conducted a study analyzing teachers' perceptions toward the use of experiential learning. They concluded that more female teachers than male teachers felt that experiential learning is an effective technique to facilitate permanent learning among students. It was also found that teachers at the primary level held a positive perception toward experiential learning. Lastly, a majority of language teachers perceived that experiential learning would enable the child to learn better based on a constructivist approach.

## Experiential Learning: Vantage Point

Experience is fundamental for understanding mental processes. In addition to the eventual learning outcome, there are a series of behavioural changes that are triggered by experiences during the process of learning. These changes are cognitive, affective, and psychomotor in nature. The experiential learning process provides the ingredients for learners' holistic development through nurturing and harnessing the three domains of learning that include creative thinking, resilience, collaboration to name a few. Although the advantages within experiential learning are far-reaching, a few dominant ones have been listed below:

• **Promotes active learning and creativity**: Experiential learning is one of the best methodologies to foster creative problem-solving. Learners' intellectual, physical and socio-emotional engagement in their experiences allows them to internalize concepts for better understanding, rather than just knowing the facts which are to be regurgitated. Learners have opportunities to be curious and actively engage in investigating, questioning, experimenting, and solving problems creatively to construct meaning out of their learning. Learners steer their learning - holding themselves responsible and accountable for the outcome. Teachers take the role of facilitator and collaborator.

• **Authenticate learning beyond classroom**: Experiential learning transcends traditional classroom-based instruction. Learners apply theoretical concepts to

practical situations. They construct knowledge through opportunities to be inventive on hands-on activities in a multitude of settings. The emergent skills and knowledge broaden their perspective and equips learners to apply them to real world scenarios. Given a real-world simulation, children learn that there are multiple representations to address and resolve challenges. They are encouraged and equipped to seek unique solutions and develop capacity for contributing within their communities. Thereby, providing purpose and authenticity to learning.

• **Fosters self-efficacy and a growth mindset:** Learners have opportunities to deal with unpredictable situations to generate new learning. They learn from multiple variables such as their own mistakes, natural consequences and logistic limitations. At the same time, they acknowledge the enabling factors such as human and material resources to execute solutions or solve problems successfully. This fosters risk-taking and a growth mindset where every failure is seen as learning. Success at the end of the learning process builds mental strength and self-efficacy. It builds confidence to undertake ventures for newer experiences in the future.

• **Develops collaboration and team spirit**: Experiential learning creates opportunities for shared experience where learners work towards a common goal. They address challenges that require collective problem-solving and decision-making. In the process, learners learn to appreciate each other's strengths and contributions. The integration of multiple perspectives and mutual knowledge encourages negotiation and comprehension through cognitive conflict, which helps team members form meaningful relationships. Learners experience a strong sense of unity and team spirit with each successful task.

• **Fosters self-reflection:** Reflecting on the challenges faced, the enabling factors and effectiveness of the solutions lead to analysis, critical thinking, and synthesis of new learning and experiences. Furthermore, the learner's repeated experience makes learning powerful.

• **Improve attitudes towards learning:** Studies from teacher observations have shown that experiential learning pedagogy increases learners' interest in the subject and improves their attitudes and quality of learning. It has been seen to narrow down the gap between theoretical knowledge learnt in the classroom and the skills required for hands-on tasks and practical situations.

## Why Experiential Learning as a Pedagogy at Middle School Stage?

The characteristics of adolescent learners at the middle school stage form a strong premise for implementing experiential learning as pedagogy in the classrooms. Piaget (1936) explains that learners at middle school are in the formal operational stage in which they begin to develop logical thinking. Piaget found an increased

learners' interest in dealing with abstract concepts such as freedom, love, and justice, as compared to the things that are perceived by learners (Mangal, 2023, p. 89). Adolescents begin to construct relationships between concrete operations and abstract forms. Learners at this stage can perform hypothetical-deductive reasoning, which is to develop hypotheses based on what might logically occur (Kolb, 1984, p. 36). Adolescents also begin to appreciate that some hypothetical problems can be solved mentally by applying the same rules as would be applied to concrete problems. They employ problem-solving strategies where they draw from a broad knowledge base to develop a theory and generalize it after iterative observations, experimentation, and reflections. Furthermore, learners at middle school are more aware of their thoughts, emotions, apprehensions, and aspirations. The changes in the psychological, cognitive, and physiological aspects of adolescent learners have been closely considered by policymakers. A strong focus on continued development in the three domains—cognitive, affective, and psychomotor—is reflected in a significant policy shift towards adopting experiential learning as pedagogy at the middle school level.

The NEP (2020, p. 6) restructured the 10+2 system in school education into a new pedagogical and curricular structure of 5+3+3+4 covering ages 3–18 years. It is a pivotal modification that draws from the deeper understanding of socio-emotional and intellectual development of children at different stages of their lives. Therefore, the policy emphasizes experiential learning to reform the current Indian education pattern and align it more with the globally accepted educational standard, which would help students apply their knowledge in real-world situations (Rani & Tyagi, 2023). NCF (2023, pp. 40–41) explicitly states that students, by middle school, gradually gain logical thinking, complex emotions, and objective expression to make fair moral judgments. Therefore, learning should rely less on textbooks and more on experiential learning with physical exploration as the main source of content and a pedagogy that is based on activity and discovery. Furthermore, the aspects of positive psychology have heavily contributed to the philosophy of experiential learning (Kong, 2021). Learner motivation and a more observable indicator such as engagement demand a learner-centred pedagogy and a participative learning atmosphere that centres on developing abilities and experiences. Learners' autonomy through experiential learning, paired with relevant academic activities, improves learners' level of motivation and provides autonomy to choose multiple methods and processes to solve problems (Kolb & Kolb, 2011, p. 124).

## Role of Teacher in Experiential Learning (Kolb's Model)

Kolb's experiential learning model provides a structure that is widely applicable in classroom settings to differentiate and democratize the learning process. Learning

styles could become instructional strategies (McKeachie, W. J., 1995). Therefore, teachers play a key role in selecting suitable experiences to actively engage and support the learners. Vygotsky's (1920, p. 86) "zone of proximity" created by the teacher is an essential element that bridges the gaps in "unsupported and supported" learning environments. Bradford (2019, p. 97) recommends teachers to reflect and self-question to incorporate activities that meet the pedagogical needs of every learner. Chapman, McPhee, and Proudman (1995, p. 243) believe that a prescribed set of learning experiences may not be "experiential" in nature. They suggest teachers understand the experiential methodology as a series of working principles which must be present in varying degrees at some time during experiential learning. Kolb's learning model provides the "working principles" to teachers by giving them a framework that identifies different learning modes and styles. The learning cycle model is a valuable practical resource for teachers to design learning experiences that navigate through the four learning modes and are tailored to the learning styles.

Furthermore, teachers should understand Piaget's developmental benchmarks and integrate them with Kolb's philosophy behind the learning cycle. Awareness of appropriate instructional methods to suit each learning style is a prerequisite for an effective implementation of Kolb's model. For example, teachers should provide an interactive environment to the converging learners so they can explore and apply detailed information of how a system operates. A teacher should facilitate a converging learning style with a discovery-based approach where these learners discover the relevance or the "how" of a situation through abstract conceptualization and active experimentation. On the other hand, the diverging learning styles are motivated by the "why" of a situation and require explicit instruction as a concrete experience to reflect on their understanding before moving to the other stages of the learning cycle (Kolb, 1984).

## Suggestions for Teachers

Following are points that teachers should bear in mind when planning and executing the experiential learning process (Chapman, McPhee, & Proudman, 1995):

**Content and process**: There must be a balance of the experiential activities, the relevant content, and conceptual knowledge. Having knowledge of Kolb's learning style helps teachers to understand the importance of questioning strategies, explicit instruction, and lecture-method in the experiential learning process.

**Monitor without judgment**: The teacher must create a safe space for students to work through their own process of self-discovery. They shouldn't judge learners on their thinking, effort, pace, success, and failure.

**Purposeful learning**: In the experiential learning process, learners choose their learning and self-teach themselves. Therefore, learning must be meaningful for the learner. Teachers should be aware of learning modes and styles to plan learning activities that are personally relevant to the learner.

**Encouraging the big picture perspective**: Experiential activities must allow the students to make connections between the learning they are doing and the world. Teachers should design activities that build the learner's ability to see relationships in complex systems and find a way to work within them.

**Creating emotional investment**: Students must be fully immersed in the experience, not merely doing what they feel is required of them. Teachers should be able to engage the learner in the experiential process to an extent that it strikes a critical and personal chord within the learner.

**Assessment and constructive feedback**: Learning needs to be observable, measured, quantified, and defined in terms of the learning outcomes, capacities, and curricular goals. Teachers should provide timely feedback as it provides a vehicle for integrating all components of instructional practices on which learners reassess their attempts and modify their behaviour for new experiences.

**Reflection and re-discovery**: Learners should be able to reflect on their own learning to gain insight into themselves and their interactions with the world. Teachers should provide space that is safe for self-exploration where learners analyze and rediscover themselves by being resilient to alter their own value system.

**Meaningful relationships**: An important aspect for teachers is getting learners to see their learning in the context of the whole world. Teachers should employ instructional strategies that help learners see the relationships between learner with self, learner and teacher, learner to peers, and the learning environment. This could result in enhanced learning outcomes from collaborative tasks and reflective practices.

**Collaboration and communication**: Teachers should foster collaborative and team spirit through experiential learning opportunities such as hands-on activities, role-plays and simulations, flipped classroom, field trips, excursions to museums and cultural sites, community service, internships, and projects. Shared experiences from a variety of sources such as environment and society develop lifelong skills to communicate and collaborate beyond the classroom.

**Stepping out of comfort zones**: Learning is enhanced when students are given the opportunity to operate outside of their own perceived comfort zones. Learners should do this not only in their physical environment, but also in the social environment such as being accountable for their actions and taking responsibility for the consequences.

## Conclusion

In the present scenario, learners' educational needs gravitate towards purposeful learning where they are active participants in gaining skills that are successfully applied in the real world. The ancient Indian knowledge system pays importance to holistic development of the learners. Unfortunately, the intent has not translated up to the mark to the Indian school education that is riddled by rote memorization and regurgitation of facts. The above literature highlights the importance of experiential learning to create an educational environment where middle school learners are motivated to engage and participate in their learning through experience. The generative and transformative vigor of experiences in the learning process is a strong premise to consider experiential learning as a pedagogical practice. The article explores the need, practicality, and effectiveness of Kolb's learning model in the middle school to provide meaningful learning experiences. The model fosters a learner-centric approach where learners are not passive recipients but active participants. Adolescent learners in middle school begin to gain their unique cognitive abilities, communicative and creative problem-solving skills. Kolb's learning stages and learning styles provide a template for the teachers to know, identify, and cater to all learners in developing critical thought, creativity, autonomy, and emergent skills.

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# Incorporation of Green Skills with Soft Skill Training: Creating Awareness about Green Skills in Underprivileged Communities through Soft Skill Training Centres

• **Shuaib Ul Islam**[1] • **Anwara Hashmi**[2]

## Abstract

Environmental challenges are escalating at an unprecedented rate, making the awareness and adoption of green skills essential for a sustainable future. Green skills encompass the knowledge, abilities, and practices that enable individuals and communities to engage in sustainable and environmentally responsible behaviours. These skills are crucial for mitigating climate change, conserving resources, reducing carbon footprints, and promoting renewable energy. However, in underprivileged communities, awareness and access to such skill sets remain significantly limited. This study explores the integration of green skills with soft skill training centres, particularly in underprivileged communities, to enhance environmental consciousness while improving employability. By embedding green competencies - such as waste management, renewable energy utilization, sustainable agriculture, and eco-conscious workplace ethics - into soft skill programmes, individuals can develop a dual skill set that supports both professional growth and environmental stewardship. The fusion of interpersonal, cognitive, and problem-solving skills with sustainability education has the potential to revolutionize workforce training by preparing individuals for green economy jobs while simultaneously fostering a culture of ecological responsibility. This paper highlights the role of soft skill training centres in promoting green skills awareness, empowering marginalized communities to adopt sustainable practices, and equipping individuals with job-ready competencies aligned with the emerging green economy. Furthermore, it examines global best practices, challenges in implementation, and potential policy recommendations to facilitate the widespread adoption of this approach. Through public–private partnerships, digital learning tools, and policy-driven incentives, the integration of green skills into workforce training can create a ripple effect, transforming industries and livelihoods alike.

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**Keywords:** *Green skills, soft skills, sustainability, environmental awareness, workforce development, underprivileged communities.*

## Introduction

Soft skill training is a well-established component of non-formal education, aimed at enhancing personal and professional competencies, especially among underprivileged youth. Soft skill training centres typically focus on communication, teamwork, financial management, and leadership, equipping learners with the necessary tools to navigate the workforce. However, as environmental concerns become increasingly pressing, there is an urgent need to integrate green skills into these programmes. Green skills refer to the knowledge and abilities required to address environmental challenges and participate in sustainable industries (International Labour Organization [ILO], 2021). These skills are crucial for fostering eco-friendly behaviours, reducing carbon footprints, and promoting green technologies. The United Nations Sustainable Development Goals (SDGs) emphasize the need for environmental education and workforce upskilling to achieve sustainability (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020). By incorporating green skills into soft skill training centres, we can simultaneously increase employability and environmental responsibility in underprivileged communities. The growing demand for environmentally sustainable practices across industries has made green skills an essential part of modern workforce training. Various sectors, including renewable energy, construction, waste management, and agribusiness, are seeking individuals proficient in sustainability practices (International Renewable Energy Agency [IRENA], 2022; World Bank, 2023). Despite this, many underprivileged communities remain unaware of the economic and environmental benefits of green skills. Bridging this gap requires a structured approach to integrating green skills into existing educational frameworks.

Additionally, traditional educational structures often fail to emphasize sustainability education, leaving a significant knowledge deficit in marginalized populations. The incorporation of green skills alongside soft skill training offers a dual advantage—enhancing employment opportunities while simultaneously promoting ecological responsibility. With the rise of climate-conscious policies and global sustainability initiatives, it is imperative to equip youth with the skills necessary to thrive in a green economy (United Nations Environment Programme [UNEP], 2021; World Economic Forum [WEF], 2023). This paper explores the significance of green skills, the role of soft skill training centres, and the impact of their integration on underprivileged communities. By leveraging existing training frameworks and expanding their scope

to include environmental awareness, we can empower individuals to take charge of their future while contributing positively to the planet.

## The Importance of Green Skills for Environmental Sustainability

Green skills are crucial in promoting sustainable development by fostering behaviours that mitigate environmental impact. These skills cover areas such as:

- Renewable energy technologies (solar, wind, and bioenergy utilization)
- Sustainable waste management (recycling, composting and circular economy principles)
- Conservation practices (water conservation, afforestation and sustainable agriculture)
- Energy efficiency (reducing energy waste in homes and workplaces)
- Sustainable construction and urban planning (eco-friendly materials and green architecture)

Beyond environmental benefits, Green skills contribute significantly to economic development. The International Labour Organization (ILO) reports that a shift towards green economies will generate millions of new jobs globally, particularly in energy efficiency, water management, and sustainable agriculture. Countries that invest in eco-skilling will benefit from increased economic resilience and reduced dependency on non-renewable resources. Green skills also play a role in corporate social responsibility (CSR) initiatives. Many companies worldwide are embedding sustainability within their operational frameworks, necessitating employees who are well versed in green practices. The combination of environmental awareness and workforce adaptability ensures that industries can meet both regulatory and social expectations.

Therefore, mainstreaming green skills in workforce training is not only an environmental necessity but also an economic strategy for long-term sustainability.

## The Role of Soft Skill Training Centres in Underprivileged Communities

Soft skill training centres play a **transformative role** in marginalized communities by equipping youth with **essential life skills** that improve their employability. Key contributions include:

- Enhancing communication & leadership skills
- Providing career guidance & entrepreneurship training

- Promoting financial literacy & women's empowerment
- Encouraging social inclusion & community engagement

However, the integration of green skills remains largely underexplored in these centres. Introducing green skills alongside traditional soft skill training can amplify career opportunities and create environmentally conscious professionals. Many underprivileged communities face barriers to employment due to lack of industry-relevant skills and limited awareness of green job sectors. Soft skill training centres can act as a bridge, linking individuals to sustainable employment opportunities in industries such as renewable energy, eco-friendly construction and sustainable waste management. Moreover, these centres can serve as knowledge hubs, where learners receive practical training in eco-conscious practices. By integrating field-based experiential learning, such as community recycling projects, water conservation programmes and green entrepreneurship initiatives, participants can apply their knowledge directly to their surroundings.

**Training Green Skills Alongside Soft Skills**

The inclusion of green skills within soft skill training programmes provides multifaceted benefits that enhance employability, foster environmental awareness and drive economic growth. Soft skills such as communication, teamwork, leadership, adaptability, and problem-solving play a crucial role in ensuring that green skill training is effective, scalable, and impactful.

**1. Job Readiness for the Green Economy**

- Training youth in solar energy installation, waste management, eco-friendly construction and sustainable agriculture equips them with skills that align with growing job opportunities in the green sector.
- Courses focusing on climate change adaptation, environmental conservation and energy efficiency ensure that learners are well versed in industry demands.
- Employability workshops can introduce resume building, interview skills and workplace etiquette, ensuring a smooth transition into green careers.

**2. Community Impact and Behavioural Change**

- Soft skill training centres can serve as hubs for eco-awareness campaigns, hands-on sustainability projects and interactive workshops.
- By integrating real-world problem-solving activities, trainees can apply green skills directly within their communities, schools and workplaces.
- Encouraging peer learning and mentorship fosters a culture of shared responsibility and knowledge dissemination.

**3. Bridging the Knowledge Gap through Industry Collaboration**

- Collaborating with renewable energy firms, sustainability organizations and environmental agencies ensures that training is aligned with industry needs.
- Hands-on internships and apprenticeships in eco-friendly sectors provide learners with real-world experience and networking opportunities.
- Hosting guest lectures by sustainability experts exposes trainees to global trends and innovations in environmental conservation.

**4. Integration of Digital Learning and Emerging Technologies**

- Leveraging virtual reality (VR) simulations, AI-driven sustainability models and e-learning platforms can make green skills training more interactive and accessible.
- Digital platforms can help trainees connect with sustainability mentors, access global resources and earn online certifications in green technologies.

**5. Entrepreneurial Mindset Development**

- Encouraging learners to explore green start-ups and self-employment opportunities in the eco-conscious economy fosters financial independence.
- Business development training can include eco-friendly product design, sustainable business planning and green supply chain management.
- Providing access to micro-financing, incubation centres and social enterprise networks can help young entrepreneurs scale their initiatives.

**6. Soft Skills as a Catalyst for Green Innovation**

- Leadership training empowers individuals to spearhead environmental movements within their communities and workplaces.
- Critical thinking and creativity enable trainees to design innovative solutions for pressing sustainability challenges.
- Negotiation and advocacy skills help individuals influence policy changes and corporate sustainability strategies.

Soft skill training centres can integrate structured green curricula, offering modules on climate resilience, energy-efficient technology and resource optimization. This holistic approach ensures that individuals receive a well-rounded education that meets both industry demands and environmental needs. By fostering a culture of sustainability, soft skills combined with green competencies create a future-ready workforce capable of tackling global environmental challenges.

## The Impact of Green Skills on Socio-economic Development

Integrating green skills into workforce development programmes has a profound impact on socio-economic growth. These skills contribute to:

- Poverty Alleviation: Green industries provide sustainable employment opportunities, especially for youth from economically disadvantaged backgrounds.

- Economic Growth: The green economy fosters innovation, entrepreneurship and job creation across multiple sectors, such as renewable energy and sustainable agriculture.
- Social Equity: By equipping marginalized communities with eco-conscious skills, we ensure inclusive development and equal opportunities in emerging job markets.
- Long-Term Employability: As global industries shift towards sustainability mandates, individuals trained in green skills will have higher job security and career progression potential.

Thus, green skill integration is not only an environmental imperative but also a tool for economic and social empowerment.

## Case Studies & Practical Implementation

Several global initiatives display the impact of integrating green skills into soft skill training:

- India's Green Skill Development Programme (GSDP): Launched by the Ministry of Environment, Forest & Climate Change, this programme trains youth in biodiversity conservation, green entrepreneurship and sustainable agriculture (GSDP, 2022).
- Germany's Dual Vocational Training Model: Combines soft skills with sustainable manufacturing and energy efficiency modules, preparing workers for climate-conscious industries (European Commission, 2021).
- UNESCO's Education for Sustainable Development (ESD): A global initiative integrating climate literacy into vocational training, bridging the gap between skills training and sustainability goals (UNESCO, 2020).

## Challenges & Recommendations

Despite the clear benefits, several challenges hinder the integration of green skills into soft skill training:

- Limited Awareness & Funding: Many training centres lack the resources and curriculum frameworks to incorporate sustainability education.
- Need for Industry Collaboration: Stronger partnerships with green sector employers are necessary to enhance job placements.
- Resistance to Change: Trainers and learners may require upskilling and mindset shifts to embrace green skills.

## Proposed Solutions

- Develop Green Skills Modules: Incorporate hands-on training in sustainability practices.
- Leverage Digital Learning: Use e-learning platforms and virtual labs for environmental education.
- Incentivize Participation: Offer certifications and job referrals in the green economy.
- Engage Stakeholders: Strengthen public-private partnerships to boost training centre capacities.

## Future Trends in Green Skills Development

As the global focus on climate action and sustainability grows, several emerging trends will shape the future of green skills training:

1. Integration of Artificial Intelligence (AI) in Sustainability: AI-powered solutions are being utilized for climate modelling, waste management and energy efficiency, requiring a workforce trained in AI-driven green skills.
2. Expansion of Circular Economy Training: Companies are shifting towards a zero-waste model, increasing the demand for professionals skilled in recycling, upcycling and sustainable production.
3. Government Policy Initiatives: Countries worldwide are launching green jobs initiatives, offering tax incentives and grants for businesses adopting eco-friendly practices, thereby expanding green employment opportunities.
4. Green Entrepreneurship Boom: As awareness grows, more individuals are starting green enterprises, leading to a demand for training in eco-friendly business models and sustainable finance.

These trends indicate a dynamic shift in workforce development, making green skills an essential component of future employability.

## Recommendations

- Develop Green Skills Modules: Incorporate hands-on training in sustainability practices.
- Leverage Digital Learning: Use e-learning platforms and virtual labs for environmental education.
- Incentivize Participation: Offer certifications and job referrals in the green economy.

- Engage Stakeholders: Strengthen public-private partnerships to boost training centre capacities.

## Conclusion

Integrating green skills with soft skill training centres presents a sustainable, future-oriented approach to workforce development. By embedding eco-conscious competencies into existing training frameworks, we can empower underprivileged youth, enhance employment opportunities, and build environmentally responsible communities. To ensure the success of green-skill Integration, policymakers, educators and industry leaders must collaborate in creating structured frameworks for training programmes. Governments can introduce incentives for green employment, corporations can launch CSR-driven skill development programmes and NGOs can support grassroots-level eco-training initiatives. By leveraging existing training infrastructures, fostering public-private partnerships and promoting community-driven sustainability projects, we can create a generation of skilled professionals equipped to tackle environmental challenges while improving their socio-economic status. Ultimately, the fusion of green skills with soft skills training is not just an educational necessity - it is a catalyst for global change.

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# Adult Education and Lifelong Learning in India: Prospects and Challenges in the light of NEP 2020

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## Abstract

Adult education is a continuous learning process, where adults engage in structured and methodical activities to help them better understand and learn. Based on data from the most recent census, India's total literacy rate climbed from 74% in 2001 to 79% in 2011. Global data on countries shows a very strong relationship between GDP/per capita income and the literacy rate. By creating an adult education curriculum framework, NEP 2020 aims to greatly increase adult and continuing education programmes and to target a 100% youth and adult literacy rate by 2030. Foundational literacy and numeracy, key life skills, vocational skills, basic education, and continuing education are some of the key programme categories that must be included in the framework which must be adaptable enough to accommodate local demands. Thus, a person can advance both personally and professionally via the use of the vast array of personal, civic, economic, and lifelong learning opportunities that come along with basic education and reading. Government efforts alone are unlikely to produce the large-scale results that are needed; instead, strong national commitment, widespread community volunteerism, and mobilization are needed, together with strong government support. To genuinely accelerate the key goal of attaining 100% literacy in the country - volunteerism and community involvement must be resorted to, as soon as possible.

**Keywords:** *Adult education, lifelong learning, National Literacy Mission (NLM), foundational literacy and numeracy, basic education.*

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## Introduction

The history of learning is as old as humanity itself, and the idea of lifelong learning (LLL) has long been a valued objective in India (Dutta, 1986; Bhatia, 2009; Shah, 2009, 2010). Within the framework of nation-building and social transformation, LLL developed as an essential and beneficial component of adult and continuing education programmes. However, in the post-millennium era, the (re)advent of LLL has taken on a distinct shape. LLL is currently seen as a philosophy for personal growth, skill acquisition, and lifetime employability. It has emerged as an overarching principle that directs the paths of education policies toward economic growth and is no longer confined to any particular field or fields (Field, 2006; Shah, 2009; Barros, 2012). Since the earliest records (c. 2000 BC to AD 1200) emphasized the value of learning above any other consideration, LLL has been an essential component of Indian culture (Shah, 2009, 2010; Mandal, 2013b).

The right to education and lifelong learning is inherently linked to adult education and learning, which is defined as "all forms of education and learning that aim to ensure that all adults participate in their societies and the world of work." (Adult Education and Learning, n.d.) It refers to the whole range of formal, informal, and non-formal learning processes, which people who are considered adults by their community learn to enhance their capacity for working and living in a way that serves both their interests and the interests of their communities, organizations, and societies (UNESCO, 2015, Recommendation on Education and Learning for Adults: Para1). While learning exclusively for adults, or AE as we refer to it now, emerged much later, the spiritual framework of "learn as long as you live" to achieve "moksha" or emancipation (Shah, 1999) was fundamental. Life-oriented education was the main focus of AE from 1947 to 1966, when social education began to take precedence in national policies (Shah, 1999).

Adult education is the process through which adults who are currently out of school, are no longer enrolled in school, or do not attend regularly or full-time, engage in structured and sequential learning activities. Adult education covers several topics such as agriculture, family welfare, environmental preservation, diet and nutrition, health, and child development. The institutionalization of lifelong learning and adult education in India has progressed extremely slowly. India's policy on lifelong learning is still in its infancy and is now undergoing significant reform. India underwent economic upheaval in the 1990s as market-centric and neoliberal ideas were more widely accepted. This had a significant effect on how AE developed. National Five Year Plans noted that it was critical to continuously upgrade skills between the early

1990s and 2000 in order to generate the labour required for a market and society (Government of India, 1992). In unison with governmental and non-governmental entities, university departments of Adult Continuing Education and Extensions (ACEE) initiated skill development initiatives; however, they neglected to adequately focus on enhancing the professional competencies of educators and trainers (Shah, 2009). After 2000, there was a substantial drop in the funding of AE programmes, which had been falling gradually since the late 1980s. Shah (2008) examined funding patterns and found that although spending on education across all sectors climbed from 7.92 percent to 13.78 percent between 1951 and 1998, spending on AE fell from 5.30 percent to 0.31 percent, and then decreased even lower to 0.26 percent in the 2016–17 fiscal year. According to Shah (2008), the proportion of education expenditure to the overall plan for AE reached its highest point during the Sixth (1980–85), Seventh (1985–90), and Eighth (1992–97) plan periods, at 5.07, 8.60, and 7.33%, respectively. Following this, there was a significant decrease. Due to the lack of clarity in its disciplinary status and nomenclature, it is gradually implementing policy programmes and conceptual evaluations very slowly. According to Mandal (2015), lifelong learning has not yet become a definite guiding principle for educational planning, policy, and administration. Education is the process by which a person develops all the abilities necessary to take responsibility for their surroundings and perform their duties (Albina, 2016).

## Types of Education

i. **Formal Education**: Both in higher education and in schools, formal education is purposefully and carefully designed through behaviour modification with a specific goal in mind. This educational system's primary drawback is that it is valid for a specified amount of time.

ii. **Informal Education**: Informal education is a phenomenon that refers to the combination of unintentional, unplanned, and methodical learning that affects people's attitudes and understanding, whether consciously or unconsciously. The most significant sources that play a major role in providing people with informal education are friends, family, co-workers, the community, the market, public spaces, technology, and media.

iii. **Non-formal Education**: Non-formal education refers to the structured delivery of learning experiences outside of the conventional school system, which continues throughout an individual's life. It is adaptable, focused on solving problems, environment-focused, life-based, and learner-oriented. Since continuing education, extracurricular activities, and moral counselling are all considered types of non-formal education, adult education falls under this category.

## Pre-Independence Adult Education in India

India's literacy rate was at 6% in the years 1836–1837. The provision of adult education was not a top priority for the British government. Following the Industrial Revolution, night schools became popular in England, and this affected India. The Indian Education Commission (1882–1883) acknowledged that adult education was necessary for the advancement of the population's economic status. The steadily growing cooperative movement from 1918 to 1936 offered a foundation that was crucial for launching adult literacy. The Bihar education minister, Dr. Syed Mahmud, chaired the Central Advisory Board of Education (CABE) at its fourth meeting. The Committee stressed the importance of literacy for adults, the necessity of literacy training, the need for teachers to encourage adults to utilize divisional media in the classroom, and initiatives to support adult literacy retention and lifelong learning. By 1836, it was discovered that the adult population in the nation was facing several difficulties and obstacles when attempting to access various employment opportunities.

A primary factor was illiteracy. According to the Indian Education Commission, 3919 people in Mumbai attended 134 night schools. 4934 students attended 223 night schools in the southern region of the presidency. In Bengal, there were over a thousand night schools, while in Madras, there were 291. The committee firmly advocated for the programme's expansion throughout all provinces. There were various obstacles to the night school programme, and the structure was inadequate.

## Post-Independence Adult Education in India

In India, adult education has been available since the time of colonization. It is referred to as a non-formal education system, and it serves to balance out the unique features of the formal education system. It serves adult illiterates who have never attended formal schooling, such as farmers and labourers. One of the main objectives of adult and continuing education in India has always been to achieve universal adult literacy and to produce a literate society of citizens. After independence, adult education in India has taken on various meanings and interpretations, from citizen training to redefining the practice as an alternative to formal education with three main goals. The first goal is to concentrate on the target demographic of young adults from disadvantaged backgrounds, specifically those in the 15 to 35-year age range. The second goal is the integration of formal and informal education to make the best use of the available resources. The third goal is to emphasize the need to develop functional skills as an essential component of growth.

The National Literacy Mission, which was introduced in 1988, included developmental literacy in addition to the earlier adult literacy programmes. In addition to the previously mentioned emphasis on the 3Rs (Reading, Writing, and Arithmetic), it incorporates other components such as social awareness, the development of pertinent social skills, women's empowerment, health and hygiene, population management, the importance of national integration, and environmental conservation.

In India, lifelong learning is not a brand-new concept. The Gandhian Basic Education Schemes contain India's first formal and well-articulated concept of lifelong learning. The goal of Gandhian Basic Education is to provide students with 3H with a comprehensive and integrated education through the use of useful handicrafts.

HAND: work-based problem-solving practice and universal education.
HEAD: mental cognitive process.
HEART: character building education.

This contrasts with the 3Rs method of skill acquisition. In India, the conversation about education policy has been slowly but steadily giving more weight to lifelong learning as the fundamental idea that will underpin the restructuring of the whole formal education system of the country.

Some of these prominent government policy documents in India with components of lifelong learning policy are:

i. **Kothari Education Commission (1964-1966):** To uphold the dignity of labour and advance vocational and agricultural education, the Kothari Education Commission placed a strong emphasis on the curriculum's inclusion of practice and productive work. Adults must comprehend how rapidly their world is changing and how complicated society is becoming. Every adult citizen is entitled to opportunities for professional growth, educational enrichment, and active engagement in social and political life.

ii. **National Knowledge Commission (NKC, 2005–2008):** Meeting 21st-century issues and strengthening India's competitive edge in knowledge-based industries are two of NKC's goals for both the lifelong learning and formal education systems. The following recommendations were made by the Indian National Knowledge Commission:

a) The advancement of lifelong learning in India to foster an inclusive and people-centered knowledge society.

b) Preparing a blueprint for establishing a national lifelong learning programme that will provide high-quality education to all citizens.

c) The sharing of elite institutions' intellectual capital through open courseware and learning tools, as well as the open education of people looking to brush up on or catch up on their education.

iii. **Planning Commission of India (PCI) 11th five-year plan (2007-2012):** The Planning Commission centered on a comprehensive strategy that would reinforce every aspect of the national education system, emphasizing the need for lifelong learning. Because of this, adult education and LLL are still only offered within the very specific traditional parameters of basic literacy, functional literacy, extension education, and community outreach programmes. In the past ten years, however, there has been an increased focus on skill development to meet the demands of emerging markets and new technologies. One important step toward the extension of the concept of LLL is the integration of elementary and secondary education with the labour market.

iv. **The University Grants Commission's (UGC) 11th plan guideline on LLL and extension education:** This document alone may be the first comprehensive national policy document on lifelong learning in India, which includes comprehensive guidelines. The university's Department of Adult and Continuing Education took steps to change its name to the Department of Lifelong Learning, and it broadened the scope of adult and continuing education through a new programme called the Lifelong Learning Education and Awareness Programme (LEAP).

v. **PCI's 12th five-year plan (2012-2017) guideline on LLL and extension education**: To enhance and improve personal, civic, and economic circumstances—including employment—this document places a strong emphasis on the lifelong learning perspective in all learning activities that people may engage in throughout their lives in formal, non-formal, and informal settings. The primary focus is on acknowledging prior learning, which is a paradigm shift in lifelong learning and literacy, as evident in the 12th five-year plan document. The Indian government's Saakshar Bharat Mission (SBM) was established in 2009 to advise people to adapt to the new paradigm of lifelong learning.

vi. **Ministry of Labour and Employment:** Both the National Policy for Skill Development & Entrepreneurship (NPSDE 2015) and the National Policy for Skill Development (NPSD 2009) are explicitly focused on meeting the skilled labour demands of the nation's expanding global market. With a focus on the demands of the market and employers, they seek to raise the calibre and extent of skill training and education in India. In both policy texts, they also stress the importance of including marginalized groups in social justice discourse and envisioning them as empowered in real-world situations. The spread of open and distance learning, or MOOCs (massive open online courses), is further emphasized in both the Ministry of Labour document and the Ministry of Employment document; however, they have not been able to do so effectively.

## Need and Challenges of Adult Education

One can advance both personally and professionally by making use of the vast array of personal, economic and lifelong learning opportunities that come with literacy and basic education. Literacy and basic education are potent force multipliers that significantly increase the effectiveness of all other developmental initiatives at the societal and national levels. Global data from several countries show a very strong relationship between GDP/per capita income and literacy rates.

**Table 1.1: Youth and Adult Literacy Rates 2018**

| Country | Youth Literacy Rates (%) (15-24) Years | | | Adult Literacy Rates (%) (15+ Years) | | |
|---|---|---|---|---|---|---|
| | Total | Male | Female | Total | Male | Female |
| World | 91.54 | 92.84 | 90.27 | 86.24 | 89.77 | 83.02 |
| China | 99.78 | 99.78 | 95.15 | 96.84 | 98.46 | 95.15 |
| Brazil | 99.20 | 99.77 | 99.45 | 92.80 | 92.57 | 93.02 |
| Russian Federation | 99.69 | 99.65 | 99.74 | 99.73 | 99.72 | 99.73 |
| India | 91.66 | 92.99 | 81.85 | 74.37 | 82.36 | 65.79 |

Source: *UNESCO Institute for Statistics (uis.unesco.org) September 2021*

**Table 1.2: Youth and Adult Literacy Rates 2023**

| Country | Youth Literacy Rates (%) (15-24) Years | | | Adult Literacy Rates (%) (15+ Years) | | |
|---|---|---|---|---|---|---|
| | Total | Male | Female | Total | Male | Female |
| World | 93 | 94 | 92 | 87 | 90 | 84 |
| China | 100 | 100 | 100 | 97 | 94 | 96 |
| Brazil | 99 | 99 | 100 | 95 | 99 | 95 |
| Russian Federation | 100 | 100 | 100 | 100 | 100 | 100 |
| India | 97 | 97 | 96 | 76 | 83 | 69 |

Source: *UNESCO Institute for Statistics (uis.unesco.org) September 19, 2023*

After analyzing the data on the adult literacy rate in many countries, it is understood that India's adult literacy rate is very low, which is why we need to boost it. A country's fate is mostly in the hands of its young and adults, and the advancement and progress of every country heavily depends on adult education. The ability to protect families, raise children, prosper, and mature to contribute to the growth and development of the country will only come from educated adults. Unfortunately, a significant number of today's adults never had the chance to enrol in or finish school as a result of our previous generations' failures to achieve universal education. The government attempted several times to reach 100% adult literacy, but was unable to do so. As a result, NEP 2020 outlined numerous plans to accomplish 100% adult literacy by 2030. This will be achieved with the help of volunteers, political will, organizational structure, careful planning, sufficient funding, and the development of an Adult Education curriculum framework that includes five programme types: Basic education, Vocational skill development, Foundational literacy and numeracy, and Critical life skills.

## NEP 2020's Comparison with Existing Policies wrt. Lifelong Learning and Adult Education

NEP 2020 promotes continuous learning through adult education to prevent people from becoming obsolete in terms of their modern skills, knowledge, maturity, and contentment with their lifestyles (Aithal & Aithal, 2020; Alsaadat, 2018; Bordoloi et al., 2020; Singh, 1991; Mandal, 2019). Three essential paradigms—educability, opportunity, and motivation—are required for adult education programmes to operate efficiently (Mandal, 2019; Aggarwal, 2012; Antunes, 2020; Volles, 2016). Adults can be encouraged to become self-reliant through appropriate incentives such as vocational training that helps them acquire a variety of skills with intrinsic value and financial possibilities (Kaplan, 2016; Jedlikowska, 2014; Asiksoy et al., 2017; Milana, 2019). As a result, NEP 2020 has incorporated this paradigm, which previous policies did not prioritize. Strawn (2007) gave detailed elaborations on several policies encouraging the expansion of adult education programmes.

He has pointed out the need for postsecondary education, training, and workforce development programmes to help the community obtain jobs so that they can support their families (Reder, 2020; Morrissey, 2002; Aker et al., 2012). For example, using a smartphone has become an essential skill for every member of a community, especially after the COVID-19 pandemic and Digital India (Aker et al., 2012). Thus, teaching online and tech-savvy abilities, as well as digital coding, are important additions to a lifelong learning curriculum (Iivari et al., 2020; Livingstone et al., 2007; Mariën et al., 2014). Different pedagogical approaches that emphasize the strengths

and skills of adult learners rather than their deficiencies have proved to be an efficient approach for motivating lifelong learners (Crowther et al., 2010; Black et al., 2013). Amaral (2019) described a critical comparative analysis of 54 lifelong learning programmes that have been put into practice in about nine European nations. The association between the aims and approaches of these programmes and the impacts, outcomes, and opinions of adult learners has been thoroughly examined. In the current context, policies supporting lifelong learning are designed to organize, prepare, make amends, and enhance the transition from school to the workforce. This is particularly important for early school dropouts, as these policies enable them to secure jobs after acquiring the required education and training (Amaral, 2019; Levitt et al., 2021; Lee et al., 2008; Jarvis, 2014).

Current lifelong learning policies focus on two essential parameters: social inclusion and economic prosperity (Gough, 2015; Schneider et al., 1993; Walther, 2006). However, policies should be designed based on research data and evidence-based techniques from both provincial-level and national-level scenarios, according to the comments and reactions received from the targeted groups. This is attributed to the requirement of knowing each state's function, influence, and worldview to modify techniques for delivery. Another crucial strategy to encourage the growth of adult education initiatives is the role of gender equality and equitable involvement of women in this programme (Añonuevo et al., 2011; Berrozpe et al., 2020; Addae, 2021). This is due to research findings indicating that the societal impact on adult literacy programmes influences the way lifelong learning projects are implemented (Addae, 2021; Maruyama, 2009; Evans, 1996; Burt, 1997).

## NEP 2020's Contribution to the Advancement of Adult Education for National Development

Adult education has enormous potential for the advancement of the country. The National Education Policy 2020 (NEP 2020) states that adult education is essential to a country's progress. NEP 2020 seeks to offer educational opportunities to all, regardless of age, in recognition of the value of lifelong learning. According to Tikader (2023), a country can optimize the potential of its adult population, improve its skills and knowledge, and build a more successful and inclusive society by funding adult education initiatives.

NEP 2020 highlights the following important points about adult education and national development:

i. **All-encompassing Development:** NEP 2020 places a strong emphasis on inclusive and equitable education, making sure that learning opportunities are

available to people of all ages. The objective of this strategy is to empower individuals from diverse backgrounds and facilitate their active involvement in the advancement of the country by offering adult education.

ii. **Skill Development:** The policy acknowledges the importance of improving people's knowledge and skills throughout their lives. Programmes for adult education are focused on acquiring new skills or improving current ones, allowing adults to adjust to the ever-changing demands of the labour market. Consequently, this enhances the country's GDP growth.

iii. **Human Resource Development:** The general growth of a country's human resources is dependent on adult education. NEP 2020 seeks to develop a highly skilled workforce by giving adults the chance to expand their knowledge and skill sets. An educated adult population could accelerate national development in several areas, such as industry, research, innovation, and entrepreneurship.

iv. **Active Citizenship:** Adult education fosters democratic principles, critical thinking, and social responsibility, all of which contribute to the growth of active citizenship. Adults can actively participate in social and civic activities, make decisions, and improve the welfare of their community and country by acquiring the necessary knowledge and skills.

v. **Bridging the Education Gap:** Adult education assists in narrowing the education gap for those who were not able to finish their formal education during their early years. It provides a second opportunity to individuals who, due to a variety of circumstances, may have lost out on educational possibilities. By eliminating this divide through adult education, we can guarantee lifelong learning for all people, fostering equitable educational opportunities and social inclusion.

## Curriculum Framework for Adult Education for Nation Development

India's New Education Policy 2020 (NEP 2020) acknowledges the value of adult education for country's development. The NEP 2020 adult education curriculum framework is essential in providing individuals with the skills, information, and abilities required for their career and personal growth. NEP 2020's goals for adult education include:

**i. Universal Access:** The programme's purpose is to make adult education accessible to all adults, especially those from underprivileged and marginalized communities, so that they can pursue lifelong learning.

**ii. Functional Literacy:** The goal of the policy is to help individuals develop the fundamental reading, writing, and numeracy abilities necessary for daily life. This facilitates people's effective participation in different spheres of life, including work, community service, and personal growth.

**iii. Lifelong Learning:** NEP 2020 seeks to establish pathways for adults to increase their expertise, proficiencies, and understanding of lifelong learning. It stimulates adults to pursue endless learning to cope with changing social and economic standards.

**iv. Vocational Skills:** The policy emphasizes the need to offer opportunities for people to get training and development in occupational skills. It aims to provide students with pertinent skills that improve their career prospects, entrepreneurial skills and promotes financial independence.

**v. Digital Literacy:** NEP 2020 acknowledges the significance of digital competence in the current digital era. It ensures individuals' access to training in digital skills and concentrates on equipping them with the knowledge and abilities necessary to utilize technology efficiently, obtain information, and engage in the digital economy.

**vi. Personal Development:** The policy places a strong emphasis on personal growth via adult education. To foster holistic growth, it seeks to enable adults to follow their strengths, preferences, and personal aspirations.

**vii. Inclusive Education:** NEP 2020 advocates for inclusive education by targeting the specific educational needs and obstacles encountered by women, minorities, adults with disabilities, and other marginalized groups. It seeks to give all adults equitable access to adult education programmes.

The adult education curriculum framework serves as an orientation document outlining the main ideas, objectives, and subject areas of the programmes. A competency-driven approach, flexible paths, appropriate content areas, instructional methodologies, assessment and evaluation criteria, goals and objectives, and assistance services for adult learners are some of its components. India can make sure that adults have an opportunity for high-quality education and prospects for professional as well as personal growth by implementing the adult education curriculum framework. As a result, the country develops its workforce, lowers poverty and inequality, encourages active citizenship, enhances health and well-being, promotes social cohesion and integration, and fosters an atmosphere of continuous learning. In a nutshell, the New Education Policy 2020's adult education curriculum framework seeks to meet the varied learning needs of adults while advancing their social, cultural, and economic prosperity and eventually the country's overall development.

## Expansion and Advancement of Adult Education Programme through Various Platforms

Several platforms are essential to supporting the expansion and advancement of adult education. These platforms are made to meet the particular needs and difficulties

faced by adults studying in India. It is essential to analyze several platforms to promote adult education's development and expansion, which are as follows:

i. **New India Literacy Programme, or NILP:** An important platform that the Indian government has approved for the fiscal years 2022–2027 is the NILP. In keeping with the National Education Policy (NEP) 2020, the goal of NILP is to offer online adult education programmes. Its main objectives aim to teach fundamental education, key life skills, vocational skill development, foundational reading and numeracy, and continuous learning. Through the participation of Anganwadi workers, ASHA workers, teachers, and other community volunteers, the initiative promotes volunteering. The goal of this all-encompassing strategy is to give non-literate adults who are 15 years of age and older access to adult education.

ii. **Skill Development Programmes:** Programmes for skill development are essential to adult education because they increase employability and potential earnings. Adults can obtain technical skills and vocational training through skill development programmes offered by the Indian government and other organizations. A wide range of industries is covered by these programmes, such as digital skills, manufacturing, healthcare, agriculture, and tourism. Initiatives aimed at developing adult skills include Industrial Training Institutes (ITIs), Pradhan Mantri Kaushal Vikas Yojana (PMKVY), and Skill India.

iii. **Digitalization and Online Learning Platforms:** Technology's incorporation into adult education has greatly aided in its expansion and advancement in India. To close the digital gap, the government places a strong emphasis on digital literacy and improves internet infrastructure in rural areas. A variety of courses and materials are available for adult learners on online learning platforms such as SWAYAM, SWAYAMPRABHA, and National Digital Library. Adult learners can access instructional materials at their convenience, which offers them flexibility in the learning process.

iv. **Community-Based Groups and Non-Governmental Organizations (NGOs):** They are essential for the advancement of adult education in India. They collaborate closely with neighbourhood groups, disseminate awareness about the value of education, organize resources, and offer adult learners support networks. These groups run awareness campaigns, job training programmes, and adult education courses that are customized to the community's needs. In order to develop a long-lasting framework for adult education, they also work in conjunction with other stakeholders and governmental organizations.

v. **Government Programmes and Policies:** To encourage adult education, the Indian government has established a number of programmes and policies. Among the well-known programmes aiming at raising adult literacy rates and offering potential for skill development are the National Literacy Mission, Saakshar Bharat Mission,

and National Skill Development Mission. The infrastructure, resources, and financial support for adult education programmes are the main goals of these efforts.

vi. **Accreditation and Certification:** These two elements are crucial in guaranteeing the quality and acceptance of programmes for adult education. Accredited credentials give adult learners a sense of accomplishment and improve their employability. To increase credibility and motivate learners, the government supports adult education programmes that are accredited and certified.

vii. **Public-Private Partnerships:** Working together with businesses and private sector associations can give adult learners access to more resources and possibilities. Public-private collaborations make it easier to create apprenticeships, job placements, and training programmes that help adults gain employable skills. These collaborations increase the efficacy of adult education initiatives by utilizing the resources and experience of the commercial sector. In general, a multifaceted strategy incorporating government-sponsored efforts, skill development programmes, digital platforms, volunteerism, accreditation, and collaborations is necessary for the continued expansion and development of adult education in India. Together, these approaches and platforms address the unique difficulties encountered by adult learners while offering them access to the kind of education they need to improve their knowledge, abilities, and socioeconomic prospects.

## Impact of Adult Education on Individual's Life

Mukherjee et al. (2024), in their research paper, discussed the phrase "Sa vidya ya vimuktaye"—which emphasizes that education releases one from oppression and ignorance -is deeply rooted in our ancient writings. Literacy is an essential component of education. Therefore, it is impossible to exaggerate the importance of literacy and adult education. The development challenge facing humanity today is to constantly improve skills and expand the number of people with the skills needed to meet social demands; it has been closely related to adult education and aligns with national goals. These goals include reducing poverty, preserving the environment, stimulating cultural creativity, supporting small-family values, and advancing gender equality. To properly accomplish these goals, current adult education programmes will need to be thoroughly reviewed and strengthened. Mr. Humayun Kabir clarified that social education develops social cohesiveness and citizenship consciousness.

Adults frequently have to put other obligations ahead of their schooling, which causes them to unintentionally overlook skill development. Under such conditions, adult education becomes an essential path for individual and community development, and NEP 2020 emphasizes that age is not a barrier to learning. The fact that everyone

agrees on the value of education emphasizes how important it is to start the process of learning. A systematic adult education programme is being introduced by NEP 2020 to improve literacy and proficiency in significant domains related to people's careers. Adult education might improve a person's life in the following ways:

i. **Autonomy in Monetary Transactions:** Adult education fosters independence and confidence by providing people with the literacy skills they need to conduct monetary transactions on their own.

ii. **Financial Access to Opportunities:** People who are more proficient in reading and writing can more easily fill out applications and forms for opportunities that fit their goals and interests, which expands their prospects for both career and personal development.

iii. **Contributions to Education:** Adult education enables people to teach young adults their expertise and abilities so they can actively influence the development of future generations.

iv. **Personal Growth and Development:** People can improve their quality of life, widen their horizons, and successfully pursue personal growth and development by receiving the right kind of education through adult education programmes.

v. **Conformity to Safety Measures:** Adult education promotes personal safety and well-being by ensuring that people truly understand and can adhere to instructions and safety measures, especially in times of emergency.

vi. **Fostering an Awareness of Literacy:** Adult education fosters a broader understanding of the value of literacy, which in turn encourages people to support literacy efforts and argue for the importance of literacy in society. Following the New Education Policy 2020, Punjab University in Chandigarh has extended additional weighting to candidates who have made significant contributions to adult education. This includes those who run NGOs, operate adult education centres, or volunteer with these organizations in addition to government programmes. This particular idea was first reported in the Times of India on May 20, 2024. By establishing the NEP 2020 on May 8, 2024, the V.C. of Punjab University set up the admission facilitation committee to promote lifelong learning and encourage more young people to enrol in adult education programmes. There are eligibility requirements for this additional weightage. Applicants must present a certificate from an accredited institution or non-governmental organization that teaches illiterate adults. Students who operate adult education centres are eligible to apply for weightage based on the number of adults they educate to read and write. For example, a credit of 0.35% will be awarded for teaching 10 adults, 0.65% for 20 adults, and 1% for 30 adults. In the same way, student volunteers also coordinate a mass functional literacy campaign. Credits are awarded based on the number of illiterate people they assist; for every ten adults,

they get 1%, and for every five adults, 0.65%. This important P.U. programme seeks to steadily raise literacy rates to inspire young people in this nation to support lifelong learning.

In conclusion, a philosophical inquiry into adult education, lifelong learning, and workable solutions in the framework of NEP 2020 uncovers a complicated network of related ideas and possible paths for revolutionary change. NEP 2020's integration of theories of lifelong learning with its guiding principles emphasizes how important it is to cultivate a continuous learning culture that encompasses an array of age groups. The background provided by the historical development of adult education in India is insightful and helps to guide current initiatives. Although there are acknowledged obstacles, such as societal perceptions and practical difficulties, a philosophical examination of practical solutions offers pragmatic interventions based on well-established educational theories. These theoretical underpinnings offer a strong framework for additional study and real-world applications, suggesting an achievable path in the direction of a more egalitarian society.

## Conclusion

The National Education Policy (NEP) 2020 emphasizes the importance of adult education and incorporates important provisions to support adult learning and skill development. The role that various platforms and policies play in the implementation of adult education programmes is crucial in determining how effectively high-quality education is disseminated throughout the community. Adult education is vital to a country's overall growth. Countries can use adult education to accomplish economic growth, eradicate poverty, achieve social advancement, promote greater wellness, and foster a culture of lifelong learning by addressing the issues and putting NEP 2020's recommendations into practice.

Adult education empowers people with the information and abilities they need to support the country's economic development. As a result, adults can find sustainable employment, establish businesses, and participate in various economic sectors, which eventually promotes productivity and the general economic growth of the country. Additionally, adult education assists people in ending the lifelong pattern of poverty. Adults can increase their earning potential as well as employment opportunities by learning new skills and knowledge, which will help them support themselves and their families. As a result, dependency on welfare programmes is decreased, which lowers poverty and improves living standards. Another important effect of adult education on the country is social development, which encourages community

engagement and empowerment by giving people the chance to develop their ability to think critically, build interpersonal skills, and understand social challenges.

Adult learners who are knowledgeable and informed are better able to take an active role in democratic processes, support social justice, and engage in community activities, all of which contribute to the growth and cohesion of society. Additionally, adult education improves people's general health and well-being as well as the health of their communities. Adult education encourages better decisions about well-being by equipping adults with information on health-related concerns, wellness strategies, and healthy habits. This leads to better health outcomes, lower medical expenses, and a more robust society. Therefore, adult education promotes a culture of lifelong learning, which is critical in today's quickly evolving world. A society that appreciates and encourages adult education fosters creativity, personal development, and resilience by encouraging people to continue learning and developing their skills throughout their lives.

Limited access, low literacy rates, learning opportunities for the underprivileged, qualified facilitators and teachers, prior learning, sustainability and resource allocation, awareness and sensitization, and the integration of technology are some of the major obstacles to adult education implementation under NEP 2020. Countries can create an inclusive and holistic adult education system that meets the various learning requirements of adults by putting these guidelines into practice. This will guarantee sustained growth and enable people to realize their full potential while also advancing the country's general prosperity (Mukherjee et al., 2024).

Taking into account the everlasting significance of lifelong learning, the New Education Policy (NEP) is a shining example of inclusivity, supporting universal access to education. Programmes for lifelong learning and adult education are important ways to remove obstacles that impede a person's development, regardless of age, occupation, way of life, or acquired skills (Gandhi, 2022). The NEP heralds an era of empowerment by recognizing the different demands of social groups, especially those who have historically been excluded or lacked access to education. Government agencies and academic institutions working together to create innovative guidelines, personalized educational programmes, and strong apprenticeships will make sure that no one is left behind in their pursuit of knowledge and skill development. Additionally, the incorporation of infrastructure and technology expenditures emphasizes a dedication to updating adult learners' educational delivery formats. Although the NEP does not impose a strict timeframe for implementation, the proactive actions taken by several state governments and educational institutions

indicate an optimistic move in the right direction toward achieving its goals. In the end, the NEP's unflinching endorsement of adult education opens the door to a more prosperous and inclusive society where education's transformative power breaks down barriers and promotes development for all. The foundation of democracy must be strengthened, and the qualities of the ideal citizen must be fostered, through adult education. It gives people the information and abilities they need to ethically and actively engage in democratic processes. Adult education helps ensure that people understand the value of democracy and their roles in society by improving literacy and civic awareness. By enabling people to make meaningful and productive contributions to society's advancement, this education promotes social cohesion and political stability. In the end, adult education is a major factor in both individual development and the general well-being of a democratic community.

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# Status of Transgender Faculty at Higher Education Institutions in India: A Conceptual Study

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## Abstract

Over the past decade, India has witnessed significant changes and progress concerning gender minorities, with specific reference to transgender persons. This conceptual paper aims to highlight the milestones achieved in the socio-legal ecosystem, as well as the challenges faced by gender minorities in higher education institutions in India. Transgender faculty members in higher education often encounter misgendering, mispronunciation of their names, and tokenization (being hired specifically because they are transgender). In addition, many endure harsh pressures, bullying, and hostile working conditions. The purpose of this paper is to provide deeper insights into the meaning of the umbrella term transgender and to develop an understanding of the challenges and discrimination faced by this group in higher education institutions, which manifest both as widespread transphobia and as subtle microaggressions.

**Keywords:** *Gender inclusion, SDG 5, transgender faculty, higher education institutions, HRD strategy.*

## Introduction

Most of the research on queer issues in human resource development (HRD) has focused less on transgender identity and/or expression, which makes it relevant to understand the status of transgender faculty members in higher education institutions. People who identify as transgender are still undervalued in the human resource development (HRD) field. As HRD practitioners strive to establish diverse and inclusive organizations, transgender issues are particularly crucial because there is a lack of understanding about gender diverse people at workplaces. By situating the experience of transgender faculty in higher education institutions within

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a relevant and important framework of HRD, this research work aims to build a more inclusive and safe workplace for transgender individuals. In order to understand the experiences of transgender faculty in Indian higher education institutions, a secondary source approach based on the case study of transgender faculty was explored.

## Gender, Gender Identity and Transgender Persons

According to World Health Organisation (WHO), gender is indicative of the characteristics of women and men which are socially constructed and is rooted more in culture and environment. It refers to the beliefs and roles associated with being a girl or a boy. In other words, a person may be born as a male or a female but they learn to be girls or boys who grow up into women and men.[3] While gender identity refers to the internal sense of self, it may or may not align with the sex assigned at birth.[4] It reflects a person's sense of being a man, a woman, both, neither, or anywhere along the gender continuum. Before discussing the status of transgender faculty members in India, it is important to understand the meaning of the term *transgender*, which serves as an umbrella term encompassing varied identities. Section 2(k) of *The Transgender Persons (Protection of Rights) Act* (2019) defines a transgender person as any individual whose gender does not correspond with the biological sex assigned at birth. This includes trans men or trans women, whether or not they have undergone surgery or hormone therapy, persons with intersex variations, genderqueer individuals, and those with socio-cultural identities such as hijra, kinnar, aravani, and jogta.[5]

## Historical Background of Transgender Persons in India

Transgender persons have had an established presence in Indian mythology and folklore. The *Vedas*, *Puranas*, epics, and various other texts indicate the existence of people belonging to the third gender in pre-modern India (Michelraj, 2015). Transgender identities have long been a part of Indian culture and history, with diverse expressions across Asia, unlike the more rigid gender constructs in Western

[3]Gender and Health, World Health Organisation, retrieved on December 21, 2024 from https://www.who.int/health-topics/gender#tab=tab_1

[4]Gender and Health, World Health Organization, retrieved on December 21, 2024 from https://www.who.int/health-topics/gender#tab=tab_1

[5]The Transgender Persons (Protection of Rights) Act, 2019, Ministry of Law & Justice, The Gazette of India, available on https://transgender.dosje.gov.in/docs/Transgender%20Act,%202019.pdf , accessed on December 15,2024

nations. Socio-cultural identities such as Hijras, Kothis, Eunuchs, Aravanis, Jogappas, and Shiv Shakti have been integral to the transgender community in India. In the Indian subcontinent, Hijras developed as a distinct cultural group and have been mentioned for thousands of years, despite facing exclusion and discrimination. They have often been visible during festive occasions, yet remain largely invisible in mainstream domains such as healthcare, employment, and education. In pre-colonial times, Hijras enjoyed relative security and status. They served in wealthy households, guarded royal harems during the Mughal period, and held key positions as advisors, attendants, administrators, political counsellors, and security personnel. They also played crucial roles in guarding Islamic holy places such as Mecca and Medina, and were considered fiercely loyal to kings. During the Mughal era, they commanded both wealth and prestige, and Hijras continue to cite this period as a time of significant influence and recognition.

However, despite this revered presence in India's sociocultural fabric and their frequent mention in religious and historical texts, transgender persons were ridiculed and oppressed during British colonization. They were criminalized under the *Criminal Tribes Act* of 1871 (Dutta, 2012). Rellis (2007) also notes that colonial laws further marginalized the community and reinforced social stigma. In post-colonial times, transgender persons began to assert their identities through ancestral ties and demands for fundamental rights as a sexual minority. Contemporary developments have seen NGOs, community-based organizations, the media, and government agencies collaborate to raise awareness and develop welfare programs. In recent decades, Hijras have also become active in politics, with some holding both local and state public offices (Reddy, 2003). The LGBTQI rights movement in India gained momentum in the 1990s when community-based organizations and NGOs, initially mobilized around the AIDS epidemic, began to expand their advocacy from health concerns to broader issues of civil rights.

## Legal Advancements in Contemporary India

Transgender persons were granted fundamental constitutional rights and the right to self-perceived gender identity as the third gender by the Supreme Court of India in the landmark *National Legal Services Authority (NALSA) v. Union of India and Others* case (Supreme Court of India, 2014). For many years, the citizenship rights of gender-variant communities were not regarded as a legitimate concern, in contrast to the recognition accorded to women and other minority groups. The 2014 judgement was celebrated as a historic breakthrough, though it also drew criticism for leaving Section 377 of the Indian Penal Code intact, which criminalized

homosexuality. While the transgender community welcomed legal recognition as the third gender, many expressed disappointment at the continued criminalization of same-sex relations. Section 377 was eventually read down in 2018, when then-Chief Justice Dipak Misra acknowledged that an apology was due to the LGBTQ community for the prolonged denial of justice (Chaturvedi, 2018). Since then, India's legal system has demonstrated gradual progress in safeguarding the rights of transgender persons in areas such as education, employment, and healthcare, although social inclusion remains a serious concern. The *Transgender Persons (Protection of Rights) Act, 2019* and the accompanying Rules of 2020 marked a further milestone, laying down specific provisions for the protection of transgender persons' rights and imposing penalties for violations.

According to Section 2(k) of the Act, a transgender person is defined as anyone whose gender does not correspond with the biological sex assigned at birth. This definition includes hijras, kinnars, aravanis, and jogtas, as well as trans men, trans women, persons with intersex variations, and genderqueer individuals.[6] Further, Section 4(2) of the Act affirms the right of every transgender person to self-perceived gender identity. The Act explicitly prohibits discrimination. Section 3 of Chapter 2 stipulates that no establishment shall discriminate against a transgender person in employment or occupation. Section 3(c) prohibits denial or termination of employment based on gender identity. Section 9 of Chapter 5 further emphasizes non-discrimination in recruitment, promotion, and related employment matters. Additionally, Section 11 mandates that every establishment appoint a complaints officer to address grievances regarding violations of the Act.

The Rules of 2020 reinforce these provisions. Section 10(7) requires all establishments to conduct sensitization programs alongside appointing a complaints officer. Section 11 outlines measures for non-discrimination in both government and private institutions, while Section 12 specifies guidelines for equal opportunity in employment. These include:

• Ensuring a safe workplace free from gender-based discrimination in recruitment, promotion, incentives, and infrastructure adjustments (12[1]).

• Publishing and displaying an equal opportunity policy for transgender persons, including details of the complaints officer, in appropriate places and on the establishment's website (12[2], 12[3]).

[6]The Transgender Persons (Protection of Rights) Act, 2019, Ministry of Law & Justicce, The Gazette of India, retrieved on December 15,2024 from https://transgender.dosje.gov.in/docs/Transgender%20Act,%202019.pdf

• Sharing information about infrastructure, rules, terms of employment, and safeguards for gender identity privacy (12[4]).

Furthermore, Section 13 of the Rules requires every establishment to designate a complaints officer within 30 days of notification. Complaints must be investigated within 15 days of receipt, with the institutional head required to take action within another 15 days of receiving the report. At the systemic level, the Rules mandate that the appropriate government establish a grievance redressal mechanism-including outreach centers and helplines - within one year. This mechanism must ensure resolution of grievances within 30 days and impose penalties in line with Section 18 of the Act, which prescribes imprisonment of six months to two years and/or a fine.[7] A summary of the Act's provisions is presented below in Table 1:

**Table 1: Provisions of Transgender Persons (Protection of Rights) Act, 2019**

| Chapter | Subject | Section |
|---|---|---|
| Chapter 1 | Preliminary | Section 1, 2 |
| Chapter 2 | Prohibition against discrimination | Section 3 |
| Chapter 3 | Recognition of identity of transgender persons | Section 4,5,6,7 |
| Chapter 4 | Welfare measures by government | Section 8 |
| Chapter 5 | Obligation of establishments and other persons | Section 9, 10,11,12 |
| Chapter 6 | Education, social security & health of transgender persons | Section 13, 14,15 |
| Chapter 7 | National Council for transgender persons | Section 16,17 |
| Chapter 8 | Offences & Penalties | Section 18 |
| Chapter 9 | Miscellaneous | Section 19, 20, 21,22,23 |

Source: Compiled by authors

Despite significant legal advancements in contemporary India, the social inclusion of transgender persons remains a matter of serious concern. The 2011 Census recorded their population at approximately 4,90,000 (Nagarajan, 2014), yet their representation in organizations continues to be minuscule. Transgender employees

[7]The Transgender Persons (Protection of Rights) Rules, 2020, The Gazette of India, retrieved on December 16, 2024 from https://transgender.dosje.gov.in/docs/TG%20RULES,%202020.pdf

and their workplace challenges have become a pressing subject in current debates and research (Kanamori et al., 2017; Pitcher, 2017). However, the experiences of transgender faculty members in both schools and higher education institutions have not been encouraging (Pitcher, 2017). Faculty members who identify as transgender often face discrimination and barriers at multiple levels, highlighting the urgent need to raise awareness about their rights and foster acceptance (Mizock et al., 2018). Their workplaces are frequently hostile and unwelcoming (Garvey & Rankin, 2018), with common experiences including misgendering and mispronunciation (Pitcher, 2017). While substantial research exists on other minority groups such as women, there remains a clear gap in academic literature exploring the challenges faced by transgender persons (Garvey & Rankin, 2018).

According to the International Labour Organization (2017), transgender persons experience some of the highest levels of workplace discrimination. Meyer's (2015) minority stress model further illustrates that stigmatized groups face disproportionately high stressors compared to non-stigmatized groups, and that workplace discrimination often results in both mental and physical distress. Transgender employees also encounter microaggressions, which can leave them emotionally drained and anxious (Garcia Johnson & Otto, 2019). Yet, their experiences remain underexplored in academic research. Wells (2018) underscores the need to examine transgender employees' experiences within the higher education discourse, while DeSouza et al. (2017) similarly stress the importance of analyzing the marginalization and challenges faced by transgender persons in contemporary workplaces. This paper adopts a case study methodology, which is particularly effective for exploring phenomena in real-life, holistic contexts (Alpi & Evans, 2019). As a conceptual paper, it builds upon documented experiences in secondary sources to provide a nuanced understanding of the challenges faced by transgender faculty members in higher education.

## Methodology

This conceptual paper is based on the secondary sources. It also builds upon case studies based on the lived experiences of gender diverse faculty members in India.

## Case Studies

The first transgender person to hold a college principal position was Manabi Bandyopadhyay, who was appointed by Krishnagar Women's College in 2015. The

community was hopeful because it was a positive example that would empower other transgender people in academia. However, Bandyopadhyay's forced resignation in 2016 dampened this optimism. In an interview with multiple news outlets, Bandyopadhyay's revealed that she had experienced a great deal of discrimination in her career because of her gender identity. She had joined the college with hope but was left disappointed and in constant mental turmoil because of uncooperative teachers and students. She eventually resigned after numerous accusations and gheraos against her (Poddari, 2016). More than her merit, her gender identity became the criterion for assessing her work. The teachers at the college demanded a cease-work, citing Bandyopadhyay's autocratic work style as the reason for the serious breakdown of the college's functioning. Constant gheraos and non-cooperation from both students and teachers left Manabi with no choice but to resign. This clearly exemplifies that recruitment or hiring alone is not sufficient if people are not sensitised and made aware of the importance of including those who may be different from us. India is a progressive country, yet its people continue to hold on to certain stereotypes. The transgender community may have gained legal recognition, but social acceptance still remains limited. There is inadequate awareness about gender identity, and society is often unwilling to accept any incongruence with expected behaviour related to gender binaries.

In another case study, Dr. Aqsa Shaikh, who identifies as a transgender woman and is an Associate Professor at a leading medical institution in Delhi, shared her ordeal about the bitter experiences and challenges she had to face because of her gender identity. She recounted that her journey as a medical student was marked by unpleasant experiences, including internalised self-doubt, depression, and various forms of hostility from her peers. She even considered dropping out of college due to bullying and discrimination, yet the hope of escaping poverty kept her going.[8] She further highlighted that medical science often views gender-diverse people through a pathological and disorderly lens. In her opinion, there is a need for more affirmative steps, including reservation in educational institutions, to ensure the inclusion of transgender persons in a society that has historically marginalised and criminalised them.[9] Although the medical profession is considered one of the most sacrosanct, Aqsa shared that, despite being a faculty member at the same medical college, she was subjected to medical negligence due to a lack of awareness in dealing with transgender persons. She was misdiagnosed and given unnecessary antibiotics.

[8]Dr Aqsa Shaikh, egomonk insights, retrieved on December 22, 2024 from https://insights.egomonk.com/dr-aqsa-shaikh-22/

[9]SC takes up case of transgender teacher's workplace discrimination, The law advice, accessed retrieved on December 22, 2024 from https://www.thelawadvice.com/news/sc-takes-up-case-of-transgender-teacher-s-workplace-discrimination

In yet another case, a transgender person was embroiled in a legal battle after being terminated from two schools in Uttar Pradesh and Gujarat once their gender identity came to light. The petitioner stated that she had been issued appointment letters from both schools, only to be dismissed immediately after her gender identity was revealed. All three cases of transgender persons in educational institutions - ranging from schools to higher education - showcase the persistent lack of awareness and the prevalence of harassment even in the education sector, which has the potential to pave the way toward a dignified life.

## Recommendations

The paper also builds upon the Sustainable Development Goal (SDG) Agenda - 5 on gender equality and critically appraises the value-addition for transgender and gender-diverse persons in context of building an inclusive and sustainable future for all at the workplace irrespective of gender. The present work argues persuasively that gender diversity in gender identities and expressions is a necessary component of an authentic gender equality that aims to free people from gender-based oppression. It follows that if the SDGs are only applied to gender binary thinking and restrictive cis-normative ideals, it will be difficult to realise their full potential. The negative effects of marginalizing gender diversity and transgender issues in relation to SDG 5 necessitates a quick exploration of the realities faced by this population. The oppressive and stifling influence of patriarchy is felt by transgender and gender non-conforming people everywhere, and they are unable to benefit from the potentially transformative power of trans-inclusive gender equality discourses.

A few suggestions are enumerated below for the inclusion of a diverse workforce:

### Scanning the Workplace

Besides scanning the external environment, the internal workplace environment should also be taken into consideration in the inclusion process. With the knowledge gained from the case studies, one may perceive previously unconsidered elements within the workplace as a potential issue or challenge to employees from marginalised groups. The case study of the transgender principal Manabi Bandopadhyay demonstrates how, despite an organization's best efforts at hiring diversely, internal resistance may lead to its failure.

### Infrastructural Facilitie

There is a need for proper infrastructural facilities at workplace to enable the gender diverse people in carrying out their work in an efficient manner. Gender-

neutral washrooms, locker rooms, facilities in hostels as mentioned in the ACT can go a long way in having inclusive workplaces.

**Sensitisation**

There is a need for sensitisation and awareness in institutions and organisations across various stakeholders to better understand the challenges faced by minority groups and to understand their concerns.

**Make Changes**

The diversity and inclusion practitioner should be aware of the localised issues affecting the minority employee group and make changes in the employment policies and medical insurance policies to cover all groups.

**Support of Top Leadership**

Any progressive change is possible only when the leaders and mentors support the minority groups and champion a culture of openness, inclusion and encourage people irrespective of gender, colour, region on an ongoing basis. A culture that fosters open communication and non- discrimination can go a long way in getting the best out of every employee.

**Fostering Inclusion vis-à-vis Data Diversity**

It is significant to note that having a diverse workforce on papers vis-à-vis including them in processes can only create desired outcomes. Measuring the number of diverse people in organisations vis-à-vis creating processes which are inclusive such as parity in pay packages, promotions based on merit, medical insurance for transitioning and sex reassignment surgery can create positive outcomes.

## Conclusion

The wide variety of transgender concepts and issues may be confusing to many, and discussions of transgender issues in human resource development (HRD) remain limited. This paper offers recommendations that HRD scholars and practitioners can use in their research and practice to better understand transgender identity, address related challenges, and establish safe spaces for individuals whose gender identity and expression do not align with normative expectations. It also emphasizes the need for the HRD community to examine organizations that have successfully - or unsuccessfully - implemented inclusive practices, in order to gain a deeper understanding of how such efforts can drive meaningful change. The suggestions outlined here can be applied to create safer and more supportive workplaces for all

employees. However, social and organizational change are inherently complex and non-linear processes. For stakeholders, discussions about transgender issues can quickly become both challenging and personal. Therefore, it is critical for HRD practitioners and scholars to acquire and retain knowledge that enables them to contribute effectively, creatively, and constructively to these discussions. There is a pressing need to develop models within HRD discourse that expand understanding of the unfair treatment faced by transgender people in the workplace. We urge the field of HRD to remain sensitive to the concerns and requirements of transgender employees, to embrace transgender perspectives, and to make a sustained commitment to improving workplace environments for everyone, including transgender individuals.

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# Skilling Need of Youth in West Jaintia Hills District of Meghalaya

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## Abstract

The rise of literacy in India in recent decades has inevitably been accompanied by increasing unemployment among youth. The growth in the number of qualified young people has not, unfortunately, translated into the availability of skilled, employable personnel in the country. In the era of globalization, liberalization, and privatization, the employability of educated youth is closely linked to the acquisition of essential skills. The growing problem of skilled unemployment in India is often wrongly attributed to a shortage of jobs. In reality, with ever-increasing global demand for Indian talent, the services sector in India remains perennially hungry for fresh talent. According to estimates, over the next few years, 10 million more people will join the ranks of the unemployed, bringing the total to 220 million. The Government of India also forecasts the creation of 1 million additional job vacancies, but it expects that this will not be sufficient to counter the effects of population growth. As of July 2023, the unemployment rate in India stood at 7.95%. In March 2023, the unemployment rate in Meghalaya was 2.63%, and for rural areas it was 1.85%. Today, India is recognized as one of the youngest nations in the world, with over 50 percent of the population under the age of 30. It is further estimated that by 2025, India will account for 25 percent of the total global workforce. Recognizing the urgent need for skill development among youth, the Government of India has launched several initiatives through the National Skill Development Council (NSDC) and various Sector Skills Councils. These initiatives aim to expand vocational training institutions, introduce schemes for skill development, and identify industries with high employment potential. The mission of these initiatives is to train nearly 500 million people across different fields. The mission also emphasizes upgrading the skills of youth to international standards through significant industry involvement. For Meghalaya,

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skill development is critical from both socio-economic and demographic perspectives. In the West Jaintia Hills District, the majority of youth have limited access to appropriate skill education and training. The district does not yet have a well-institutionalized system of vocational training to meet the needs of educated but unemployed youth. Therefore, the adoption of the right approach is required to establish a high-quality framework of skill education and training for the youth in West Jaintia Hills District. The present paper is the outcome of empirical research conducted in selected villages of West Jaintia Hills District to identify the skilling needs of the youth. It also suggests intervention mechanisms to provide the desired skills in line with the needs and aspirations of the youth in the district.

**Keywords:** *Youth Unemployment, Skill Development, Employability, Vocational Training, National Skill Development Council (NSDC).*

## Introduction

India occupies around 2.4% of the world's landmass but is home to 17.5% of the world's population - approximately 1.2 billion people. Population density is higher in urban areas, while nearly 75% of India's population resides in about six lakh villages. There are visible disparities between rural and urban regions, rich and poor, highly educated and lesser educated, and forward and backward areas. Resourceful people, particularly those in urban settings, have access to better education and professional training. In contrast, the vast majority of those living in rural areas and urban slums have limited education and rarely undergo technical, professional, or vocational training. For most of these groups, quality higher education is unaffordable. Consequently, they tend to work in the low-paid, unorganized sector, where individual productivity is only a fraction of that in the organized sector of the Indian economy. In an increasingly competitive environment, the unorganized sector must enhance the productivity of its workforce to ensure survival and growth. However, a paradox exists: the informal sector cannot afford to employ highly educated and professionally trained manpower, as such individuals typically aspire to more challenging, rewarding, and satisfying careers. Therefore, the only viable option for the informal sector is to rely on relatively low-paid workers trained through non-formal skill development systems. There is, therefore, an urgent need to train millions of youths every year through a nationwide network of non-formal skill development initiatives. Such programs must attract beneficiaries from all sections of Indian society, with special emphasis on Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), women, school dropouts, minorities, persons with disabilities, economically weaker sections, and other underprivileged groups.

### 1.1 Profile of Jaintia Hills District

The total area of Jaintia Hills District in Meghalaya is 3,819 km², with a population density of 103 people per square kilometre. According to the 2011 Census, the district had a total population of 395,124, comprising 196,285 males and 198,839 females. There were 66,028 families residing in the district. The overall sex ratio was 1,013 females per 1,000 males. Of the total population, 7.2% lived in urban areas, while 92.8% resided in rural areas. The average literacy rate in urban areas was 91.1%, compared to 59.1% in rural areas. The sex ratio in urban areas was higher at 1,079, while in rural areas it stood at 1,008. Children aged 0–6 years accounted for 90,911 individuals, constituting about 23% of the total population. This included 46,011 male children and 44,900 female children. The child sex ratio was 976, lower than the overall district sex ratio of 1,013. The total literacy rate of the district was 61.64%, which was considerably lower than the state literacy rate of 74.43%. Male literacy stood at 58.14%, while female literacy was slightly higher at 65.06%. The district also recorded 207,597 illiterates. Jaintia Hills is predominantly inhabited by tribal communities, with Scheduled Tribes constituting about 95.2% of the total population. In terms of religion, Christians form the majority at 68.74%, followed by Hindus (3.15%), Muslims (0.42%), Buddhists (0.07%), Sikhs (0.01%), and Jains (0.01%). About 27.60% of the population reported belonging to "other religions." Of the total geographical area, only 8 km² falls under urban regions, while 3,811 km² is classified as rural. In urban regions, the literacy rate was 91.1%, with male literacy at 91.83% and female literacy at 90.44%.

### 1.2 Need and Justification of the Study

India, being largely an agrarian economy, derives a significant share of its GDP from villages and rural areas. Rural development and prosperity are therefore deeply integrated with the nation's overall growth. In this context, skilled workers and entrepreneurs are the need of the hour, with the government committed to strengthening the skill landscape in the coming years. Mobilizing the available youth and workforce and transforming them into skilled individuals is critical for harnessing the potential of India's burgeoning youth population. Although India possesses abundant resources, there is often a lack of knowledge on how to utilize them effectively. This is where skill development becomes essential. With the right skills, individuals can convert raw materials into finished products without depending on others for processing. Skill development thus forms the foundation of industrial growth, enabling the creation of a robust industrial economy. Such an economy would strengthen India's GDP while reducing overdependence on agrarian and service-based sectors.

## 1.3 The Problem

The challenge of skilling India is enormous, as recent studies indicate that employers find only about 25% of Indian graduates "employable" in the organized sector. The informal sector, which comprises nearly 93% of the workforce, lacks a structured skilling mechanism, as most skill development takes place on the job. There is therefore an urgent need to reorganize the skill development ecosystem and promote initiatives tailored to the needs of industry to improve the quality of life of the population. Skill development initiatives will help actualize the country's latent potential, and a national policy on skill development is already in progress to address this challenge. In Meghalaya, youth employability has declined due to a lack of skills and experience, highlighting the need to place greater emphasis on skill training. The exodus of rural youth to cities is another factor contributing to unemployment. According to data released by the Centre for Monitoring Indian Economy (Shillong Times, February 3, 2022), the unemployment rate in Meghalaya is the third lowest in India at 1.5%. However, rural youth are less skilled compared to their urban counterparts, who often pursue professional courses in fields such as engineering and medicine, largely due to differences in financial resources. Although rural areas are rich in raw materials for industries, prosperity will not be achieved unless employment opportunities are created locally. The creation of new avenues of employment in rural areas is therefore viewed as the most effective way to reduce distress migration from villages to cities.

## 1.4 The Mandate of Skill Development Programmes

The skill development programmes selected for training should be designed on the basis of a need assessment survey and the felt needs of the locality. Greater emphasis must be placed on meeting the growing demands of the service sector. Each identified college should conduct a survey to determine the priority skill training requirements of a cluster of 10 to 20 villages.

The skill programmes offered should be flexible, non-formal, and open to all, without any restrictions based on age, gender, or educational qualifications. Special attention should be given to targeting poor and deprived sections of society in both urban and rural areas, particularly women, SCs/STs, OBCs, minorities, school dropouts, street children, persons with disabilities, economically weaker sections, and other underprivileged groups. To promote self-employment in the service sector, training should emphasize multi-skill development. For employment in production centres, training may focus either on specialized designated skills or multi-trade

skills, depending on local needs and industry requirements. The possibility of sharing financial, infrastructural, and skill resources across institutions, organizations, and agencies should also be explored. Trainees' achievements, in terms of competencies developed, should be recognized through certificates that indicate their proficiency levels. Such certification, issued by community colleges, will assist employers in recruitment decisions. Community colleges may also collaborate with potential employers to jointly issue certificates to programme participants. Furthermore, community colleges should establish an effective feedback mechanism to track the post-training outcomes of trainees, particularly their transition into self-employment or wage employment.

### 1.5 Objectives of the Study

1. To study the socio-economic conditions of the people living in the villages in and around DDU Community College, Wahiajer;
2. To find out the vocational needs of the unemployed youth from the surveyed villages.

### 1.6 Delimitation of the Study

The study is delimited to the villages in and around DDU Community College, Wahiajer.

### 1.7 Universe of the Study

The universe of the study comprises of all the 124 villages in Thadlaskein block of Jaintia hills district, Meghalaya.

### 1.8 Sample

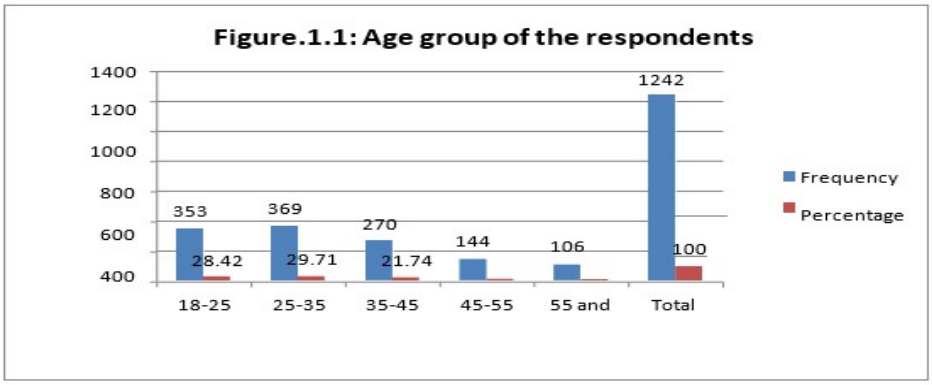
The sample of the study was 1242 households across 20 villages covering 1242 respondents using random sampling method.

### 1.9 Tools Used

In order to study the socio-economic conditions of the people in and around Wahiajer and find the vocational needs of unemployed youth, an interview schedule was developed by the investigators.

## 1.10 Analysis and Interpretation of Data

**Figure 1.1: Age group of the respondents**




The figure 1.1: shows the age group of the respondents. The data revealed that maximum number of the respondents were in the age group of 25-35 years (29.71 percent), followed closely by the 18-25 years age group (28.42 percent), and followed by respondents from age group of 35-45 years (21.74 percent). In the age group of 45-55 there were 11.60 percent respondents and in the age group of 55 and above, there were 8.53 percent respondents.

**Figure. 1.2: Sex of the respondents**

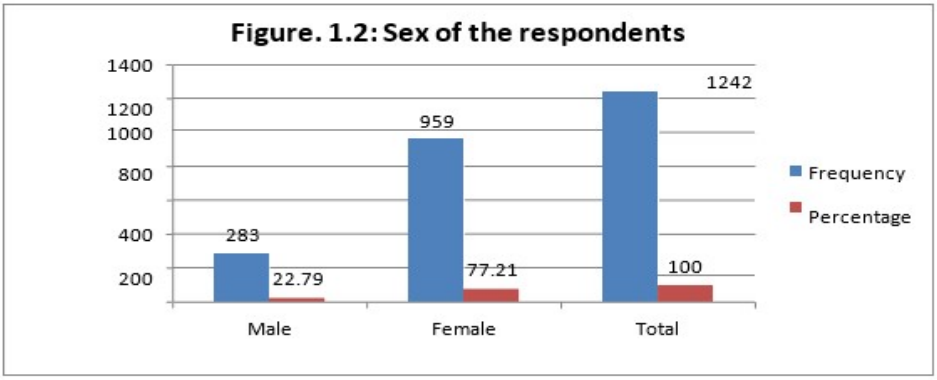



Figure 1.2 reflects the sex of the respondents. It was found that 77.21 percent of the respondents were females and 22.79 percent were males.

**Figure 1.3: Type of family**

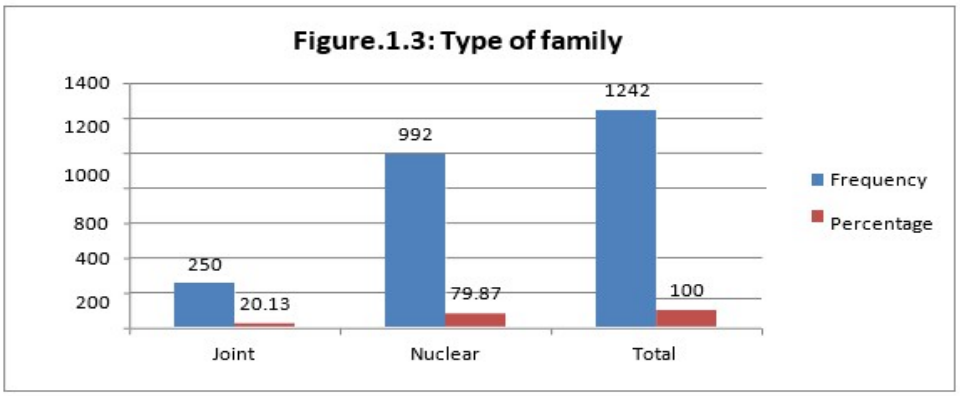



Figure 1.3. shows that with regard to the type of family of the respondents, it was found that 79.87 percent were nuclear families and only 20.13 percent were joint families.

**Figure 1.4 : Family size of the respondents**

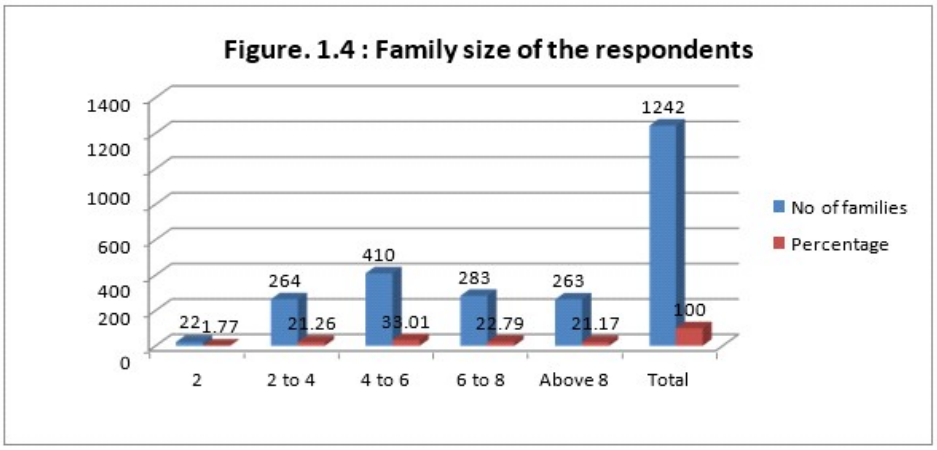



Figure 1.4. shows the family size of the respondents. It was found that 410 families constituting to 33.01 percent had family members of 4 to 6 members, 283 families constituting to 22.79 percent had 6 to 8 members, 264 families constituting to 21.26 percent had 2-4 members, 263 families constituting to 21.17 percent had more than 8 members and only 22 families constituting to 1.77 percent had 2 members.

**Figure 1.5: Religion of the respondents**

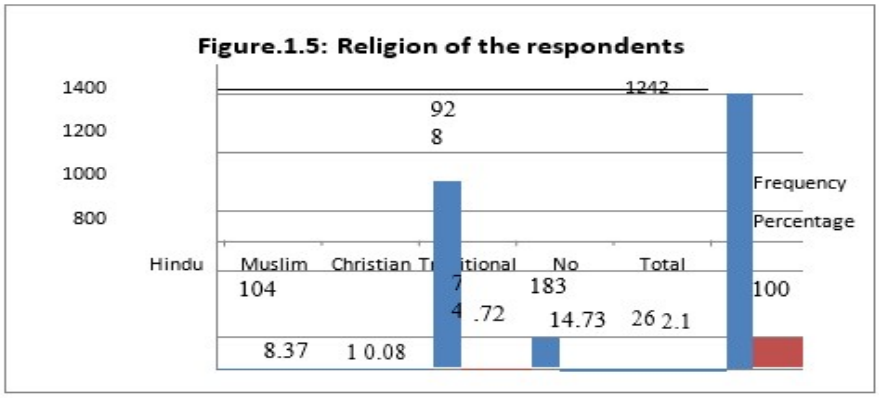



Figure.1.5 shows the religion of the respondents. It was found that 74.72 percent belong to Christian religion, 14.73 percent followed traditional religion, 8.37 percent were Hindus and 0.08 percent Muslims. There was no response from 2.10 percent respondents with respect to their religious status.

**Figure 1.6: Tribal sub group of the respondents**

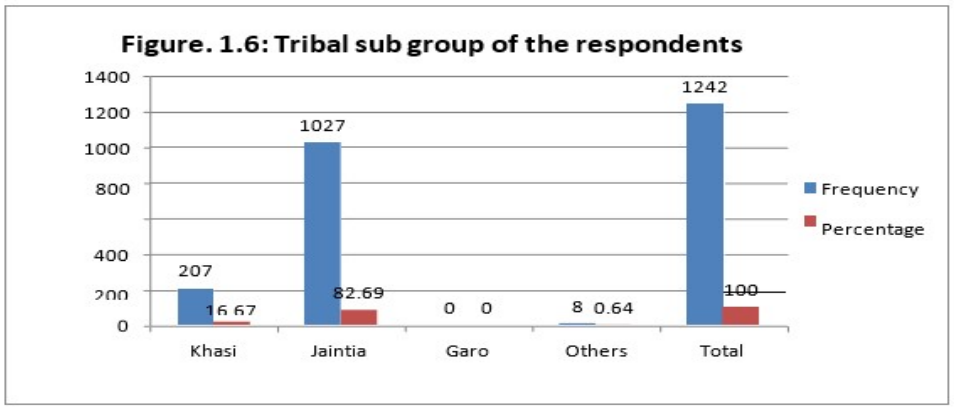



Figure 1.6: Shows the tribal subgroups of the respondents. It was found from the data that 16.67 percent respondents were Khasi's, 82.69 percent are Jaintia's and 0.64 percent constituted other subgroups.

**Figure 1.7: Marital status of the respondents**

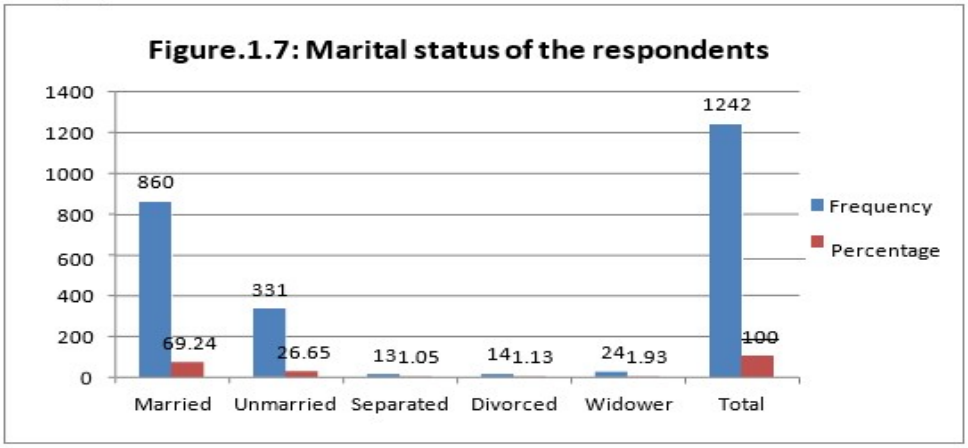



Figure 1.7: Shows the marital status of the respondents. It was found from the data that out of 1242 respondents, 69.24 percent respondents are married, 26.56 percent are unmarried, 1.05 percent are separated, 1.13 percent are divorced and 1.93 percent are widowers.

**Figure. 1.8: Income of the respondents per month**

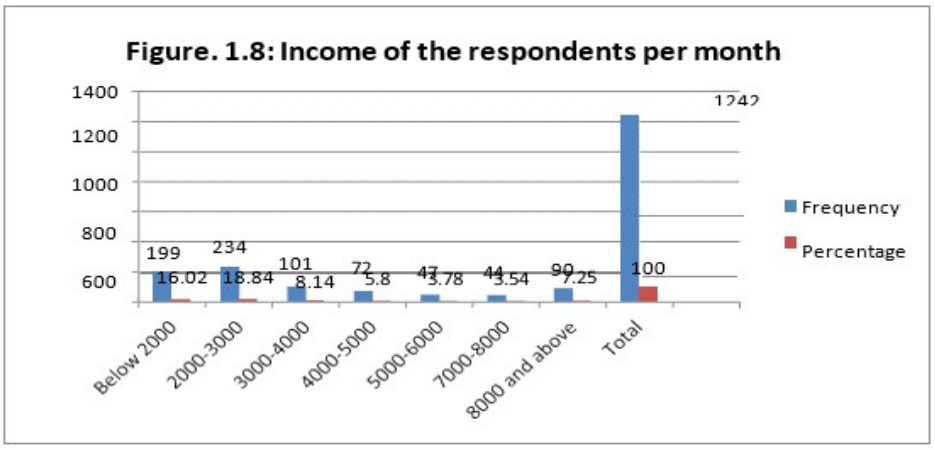



Figure.1.8 reflects the monthly income of the respondents. It was found from the data that 36.63 percent respondents have no income. 18.84 percent of the respondents have income of Rs 2000-3000 per month, 16.02 percent have income less than Rs 2000 per month, 8.14 percent have income between Rs 3000-4000 per month, 5.80 percent have income between Rs 4000-5000 per month, 3.78 percent

have income between Rs 5000-6000 per month, 3.54 percent have income between Rs 7000-8000 per month and 7.25 percent have income above Rs 8000 per month.

**Figure 1.9: Occupational status of the respondents**

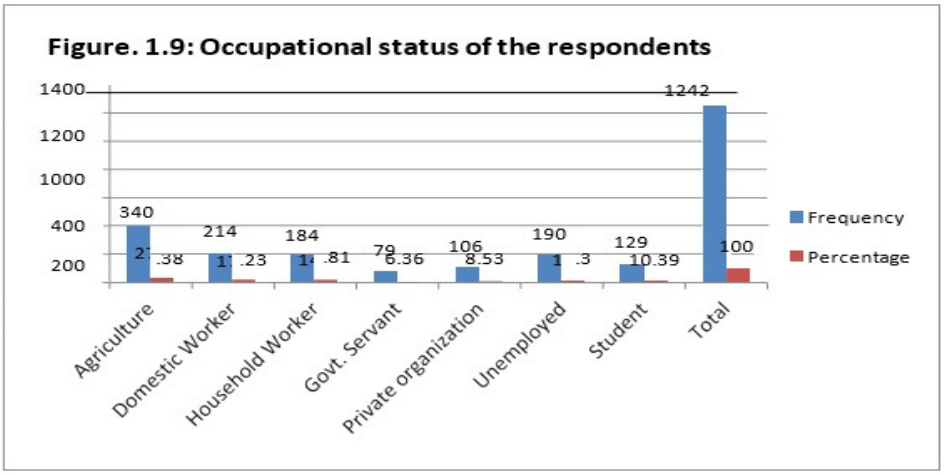



Figure.1.9 shows the occupational status of the respondents. It was found that 27.38 percent practiced agriculture, 17.23 percent work as domestic servants, 14.81 percent work as household workers, 6.36 were government servants, 8.53 percent work in private organizations, 15.30 percent were unemployed and 10.39 percent were students.

**Figure. 1.10: Educational status of the respondents**

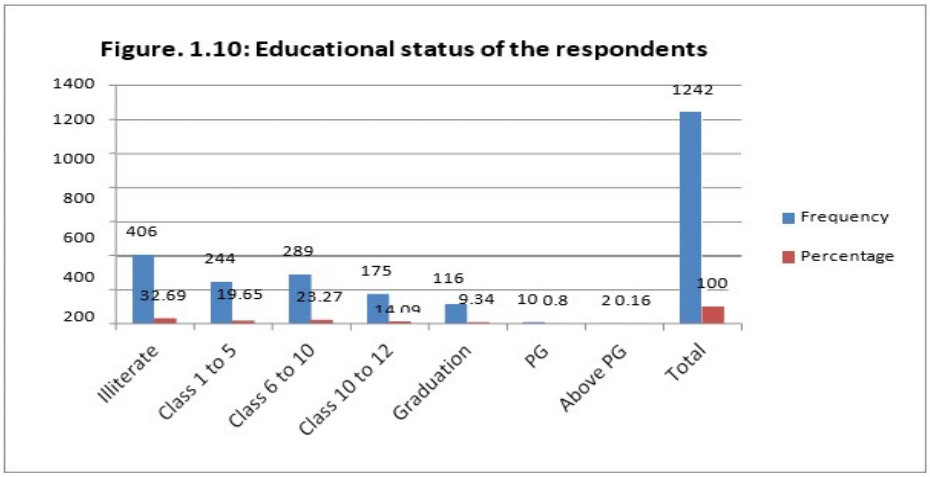


Figure 1.10. shows the educational status of the respondents. It was found that 32.69 percent were illiterates, 19.65 percent studied up to grade V, 23.27 percent studied from grade VI to X, 14.09 were between grade X to XII , 9.34 percent were graduates, 0.80 percent were post graduates and only 0.16 percent had qualification above PG level.

**Figure 1.11: Last educational status of the respondents**

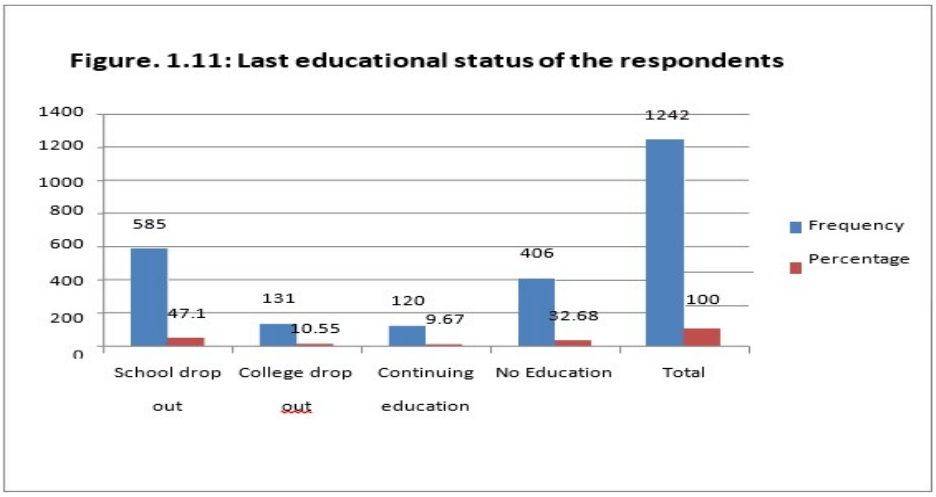



Figure1.11 shows the last educational status of the respondents. It was found that 47.10 percent were school dropouts, 10.55 percent were college dropouts and only 9.67 were continuing their education at present.

**Figure.1.12: Present employment status of the respondents**

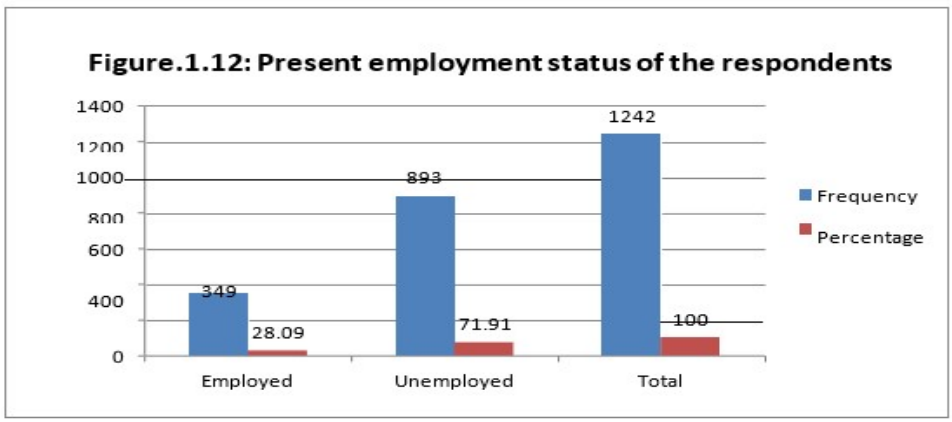


Figure.1.12. shows the present employment status of the respondents. It was found that 28.09 percent were employed in some occupation or the other and 71.91 percent were unemployed.

**Figure.1.13: Number of unemployed in the house**

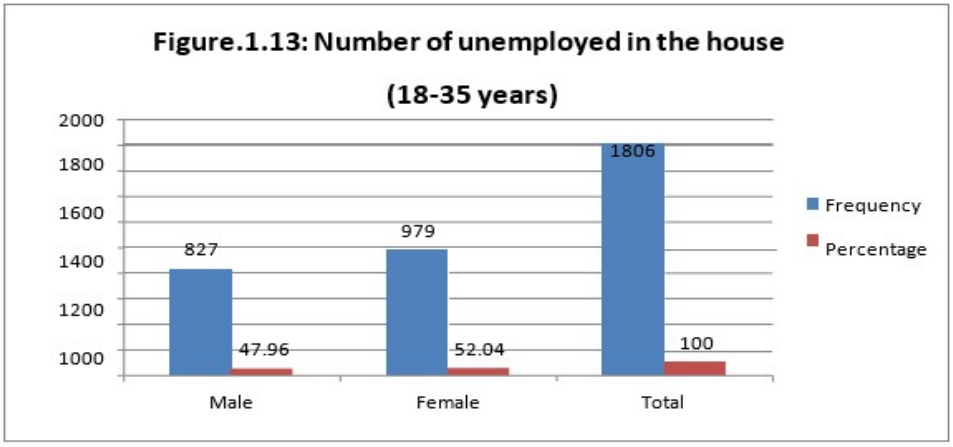



Figure.1.13 shows the number of unemployed persons in the household. It was found that nearly 1806 persons in the age group of 18-35 years from 1242 houses were unemployed. The unemployed males in this age group were found to be 47.96 percent and the unemployed females were 52.04 percent.

**Figure.1.14: Primary source of income**

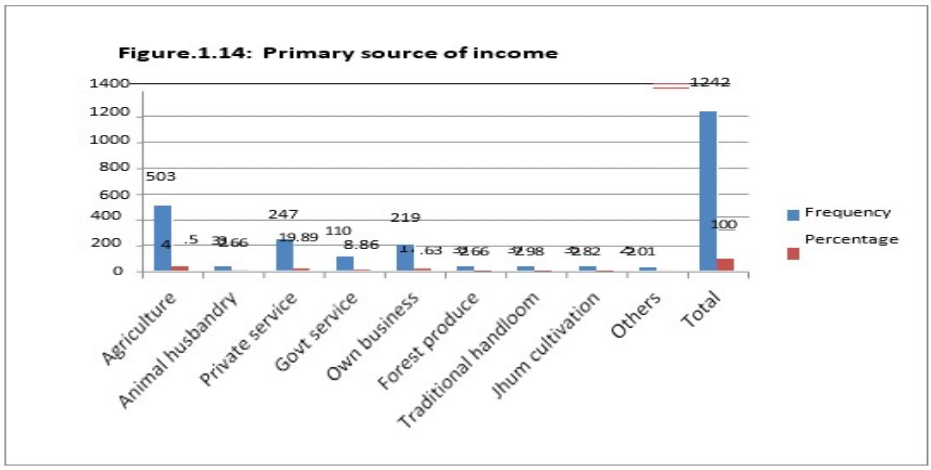


Figure.1.14 shows the primary occupation of the respondent's family.

It was found that 40.50 percent are agriculturists, 2.66 depend upon animal husbandry, 19.89 percent have private sector jobs, 8.86 percent are in government services, 17.63 percent depend upon their own business, 2.66 percent depend upon forest produce, 2.98 percent depend upon traditional handloom, 2.82 percent practice Jhum cultivation and 2.01 percent depend upon other work.

**Figure.1.15: Land holdings of the family**

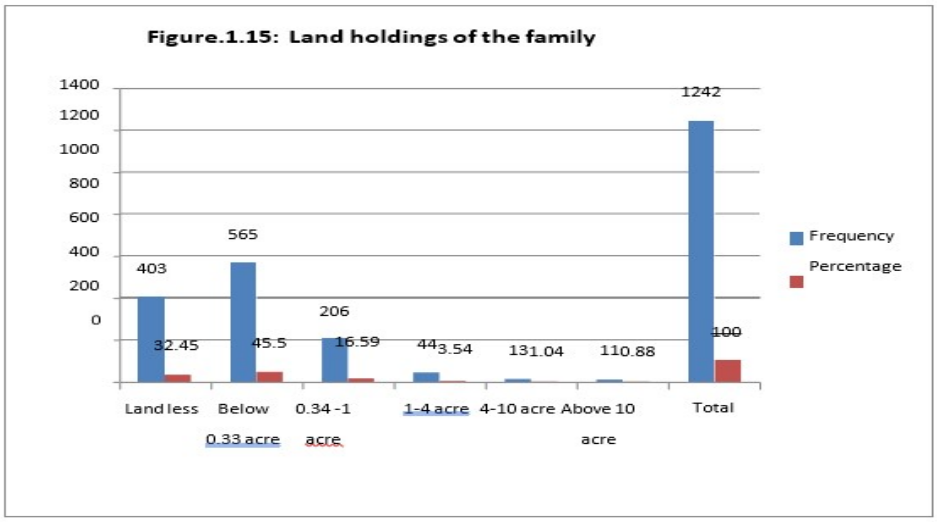



Figure 1.15 shows the land holding of the family. It was found from the data that 32.45 percent of the households are landless. Further 45.50 percent have land below 0.33 acres, 16.59 percent have 0.34-1 acre, 3.54 percent have 1-4 acres, 1.04 percent have 4-10 acres and 0.88 percent have more than 10 acres of land.

Figure.1.16 shows the type of the land holdings. It was found that 6.92 percent have wet land, 15.30 percent have dry land, 45.33 percent have land on hilly slopes and 32.45 percent have no land.

**Figure. 1.16: Type of land**

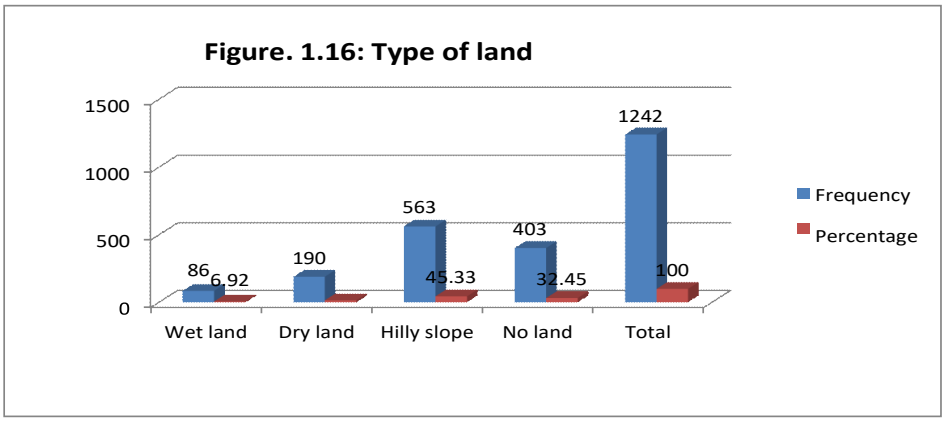



Figure. 1.17: Type of food crops grown

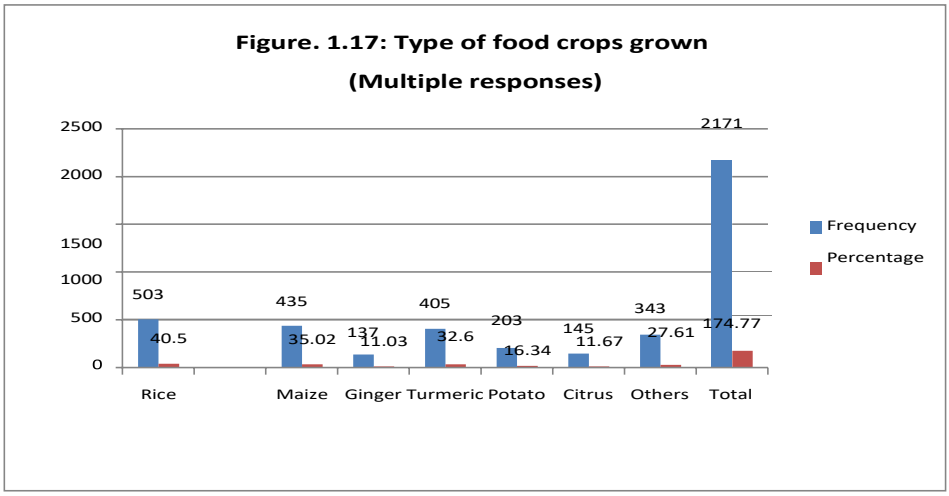



Figure.1.17 shows that the food crops grown by the respondents family members. It was found that 40.50 percent grow rice, 35.02 percent grow maize, 11.03 percent grow ginger, 32.60 percent grow turmeric, 16.34 percent grow potato, 11.67 percent grow citrus and 27.61 per cent grow other crops.

**Figure.1.18: Other food crops grown**

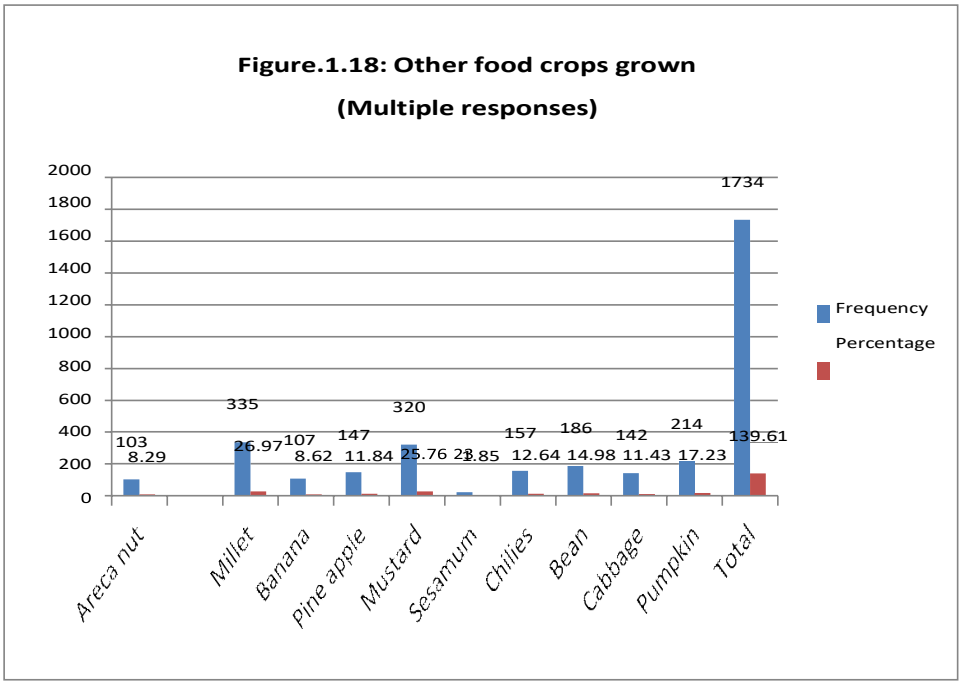



Figure.1.18 shows the other crops grown by the respondent's family. The data show that 8.29 percent grow areca nut, 26.97 percent grow millet, 8.62 percent grow banana, 11.84 percent grow pineapple, 25.67 percent grow mustard, 1.85 percent grow sesame, 12.64 percent chillies, 14.98 percent grow bean, 11.43 percent grow cabbage and 17.23 percent grow pumpkin.

**Figure 1.19: Family Member's Interest in Vocational Training Programmes**

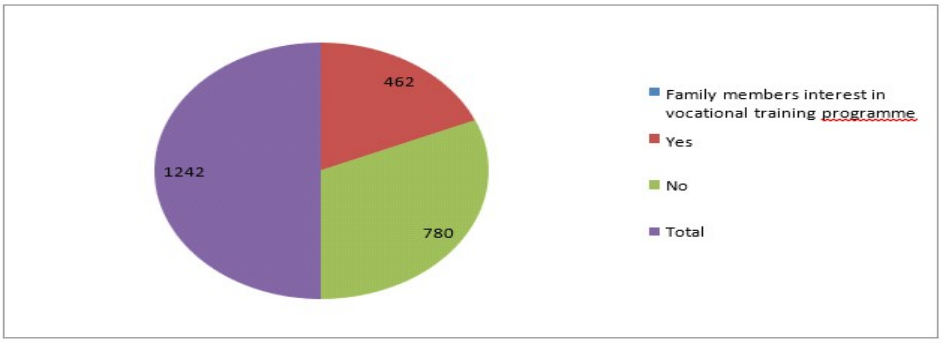
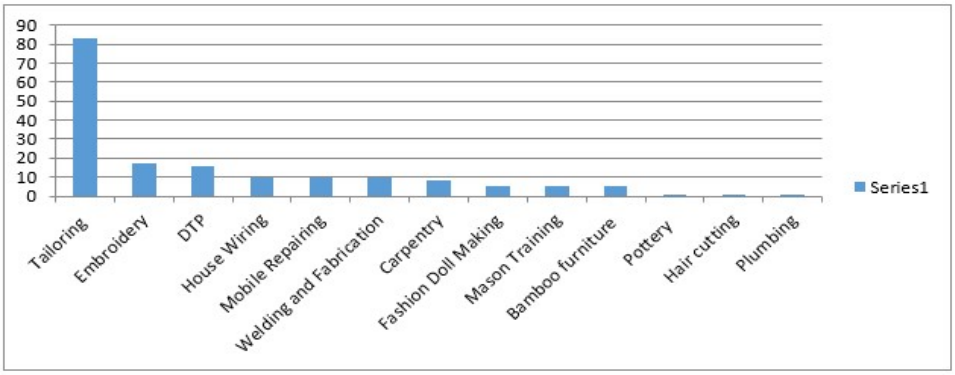


Figure.1.19. shows the family members interest in vocational training offered by DDU community college, Wahiajer. It was found that out of 1242 households, nearly about 37 percent of the households constituting to 462 members are willing to undergo vocational training programmes under DDU community college.

**Figure 1.20: Interest in Vocational Trades by the Respondents**




The data shows the vocational trades which the respondents are interested in. Out of 1242 respondents, it was found that 171 respondents were interested in vocational training programmes. The most favoured vocational training programme was cutting and tailoring (83 respondents), embroidery (17 respondents), DTP (16 respondents), house wiring (10 respondents), mobile repairing (10 respondents), welding and fabrication (10 respondents), carpentry (8 respondents), fashion doll making, mason training and bamboo furniture making ( 5 respondents each), pottery, hair cutting and plumbing (1 each). But nearly about 37 percent of the households had members who are interested in vocational training programmes, according to the opinion of the respondents.

## 1.11 Main Findings

The survey was conducted across 1,242 households in 20 villages located in and around the DDU Community College, Wahiajer. Data were collected from one member of each household. Of the 1,242 respondents, nearly 30% belonged to the 25–35 years age group, followed by those aged between 18–25 years. Among the respondents, 77% were female and 23% male. Family composition analysis revealed that almost 80% of the families were nuclear, while 20% were joint families. About 33% of families had 4–6 members. In terms of religion and ethnicity, 75% of respondents identified as Christian, with 82.69% belonging to the Jaintia tribes. Regarding economic status, nearly 37% of respondents reported having no income. Agriculture was the main occupation for about 28% of households. Educational

status indicated that almost 33% of respondents were illiterate, and 47% were school dropouts. The survey further identified 1,806 unemployed individuals aged 18–35 years across the 1,242 households, comprising 48% males and 53% females. With respect to agriculture, rice, maize, and turmeric were found to be the principal crops, while millet, mustard, pumpkin, chilies, and cabbage were also commonly cultivated. In terms of livestock, poultry and piggery were the most popular activities among respondents. Out of the 1,242 households, 171 respondents had availed of loans from banks for purposes such as business, agriculture, or self-employment.

## 1.12 Recommendations

India enjoys a demographic dividend, with more than 60% of its population in the working-age group. This youth bulge presents a unique opportunity for the country to accelerate growth and supply skilled manpower to the global market. According to the World Bank, India's working-age population will outnumber its dependent population for at least three decades, until 2040.

The National Higher Education Commission estimated that by 2020, the average age of India's population would be 29 years, compared with 40 years in the USA, 46 years in Europe, and 47 years in Japan. Over the next two decades, the labour force in industrialized nations is projected to decline by 4%, while India's will increase by 32%. However, with 93% of the labour force engaged in the unorganized sector, a major challenge lies in equipping this vast population with employable skills to secure decent work and improve their quality of life.

The estimated incremental human resource requirement for skill development across India between 2012 and 2022 is 12.03 crore. To meet this demand, the country's skill development infrastructure must expand several fold, as the current capacity is less than one-fourth of the target. Between 2015 and 2022 alone, an estimated 104.62 million fresh entrants to the labour force were projected to require skilling or vocational education. At present, 21 ministries and departments of the Government of India are engaged in skill development programmes.

Despite these efforts, several challenges remain. The foremost is expanding the capacity of existing systems to ensure equitable access, while maintaining quality and relevance. This requires robust linkages between industry and training institutes, along with continuous professional development for trainers. Additionally, convergence between school education and government-led skill initiatives must be strengthened and aligned with the Labour Market Information System (LMIS). Other pressing needs include the creation of institutional mechanisms for research and development, quality assurance, examinations, certification, affiliation, and accreditation. Ultimately,

skill development must be made both attractive and productive to inspire youth participation. Motivating young people to view skilling as a pathway to social mobility, employability, and entrepreneurship will be critical to leveraging India's demographic advantage.

## 1.13 Conclusion

Skill development is one of the essential ingredients for India's future economic growth as the country transforms into a diversified and internationally competitive economy. Skills and knowledge are the key drivers of both economic growth and social development. Countries with higher levels of skills and better-quality training are able to adjust more effectively to the challenges and opportunities of the modern world of work. In India's growth story, skill development is emerging as a defining element. To harness this potential, two major shifts are required. First, the relationship between education, employment, and skill development needs to be redefined. Second, given India's massive youth population, it is unrealistic to expect the conventional education framework alone to provide the required upskilling.

The target group for skill development must include all segments of the labour force: fresh entrants, those already employed in the organized sector, and the vast majority working in the unorganized sector. Current skilling capacity stands at just 3.1 million annually, while India had set a target of skilling 500 million people by 2022.

Central and state governments, particularly through the Ministry of Rural Development, have initiated a range of schemes to train youth and enable them to access better employment opportunities. In November 2014, the Ministry of Skill Development and Entrepreneurship was established to drive the 'Skill India' agenda in a mission mode. Funding allocations under the National Skill Development Fund (NSDF) have consistently increased to support these efforts. Flagship initiatives such as *Startup India*, *Stand-up India*, *Pradhan Mantri Kaushal Vikas Yojana*, and *Aajeevika* have also been launched, underscoring the need to promote rural entrepreneurship. Rural entrepreneurship is especially significant as it not only generates employment for migrating youth but also brings prosperity back to the villages, thereby strengthening the rural economy. Despite these efforts, several challenges persist. Expanding the capacity of existing skilling systems while ensuring equitable access, quality, and relevance remains a formidable task. This requires robust linkages between industry and training institutes, supported by continuous knowledge upgrading for trainers. Stronger convergence between school education and government-led skilling programmes must also be fostered and aligned with

Labour Market Information Systems (LMIS). Furthermore, institutional mechanisms for research, development, quality assurance, examinations, certification, affiliation, and accreditation need to be reinforced. Above all, skill development must be made attractive and productive, motivating young people to actively aspire for it.

There is also a pressing need to create an environment where lifelong learning becomes appealing, accessible, and sustainable. Achieving this requires innovative, flexible solutions that move beyond traditional approaches. This includes scaling up online opportunities, leveraging existing schemes and employment infrastructures, and introducing programmes that focus on "taking learning to the people." Shorter, modular courses that learners can access anytime and anywhere would better suit diverse lifestyles and help bridge skill gaps quickly. Now more than ever, India must focus on reskilling and lifelong learning. While the current policy frameworks provide a foundation, what is needed is a long-term, future-ready plan that addresses unemployment, skills shortages, and productivity challenges. By investing in lifelong learning and rural entrepreneurship, India can not only meet domestic needs but also position itself as a global hub for skilled talent.

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# Building an Inclusive Society with a Gender-Sensitive Approach through Adult Learning Education

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## Abstract

The paper deals with gender discourse in the adult learning approach by examining intersectional identities based on gender issues. The study is conducted through the lens of relevant critical social theory, i.e., the intersectionality approach in gender discourse, to examine the ALE perspective in detail. However, the paper shifts to the author's own autobiographical experience in both personal and professional life, explaining his experiences, aspirations, and further approach to making it a revolutionary concept in the field of Adult and Lifelong Learning discourse. Finally, the empirical evidence collected through literature research, along with the author's personal and professional experiences in the field of Adult Learning and Education, successfully addresses the central research question: How does a gender-sensitive approach in Adult Learning and Education play an effective role in an individual's personal and professional life? An auto-ethnographic inquiry.

**Keywords:** *Gender, adult learning and education, intersectionality.*

## Introduction

The gender-sensitive approach deals with the awareness of the different types of gender roles played by an individual in society. However, there have been various schools of thought in defining gender and its functioning in society. In contemporary times, gender has become a much more advanced idea, going beyond men and women, and is defining itself broadly under the performative acts of other dimensions like LGBTQ(I), masculinity, and its different types. However, through this paper, we are going to deal with the gender-sensitive approach in Adult Education, i.e., talking about the inclusive approach of gender in providing easy access to learning to all genders for building an inclusive society. Since it is an accepted fact that society has been specifically man-centered in all its aspects, so is education in terms of participation, practice, and research. Therefore, there is a need to bring the gender

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dimension of learning into the core areas of education, with attempts to bring those people to the mainstream realm of societies through adult learning and sensitization. The study has been done in two parts.

The first part deals with all kinds of gender-related theories. It addresses the debates related to sex, gender, femininity, masculinity, and heteronormativity by going through various literature reviews. These theories are correlated with their contribution to Adult Learning and Education. The second part deals with the individual approach to applying a sensitive approach in his professional career.

Gender sensitization has been a core issue in making a gender-sensitive approach to Adult Education by addressing the unique needs, challenges, and opportunities of learners according to their gender (UNESCO Toolkit, 2007–2008). This approach aims to promote a supportive learning environment for learners, irrespective of the gender they belong to. The idea behind reading is to understand the gender dynamics addressed by various methods, such as inclusive curricula, which advocate an inclusive approach and represent diverse gender identities in their content. It also provides flexibility in its learning approach, where adult learners find themselves comfortable in choosing the appropriate time for learning and can be accommodated under various schedules and commitments, especially when gender constraints come as an obstacle in their learning objectives. Finally, this paper will talk about the gender-sensitive approach in the professional practice of an individual, which will be based largely on personal views and will be very contextual as well. The study is focused on finding the answer to the research question: *How can a gender-sensitive approach in Adult Learning and Education play an effective role in an individual's personal and professional life?*

## Literature Review

### What is a Gender-Sensitive Approach?

The gender-sensitive approach can be debated under the framework of sex, gender, femininity, masculinity, and heteronormativity as its core areas. For gender discussion, there has been a strong feminist voice engaged in activism on the ground. Feminist theory has often been critical of naturalistic explanations of sexuality that assume the meaning of women's social existence can be derived from some fact of their physiology (Butler, 1988). In differentiating sex from gender, feminist theorists have debated causal explanations that assume sex dictates or necessitates certain social meanings for women's experiences. Gender theorists like Simone de Beauvoir, in her text *The Second Sex* (1949), clearly expressed the concept of women as a historical idea and not a natural fact, with the famous quote: *"One is not born, but becomes a woman."* She highlighted the distinction, referring to sex as a biological construct and gender as a social construct.

## The Feminist Movement and Differences Among Them

The feminist movement can be traced back to the 19th and 20th centuries throughout the Western world. The main focus of this movement had been on legal issues, primarily securing women's right to vote. The movement was an outcome of Western Enlightenment thought applied to women's argument for the right to freedom, personal independence, achievement through merit, and equal opportunity. Many feminist authors such as Wollstonecraft, Taylor, J. S. Mill, and Stanton were key liberal feminists who contributed to the feminist voice by advocating various "ways of being women." Alison Jaggar, in Loretta Kensinger's *Liberal Quest of Feminism* (1997), described the main thrust of the liberal feminist argument: that an individual woman should be able to determine her social role with as much freedom as a man. It traditionally saw a need for a division of human endeavours into public and private spheres. In the public sphere, the goals of reason (for example, the discovery of what is morally good and what the individual's self-interest is) were the most prevalent aspects of these feminist movements. Women, in this view, could be liberated when the constraints on their ability to partake in activities in the public realm were removed and their civil rights were guaranteed (1977, pp. 6–7).

With social change, feminist theory also evolved. Radical feminism and socialist feminism emerged, whose achievements respectively included U.S. state legislation's revelation of abortion law in 1969 and the concept of "Nine to Five" at the workplace as a legal right, including family leave (Echols, 1989). However, it is clear that in all these movements the authors focused largely on white women and neglected the oppression of Black women, i.e., "women of colour," by white women.

## Role of Feminist Theories and Movements in Adult Learning, Education, Research and Practice

As quoted by Walker and Butterwick in Simoes, Amaral, and Santos (2021): *"A growing field of adult education is addressing social movements as an important site of learning, since it has a long tradition that goes back to decades of struggles for equality and social justice."* It is within this context of "feminist consciousness-raising circles" that women learn from each other about civic education, such as human rights, gender equality, and social justice. In content, this means learning about various women's movements and women activists, both from today and from the past. In process, it involves paying conscious attention to the types of learning we undergo through involvement in social movements—feminist and otherwise—that privilege both informal learning more generally, and embodied, experiential, affective, and artistic ways of knowing, learning, and teaching more

specifically. These are often divided into theoretical categories—most commonly liberal, radical, and socialist feminism—and expand to Marxist, psychoanalytical, or women of colour feminism, depending on the context.

## Masculinity and Various Debates

Masculinity is another performative act of gender, since it is an accepted social belief that men are strong and emotionally tough. However, the reality is that men are often more emotionally vulnerable because they repress their feelings and emotions in performing their gender roles. Mental illness among men in the community is more stigmatized and constructed as a feminized illness. Such stereotypes have serious implications on men's mental health due to socially accepted values, with different consequences for different groups. However, a new trend in expressing masculinity in a positive way argues for enacting masculinity differently. Traditionally, men were stereotyped as inexpressive toward their emotions or reluctant to seek help. Scholars have challenged this notion, showing that men can be expressive when asked privately and often reveal their emotions insightfully.

According to Connell (1995), masculinities have two key ideas: (1) *pluralist masculinity*, which encompasses the diversity of masculine practices, including "positive masculinity," and (2) *hegemonic masculinity*, the Gramscian concept of "hegemony," which carries the burden of an honoured way of being a man. It exerts power over subordinate and marginalized masculinities, imposing social penalties on men who deviate from expectations.

The recent trend of positive masculinity has attempted to alter older notions and define new forms of masculinity with benign aspects that win the consent of subaltern groups. Positive masculinity redefines itself by promoting a psychology of men who behave more constructively, fostering positive life changes that benefit themselves and those around them. Thus, more can be expected of men than suggested by pessimistic discourses that present masculinity as a "risk factor."

## The Role of Masculinity Theories in Adult Learning, Research and Practice

To understand the role of masculinity, it is necessary to consider Burke's (2007) research on masculinity and learning in higher education. Burke highlighted the issue of masculinity and access to higher education through wider participation. Since masculinities are shaped through earlier school experiences, Burke examined the shifting roles of masculinities as men accessed higher education, particularly through self-disciplining and self-regulating. The ESRC-funded study involved 38 men who

aspired to become undergraduate students through alternative entry courses in London. They were interviewed about how personal histories and memories shaped their masculine self as students. The findings showed that bullying was central to belonging, especially among working-class students, as it served as a defense mechanism to mask their class and play masculine roles within a larger consciousness. One participant regretted past actions, seeing higher education as a remedial tool to amend mistakes. When asked about academic performance, he admitted he was intelligent but also "lazy." This reflects masculinity operating as a defense—using laziness as a pretext to hide academic incompetence.

Another participant described being bullied for his physical appearance ("very big" and wearing glasses), which he saw as a reason to be targeted in a society that valorised machismo. He later embraced neoliberal discourses of personal responsibility, seeing success as a matter of determination, hard work, and discipline. This connects with positive masculinity, which focuses on improving oneself in ways that benefit others. Another participant described changing himself by adopting feminized behaviours such as calming down, being quiet, and fading into the background to fit into higher education contexts. These examples highlight how men regulate their gendered identities within the context of the privilege masculinity continues to hold over femininity. For example, one student described moving from being a popular class clown to a sporty, intelligent guy, distancing himself from marginalized identities without perceiving a "masculinity crisis." Thus, the notion of a masculinity crisis is challenged, as men's participation in higher education must be understood within shifting, interconnected identity formations. The "crisis of masculinity" narrative risks homogenizing boys and men, ignoring the discursive production of the ideal student subject.

## Methodology

This study employed a sequential explanatory mixed-methods design, integrating qualitative and autobiographical approaches to produce robust, multi-layered findings.

## Sampling Strategy

Thematic analysis (Braun & Clarke style) with an explicit intersectional coding framework—coding for gender, class, caste/ethnicity, rural/urban, age, and sexuality—was used to derive the findings of the study. For the qualitative component, secondary literature was analyzed and interpreted to arrive at clear findings.

## LGBTQ - Similarities and Differences

Moving towards the developments in LGBTQ debates, these refer to the discussions centered on their rights, representation, and acceptance in society. These debates often touch upon various topics, including marriage equality, transgender rights, effective learning, healthcare access, and the holistic development of LGBTQ people. However, there has been an intragroup power relationship between LGBT and Queer. The primary goal of lesbian and gay studies has been *"to express and advance the interests of lesbians, bisexuals, and gay men, and to contribute culturally and intellectually to the contemporary lesbian/gay movement"*, which can be traced from the 1960s. Queer theory, in contrast, builds on the critique of heteronormativity and emphasizes multiple ways of being gay, lesbian, or otherwise identifying. In terms of commonalities, both LGBT studies and Queer theory are modes of inquiry whose focal points are gender and sexuality. Both are linked to significant social movements of the mid- to late-20th century, particularly the second wave of feminism and the gay liberation movement. Both have made extensive use of qualitative approaches to explore how meanings are subjectively constructed. Both seek to link research with politics and liberate sexual and gender minorities from oppressive forms of heteronormativity and prejudice.

In terms of differences, LGBT studies are rooted in modernist ideas emerging in the 1960s, whereas Queer theory is a postmodern framework that gained prominence in the 1990s. Queer theory argues that gender and sexual identity are fluid, flexible, and socially constructed, rejecting fixed binaries. It also critiques structures and institutions that normalize and privilege heterosexuality. Historically, gender discourse has been confined to a male/female binary, ignoring intersectional categories such as transgender, intersex, and non-heterosexual identities. The acronym LGBTQ(I) - Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex - needs to be understood within the framework of Affective Sexual ALE (Adult Learning and Education). Sexuality education aims to construct an explanatory model of human sexuality that is critical, open, and continuously evolving. Building sexual knowledge is part of personal, affective, and social development, helping individuals understand themselves, others, and their cultural context.

Barragán (1996) explained three models of sexuality education: the *moral model*, rooted in Judeo-Christian traditions, which views non-reproductive sexuality as sinful; the *preventive or health model*, which medicalizes sexuality (see Foucault, 1980); and the *integrative model* (López, 2005), which takes a broad, holistic view of sexuality as vital to human life. A study of 25 educational interventions on discrimination among older LGBTQ(I) adults revealed that 17 participants aligned with the integrative model, 8 with the preventive model, and none with the moral

model. Despite progress, gender stereotypes persisted, with LGBTQ individuals often excluded from affective sexual education due to society's abnormalizing outlook toward them.

## Intersectionality as a Critical Social Theory and its Importance to Adult Learning

Intersectionality emerged in the late 1980s and early 1990s from critical race studies, a movement in the legal academy that critiqued law's claims of neutrality and objectivity (Nash, 1988). Intersectionality plays a central role in exposing identity politics, which often obscure intragroup differences, such as those within feminist movements. According to Nash, scrutinizing intersectionality is essential for both feminist and anti-racist theorists to avoid the pitfalls of narrow theorizing.

In adult education, intersectionality highlights gender as a core lens for interpreting reality (Bem, 1993). Feminist scholars in Europe challenged male dominance in academia by using biographical methods and emphasizing women's lives in adult education contexts such as community education, higher education, and the labour market. The intersectional approach has also exposed differences within feminism itself, for example, between white women and women of colour. The role of intersectionality in adult education is to advance social justice for marginalized groups by identifying structures of oppression and disadvantage. Feminist intersectional analysis, as reflected in *European Journal for Research on the Education and Learning of Adults* (2021), emphasizes centering women and other marginalized groups in policy and practice to ensure inclusion.

Different countries have adopted varied analytical tools: Europe often uses additive or multiple discrimination frameworks, while Canada employs Gender-Based Analysis Plus (GBA+) to assess the gendered impact of policies and programs. The Finnish *Journal of Adult Education* incorporates inter-categorical approaches, blending intersectional theories and pedagogy. Such frameworks highlight inequalities and guide practices to minimize exclusion.

## Findings

Since this topic is personal, I remain objective in reflecting on how an intersectional, gender-sensitive approach can inform my professional future. Currently, as a PhD researcher in Adult Education, I see myself as a future academician and practitioner, working as an educator, researcher, and policy contributor. Gender participation in higher education, particularly adult learning, remains minimal. As an academic, my first role will be to integrate gender-sensitive approaches into my writing and research. In India, the sexually marginalized - particularly LGBTQ(I)

communities - remain excluded from higher education due to stigma. As an adult educator, I envision sensitizing society through various platforms, including social media, to challenge stereotypes and promote affective sexual awareness. As a learner, I remain engaged with literature on adult education and gender to understand changing dynamics. As a practitioner, I believe gender learning begins at home.

Practicing empathy, creating equal spaces, and challenging patriarchal norms within families can extend to broader social change. India, where 70% of the population lives in rural areas and patriarchal norms remain entrenched, needs strong feminist movements to disrupt gendered roles. Adult learning can play a vital role in increasing women's participation in higher education and mainstream society. In my future, I aim to contribute to policies on Adult and Lifelong Learning with gender, sex, and intersectionality as central priorities. I see adult education as a movement that can promote civic education, active citizenship, and social justice. In India, women's participation in politics remains minimal despite quotas at local levels, where many women representatives remain under male control. There is a need to sensitize women about their political rights as part of civic education. For LGBTQ(I) communities, homosexuality was decriminalized in India only in 2018, yet social acceptance remains low. Affirmative action and political representation can be crucial steps toward inclusivity.

## Conclusion

This paper examined debates around gender through theoretical concepts of sex, gender, femininity, masculinity, and LGBTQ(I), in relation to Adult Learning and Education. It highlighted how gender-sensitive approaches can break stereotypes and reshape learning systems. Feminist movements and masculinity studies demonstrate how adult learning fosters reflection, self-discipline, and personal growth. Affective Sexual ALE offers a deeper understanding of LGBTQ(I) identities within learning contexts. The intersectional approach proved effective in exposing identity politics and emphasizing inclusivity. The auto-ethnographic dimension of this paper further demonstrated how gender-sensitive practices influence both personal and professional perspectives. Ultimately, the study suggests that practicing gender sensitivity - from family life to professional and political spheres - can create broader social change and inclusion in adult education.

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# State and Central Governance in Telangana's Education Sector: A Dual Approach

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## Abstract

This case study examines the current education system in Telangana State, highlighting its structure, challenges and opportunities for improvement. With a focus on primary, secondary and higher education, the analysis addresses key issues such as enrollment rates, quality of education, infrastructural deficits and disparities in access among different demographic groups. Additionally, the study explores recent policy initiatives aimed at enhancing educational outcomes and fostering inclusivity. By employing qualitative and quantitative data, this research aims to identify critical factors influencing educational equity and access in Telangana, offering insights into potential reforms that could lead to a more robust and equitable educational landscape. The findings underscore the need for a collaborative approach involving government, educational institutions and community stakeholders to drive sustainable improvements in the education system. Telangana's education system has undergone significant transformations in recent years, with a focus on improving accessibility, quality and equity. While notable progress has been made, challenges persist, particularly in rural areas and marginalized communities. Despite significant strides made since its formation, the State continues to grapple with issues such as infrastructural deficits, teacher shortages, and disparities in educational outcomes.

**Keywords:** *Education policy, education reforms, educational institutions, teacher quality, student performance, access to education, equity in education, digital education, vocational training.*

## Introduction

The education landscape of Telangana State has undergone significant transformation since its formation in 2014. As one of India's youngest states, Telangana

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faces a unique set of challenges and opportunities that shape its educational framework. With a commitment to enhancing educational access and quality, the state government has implemented various initiatives aimed at improving enrolment rates, especially among marginalized communities. Despite these efforts, numerous challenges persist. Issues such as inadequate infrastructure, teacher shortages, and disparities in educational quality between urban and rural areas continue to hinder progress. Additionally, socioeconomic factors play a crucial role in determining educational outcomes, often leaving the most vulnerable populations at a disadvantage. This study seeks to provide a comprehensive overview of the current state of education in Telangana, analyzing the existing challenges while also highlighting the opportunities for growth and reform. By examining recent policy initiatives, community involvement, and innovative educational practices, this research aims to offer valuable insights into how Telangana can advance its educational agenda to ensure equitable access and high-quality learning for all its citizens.

Telangana became the 29th state of India, separated from undivided Andhra Pradesh, on 2 June 2014. It has a geographical area of 1,14,840 sq. km with a population of 3,51,93,978 (2011 Census). It is the 12th largest state in the country in terms of both area and size of population. The state is bordered by Maharashtra and Chhattisgarh to the north, Karnataka to the west, and Andhra Pradesh to the south and the east. The population growth rate has decreased from 18.77% in the previous decade to 13.58% during 2001–11. Only 38.88% of Telangana's population resides in urban areas. However, the urban population has grown by 38.12% during 2001–11, as compared with 25.13% in the previous decade. Hyderabad accounts for around 30% of the total urban population in the state (Government of Telangana, 2016a). Of the total population of the state, Scheduled Castes (SC) constitute 15.44% and Scheduled Tribes (ST) 9.34%. The sex ratio is 988, which is better than the national sex ratio of 943. However, the sex ratio for children declined from 957 in 2001 to 933 in 2011, which is a matter for concern.

**Economic context:** The advance estimate for the Gross State Domestic Product (GSDP) of Telangana for 2015–16 was Rs. 4.69 lakh crore. The GSDP of Telangana for 2016–17 is estimated at Rs. 6,70,756 crores. Average growth of Telangana's economy at constant prices declined from 9.1% in 2005–10 to 5.7% in 2010–15 (PRS, 2016). The share of expenditure on the social sector comprised almost 60% of the total expenditure in Telangana during 2010–13. Out of this, expenditure on education was more than 40% in all the districts across Telangana except Rangareddy, where it was 32% (Centre for Economic and Social Studies, 2015).

The Human Development Index (HDI) of Telangana rose from 0.343 in 2004–05 to 0.513 in 2010–11, thus improving its rank in India from 13 to 10. The projected HDI for 2015–16 is 0.663 (Government of Telangana, 2016a). Telangana's progress in achieving developmental goals and the initiatives by the state government are as follows:

**Poverty and Hunger:** The State has been successful in reducing poverty levels from 44.2 percent in 1993–94 to 8.8 percent in 2011–12. However, malnutrition among children remains a challenge. *Mission Kakatiya* is a flagship programme under which all water bodies will be revived in a phased manner to develop agriculture and reduce rural poverty. The state government has introduced the *Aasara* pension scheme covering widows, weavers, toddy tappers, old persons, and AIDS patients, as well as a scheme to provide monthly financial assistance to beedi workers. The government is providing financial assistance of Rs. 51,000 to needy SC, ST, and minority community single girls under the *Kalyana Lakshmi* and *Shaadi Mubarak* schemes (Government of Telangana, 2016a).

## The Education Sector- Universal Primary Education

100% Net Enrollment Rate is envisioned to be achieved by 2017. The State has achieved universalization of primary education, but universal access to education is a bigger problem as children belonging to tribal communities, migrating communities and homeless children are still unable to avail free education. In order to improve the educational standards of the minority communities, the state government has proposed to start 70 new residential schools throughout the state (Government of Telangana, 2016a). According to Census 2011, the literacy rate of Telangana is 66.5% which places Telangana at 35$^{th}$ position among the 36 states and union territories (UTs) in India, just above Bihar. The female literacy rate (57.99%) is lower than the national average of 65.5 and much lower than the male literacy rate (75.04%).

The present-day education system in India has come a long way, and the age-old traditions have undergone a new makeover. The Government of India is making significant efforts in this field so that the objective of inclusive growth can be achieved soon. A great achievement of the Indian government is the substantial increase in the literacy rate from 18.3% in 1950–51 to 74.04% in 2010–11. Such an achievement is the result of sustained efforts by the Indian government in the education sector. The government is improving the country's education status to enhance the standard of living of the people and also to achieve other goals such as overcoming the problems of poverty and unemployment, promoting social equality, ensuring equal income distribution, etc.

**Table 1: Percentage of Schools by Management Type**

| Management Type | Percentage of Schools | |
|---|---|---|
| | **Telangana** | **India** |
| Department of Education | 8.95 | 34.21 |
| Tribal or social welfare department | 4.1 | 2.89 |
| Local body | 36.24 | 4.48 |
| Private aided | 2.57 | 16.68 |
| Private unaided | 47.44 | 38.84 |
| Other government managements | 0.07 | 0.29 |
| Central government | 0.3 | 0.90 |
| Unrecognized | 0.25 | 1.06 |
| Madrasa recognized | 0 | 0.43 |
| Madrasa unrecognized | 0.08 | 0.20 |

Source: Compiled from U-DISE Flash statistics

Education contributes to the individual's well-being as well as the overall development of the country. Education is not only an instrument of enhancing efficiency but also an effective tool for widening and augmenting democratic participation and upgrading the overall quality of individual and societal life (Goel, 2008). Thus, the importance of education can't be ignored. The number of girls studying in urban schools is greater than that of boys, but in rural schools, the enrolment of boys is higher than that of girls. Overall, enrolment in rural areas is greater than in urban areas.

**Table 2: Enrolment by Gender and School Location**

| School Location | Boys | Girls | Total |
|---|---|---|---|
| Rural | 4,69,946 | 4,60,522 | 9,30,468 |
| Urban | 3,83,740 | 3,88,548 | 7,72,288 |
| | | | 17,02,756 |

Source: Compiled from U-DISE Flash statistics

Enrolment in schools by school management type (classes 9–12): The enrolment of boys and girls by school management type, presented in Table 3, reveals an interesting fact. Girls constitute almost 60.5% of the total students in private aided

schools while in government and private unaided schools, they form only 48% and 47% of the student population, respectively.

**Table 3: Enrolment by School Management Type (Classes 9–12)**

| School Management | Boys | Girls |
|---|---|---|
| State government | 92,286 | 86,910 |
| Private aided | 14,746 | 22,536 |
| Private unaided | 4,89,214 | 4,39,692 |

Source: Compiled from U-DISE Flash statistics

**Table 4: Number of Teachers by Academic Qualification**

| Qualification | Regular Teachers | Contractual Teachers |
|---|---|---|
| Below graduate | 2,767 | 4,06 |
| Graduate | 23,588 | 2,781 |
| Postgraduate | 33,113 | 5,387 |
| M.Phil. | 820 | 88 |
| Ph.D., postdoctoral | 0 | 0 |
| Sub-total | 60,288 | 8,662 |
| Overall total | 68950 | |
| Note: This data excludes para teachers. | | |

*Source: Compiled from U-DISE Flash statistics*

## Education boards and examinations

There are three state education boards in Telangana for school education:

1) Telangana State Board of Secondary Education
2) Telangana State Board of Intermediate Education
3) Telangana Open School Society

The Directorate of Government Examinations is an independent department functioning under the Department of Secondary Education, Government of Telangana. The Department is responsible for conducting the SSC and OSSC public examinations. The Telangana State Board of Intermediate Education conducts examination at the intermediate level. Apart from these, the Central Board of

Secondary Education (CBSE) has affiliated to it, all Kendriya Vidyalayas, all Jawahar Navodaya Vidyalayas, private schools and most schools approved by the central government of India. CBSE also conducts the final examinations for grades 10 and 12 in March every year for CBSE-affiliated schools. The Council for the Indian School Certificate Examinations also conducts Indian Certificate of Secondary Education (ICSE) and the Indian School Certificate examinations for grades 10 and 12 respectively for its affiliated schools.

## School Education

During 2013-14, there were 43,293 schools in the State of which 25,331 were exclusively primary schools, 6883 exclusively upper primary schools, 123 schools having primary with upper primary, secondary and higher secondary, 202 schools with upper primary secondary/ higher secondary classes, 817 schools were run with primary along with upper primary and secondary classes and 9937 schools having upper primary and secondary classes. Teacher pupil ratios for primary, upper primary and high school categories as of 2013-14 for the State stand at 29, 24 and 24 respectively.

**Table 5: Enrolment of Children in Schools**

| Years | Pre Primary | Classes I-V | Classes VI-VII | Classes VIII-X | Classes XI-XII | Total |
|---|---|---|---|---|---|---|
| 2004-05 | 217362 | 3577528 | 1180486 | 1297082 | 4171 | 6276629 |
| 2005-06 | 323621 | 3436306 | 1256075 | 1393142 | 4079 | 6413223 |
| 2006-07 | 423452 | 3442831 | 1278285 | 1466126 | 3680 | 3314374 |
| 2007-08 | 419329 | 3358789 | 1236830 | 1541091 | 4035 | 6560074 |
| 2008-09 | 426829 | 3332610 | 1193274 | 1588178 | 4608 | 6545498 |
| 2009-10 | 255699 | 3328545 | 1154606 | 1583438 | 11023 | 6333311 |
| 2010-11 | 231939 | 3297475 | 1169852 | 1547789 | 8801 | 6255856 |
| 2011-12 | 225741 | 3256509 | 1195855 | 1544896 | 11063 | 6234064 |
| 2012-13 | 231107 | 3172977 | 1175147 | 1534496 | 15357 | 6129384 |
| 2013-14 | 183223 | 3206958 | 1738259 | 1025861 | 24194 | 6178495 |

Note: In 2013-14 enrolment is given for (VI-VIII) and (IX-X) classes instead of (VI-VII) and (VIII-X) classes. Source: Commissioner of School Education, Hyderabad.

**Table 6: School Dropout Rates**

| Years | Class I-V | | | Class I-VII | | | Class I-X | | |
|---|---|---|---|---|---|---|---|---|---|
| | Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| 2004-05 | 37.3 | 37.06 | 37.17 | 54.85 | 55.83 | 55.25 | 61.2 | 61.86 | 61.47 |
| 2005-06 | 30.37 | 30.17 | 30.27 | 53.5 | 54.41 | 53.93 | 61.4 | 62.06 | 61.69 |
| 2006-07 | 32.81 | 33.34 | 33.08 | 43.38 | 44.29 | 43.82 | 63.03 | 63.56 | 63.28 |
| 2007-08 | 26.19 | 25.28 | 25.75 | 36.79 | 37.66 | 37.22 | 65.24 | 65.31 | 65.27 |
| 2008-09 | 23.74 | 22.82 | 23.29 | 39.29 | 40.2 | 39.74 | 64.59 | 64.68 | 64.63 |
| 2009-10 | 23.45 | 22.09 | 22.79 | 31.95 | 31.59 | 31.78 | 55.9 | 56.76 | 56.33 |
| 2010-11 | 25.61 | 24.2 | 24.92 | 29.39 | 28.06 | 28.75 | 48.65 | 47.77 | 48.22 |
| 2011-12 | 24.28 | 23.23 | 23.77 | 28.11 | 25.3 | 26.74 | 49.42 | 49.11 | 49.27 |
| 2012-13 | 24.28 | 24.56 | 24.42 | 33.98 | 31.35 | 32.69 | 42.71 | 41.59 | 42.16 |
| 2013-14 | 22.6 | 22.02 | 22.32 | 33.72 | 31.34 | 32.56 | 39.05 | 37.33 | 38.21 |

Note: From 2012-13 dropout rate is given for I-VIII classes instead of I-VII classes
Source: Commissioner of School Education, Hyderabad.

## Intermediate Education

**Table 7: Junior Colleges Functioning Category of Management**

| S.N. | Category | No. of Colleges |
|---|---|---|
| 1 | Government Junior Colleges | 399 |
| 2 | Govt. Model Schools | 192 |
| 3 | Private Aided Junior Colleges | 43 |
| 4 | Private Aided Composite Degree Colleges offering Intermediate | 27 |
| 5 | Private Un-Aided Junior Colleges | 1608 |
| 6 | Exclusively Vocational Junior Colleges (Private) | 407 |
| 7 | Exclusively Vocational Junior Colleges (Govt.) | 4 |
| 8 | Incentive Junior Colleges | 92 |
| 9 | Other (APRJC, GOI, Social Welfare, Tribal Welfare, Railways) | 205 |
| | Total | 2977 |

Source: Director of Intermediate Education

There are 399 government junior colleges, 4 government vocational junior colleges and 192 government model schools functioning under the administrative control of

the Director of Intermediate Education. The functioning of 43 private aided junior colleges with regard to the grant-in-aid, service conditions and academic matters for all practical purposes are being looked after by Director of Intermediate Education. Besides the government sector, there are 1608 private un-aided junior colleges functioning in the State. The status of junior colleges functioning under various managements is shown in the Table 7.

Conventional courses in Science, Arts, and Commerce, along with vocational courses, are being offered. A total of 29 vocational courses are available across 777 junior colleges in fields such as Engineering & Technology, Agriculture, Home Science, Para-medical, Business & Commerce, and Humanities. In addition to 411 exclusive private and government vocational junior colleges, another 366 junior colleges (both government and private) also offer vocational courses. The enrolment of students in both conventional and vocational streams is provided below:

**Table 8: Enrolment during 2013-14 in Junior Colleges**

| Management Type | General | Vocational | Total |
|---|---|---|---|
| Govt. | 92585 | 24883 | 116468 |
| Pvt. Aided | 7837 | 389 | 8226 |
| Pvt. Unaided | 315608 | 5012 | 320620 |
| Total | 415030 | 30284 | 445314 |

## Collegiate Education

The Collegiate Education department monitors the administrative functions and academic quality in 126 government degree colleges and 69 aided colleges, with an enrolment of 91,966 and 58,291 students respectively in the State. The Government of India introduced the concept of Model Degree Colleges covering 374 districts in the country through the XI Five Year Plan, based on the low Gross Enrolment Ratio in Higher Education. The assistance from the MHRD, Government of India, under RUSA is 65%, and 35% has to be borne by the Government of Telangana.

## Table 9: Details of Universities in Telangana State

| University | Location | Type | Established | Specialization |
|---|---|---|---|---|
| University of Hyderabad | Hyderabad | Central | 1974 | General |
| Telangana University | Nizamabad | State | 2006 | General |
| Sri Konda Laxman Telangana State Horticultural University | Hyderabad | State | 2014 | Horticulture |
| Satavahana University | Karimnagar | State | 2006 | General |
| Woxsen University | Hyderabad | Private | 2014 | General |
| SR University | Warangal | Private | 2002 | General |
| Rajiv Gandhi University of Knowledge Technologies | Basar, Telangana | State | 2008 | Technical |
| Potti Sreeramulu Telugu University | Hyderabad | State | 1985 | Cultural |
| Professor Jayashankar Telangana State Agricultural University | Hyderabad | State | 2014 | Agricultural |
| Palamuru University | Mahbubnagar | State | 2008 | General |
| Osmania University | Hyderabad | State | 1918 | General |
| Nizam's Institute of Medical Sciences | Hyderabad | State | 1989 | Medical |
| P. V. Narasimha Rao Telangana Veterinary University | Hyderabad | State | 2014 | Veterinary |
| Mahindra University | Hyderabad | Private | 2020 | General |
| Nalsar University of Law | Hyderabad | State | 1998 | Law |
| Mahatma Gandhi University, Nalgonda | Nalgonda | State | 2007 | General |
| Kaloji Narayana Rao University of Health Sciences | Warangal | State | 2014 | Health care |
| Maulana Azad National Urdu University | Hyderabad | Central | 1998 | Language |
| Malla Reddy University | Hyderabad | Private | 2020 | General |
| Kakatiya University | Warangal | State | 1976 | General |
| Jawaharlal Nehru Technological University | Hyderabad | State | 1972 | General |
| English and Foreign Languages University | Hyderabad | Central | 1958 (2007) | Language |
| Institute of Chartered Financial Analysts of India | Hyderabad | Deemed | 1984 | General |
| Jawaharlal Nehru Architecture and Fine Arts University | Hyderabad | State | 2008 | Architecture and Fine Arts |
| Chaitanya Deemed to be University | Warangal | Deemed | 1991 (2019) | UG,PG, Engg, Pharmacy |
| Dr. B. R. Ambedkar Open University | Hyderabad | State | 1982 | General |
| Anurag University | Hyderabad | Private | 2002 | General |
| International Institute of Information Technology | Hyderabad | Deemed | 1998 | Technical |

Source: https://www.tgche.ac.in/

## Professional/Technical Education

The Technical Education Department is responsible for the development of technical education both at degree (Graduate and Post Graduate in Professional Courses) as well as diploma level (Technicians). The Department implements the policies of the Government of Telangana and also coordinates with All India Council for Technical Education (AICTE) in processing the applications for the establishment of Engineering Colleges, M.B.A., M.C.A., B. Pharmacy and Polytechnics and enhancement of sanctioned intake, introduction of new courses etc.,. The Department manages the government polytechnics and monitors the private unaided polytechnics and professional colleges.

**Table 10: Professional Colleges in Telangana**

| **Particulars** | **No.** |
|---|---|
| Engineering Colleges | 336 |
| Government Engineering Colleges | 17 |
| Medical Colleges | 17 |
| MCA Colleges | 197 |
| MBA Colleges | 496 |
| Education Colleges | 225 |
| Pharmacy Colleges | 168 |
| Law Colleges | 18 |

Source:http://www.apcollegeadmissions.com/2014/06/universities-and-colleges-in-telangana.html

## Linking State Government Initiatives with National Educational Goals: A Need for Cooperative Federalism in Education

Education in India is a subject under the Concurrent List of the Constitution, which means both the Centre and the states are empowered to legislate and govern on matters related to education. This dual authority is rooted in the belief that while national educational goals ensure standardization, states must retain flexibility to address local needs, diversity, and contexts. However, this shared responsibility has often led to fragmented implementation and policy misalignment between the Centre and the states. Therefore, there is an urgent need to establish stronger linkages between state governments' educational initiatives and national frameworks to ensure

synergy, efficiency, and equity. Over the years, the Central Government has launched a series of landmark education reforms and policies, such as the Right to Education (RTE) Act, National Education Policy (NEP) 2020, and flagship programmes like Samagra Shiksha Abhiyan. These initiatives aim to create a unified and inclusive education system across the country. However, the success of these initiatives largely depends on how effectively states interpret, adapt, and implement them on the ground.

State governments play a crucial role in school education, as they manage most of the public schools, recruit teachers, design state-level curricula, and allocate funds for educational infrastructure. Some states, like Kerala, Tamil Nadu, and Himachal Pradesh, have developed successful models of education, demonstrating how state-led innovations can significantly improve learning outcomes. Telangana's initiatives like *Mana Ooru Mana Badi* and *Digital Telangana* have focused on improving school infrastructure and digital access. Yet, these programmes often operate in isolation from national efforts, lacking a comprehensive framework for integration and mutual learning.

The National Education Policy 2020 presents an opportunity to bridge this gap. It provides a visionary roadmap that requires active state participation. For example, reforms such as mother-tongue-based early education, vocational training in schools, and holistic report cards require coordinated efforts. To implement these effectively, there must be institutional mechanisms for dialogue, planning, and collaboration between the Centre and states.

The concept of cooperative federalism must be applied more robustly in the education sector. Central schemes should allow flexibility for state-specific customization. Simultaneously, states should align their priorities with national goals, particularly in areas like foundational literacy and numeracy, teacher training, and digital learning. Technology can play a transformative role in this integration. Common digital platforms like DIKSHA and Shagun can be customized by states while feeding data and best practices into a national repository. Regular inter-state conferences, joint working groups, and shared funding mechanisms can further strengthen coordination. The concurrent status of education must not be seen as a point of conflict but as an opportunity for shared responsibility.

The future of India's education system lies in building bridges—between policy and practice, Centre and states, and innovation and tradition. A linked, cooperative approach will not only enhance educational outcomes but also strengthen the federal spirit enshrined in the Constitution.

## Governance Framework: State vs Central

At the State level, the Telangana Department of School Education (TSED) oversees primary and secondary schooling, while the Telangana State Council of Higher Education (TSCHE) and Telangana Higher Education Council (TGCHE) govern universities and colleges. Schemes such as the/ ***Mana Ooru Mana Badi***/ programme, residential institutions under TSWREIS and TTWREIS, and the online admission portal DOST are state-led. State universities face frequent administrative inertia and faculty shortages, with many lecturers still on contract and few full-time vice-chancellors in place until recently.

At the Central level, institutions like Kendriya Vidyalayas, Navodaya Vidyalayas, AIIMS, IIT, NIT, and central tribal universities (e.g., Sammakka Sarakka Central Tribal University launched in 2023) play significant roles in the higher education presence in Telangana. National schemes like Rashtriya Uchchatar Shiksha Abhiyan (RUSA) involve central funding routed through the state government to develop infrastructure and academic quality in higher education.

## Key Challenges

*a. Learning Crisis & Digital Divide*

Telangana schools are grappling with a deep learning deficit. ASER 2024 showed only 6.8% of third graders could read a second-grade level text, a sharp decline from 12.2% in 2014. Similar downward trends persist in math and among older learners. Furthermore, just 3.9% of schools recorded student computer use on observed days, and only 21.9% of government schools have internet connectivity - starkly below the national average of 46%.

*b. Infrastructure & Faculty Shortage*

Despite per-student spending of ¹ 55,000–¹ 60,000 annually (and over ¹ 1/ lakh for residential students), many government schools still lack basic toilets, labs, and infrastructure. Coupled with lingering teacher vacancies and universities relying on contractual faculty, quality remains compromised.

*c. Poor Employability*

A growing economy isn't yet matched by job readiness: Telangana records graduate unemployment of 15.8% and postgraduate unemployment at 17.6% - higher than national averages. A disconnect between curricula and industry needs is partly to blame.

## Emerging Opportunities & Reforms

*a. Skill-Centric Vision*

The government is pivoting toward a skill-centric education system. Curriculum now integrates vocational skills from Class VI, with around 30% skill-based subjects. Partnerships with industry (e.g., Tata Technologies upgrading 65 ITIs) and mandatory student/faculty internships are bridging academic–industry gaps.

*b. Infrastructure & Budget Prioritization*

Telangana increased its education budget by 11.5% in 2024–25 to [1] 21,292/ crore. It included earmarked funds for university infrastructure, teacher recruitment (over 11,000 vacancies), converting ITIs into advanced technology centres, and providing free electricity to schools.

*c. Social Welfare & Inclusivity*

Telangana continues to expand residential social welfare schools for marginalized communities - roughly six lakh students study in gurukuls under TSWREIS and TTWREIS. The State also offers scholarships (e.g., Ambedkar Overseas Vidya Nidhi) and multilingual, gender-inclusive policies to widen access.

*d. Research-Based Policy Support*

The Research Cell for Education Policy at CESS (launched by TSCHE) supports evidence-based policy across access, quality, equity, affordability, and accountability - feeding into governance decisions on reforms and public oversight.

Telangana's educational ecosystem straddles promise and pitfalls. Central and state authorities jointly oversee a complex array of institutions and schemes - from social welfare schools to central universities. Ongoing reforms in skills education, teacher training, infrastructure upgrades, and digital inclusion offer tangible momentum. But the learning crisis, digital access gaps, under-resourced classrooms, and mismatch between education and employability remain formidable barriers.

To fulfil its demographic and economic potential, Telangana must deepen implementation of NEP 2020 directives, ensure robust digital infrastructure, regularize university faculty, and cultivate stronger state–centre coordination - so that inclusive, quality education becomes a reality for millions.

## Exploring the Education Landscape in Telangana: A Snapshot

### Challenges:

1. **Quality of Education:** There's a significant disparity in the quality of education between urban and rural areas. Many rural schools lack adequate infrastructure and trained teachers.
2. **Dropout Rates:** High dropout rates, particularly among marginalized communities, hinder access to education. Socioeconomic factors often play a significant role.
3. **Access to Higher Education:** While enrollment in higher education has increased, access remains limited for certain demographics due to financial constraints and lack of awareness.
4. **Curriculum Relevance:** The curriculum often does not align with industry needs, leading to a skills mismatch among graduates.
5. **Digital Divide:** The transition to digital learning has highlighted the disparities in access to technology and internet connectivity, particularly in rural areas.

### Opportunities:

1. **Government Initiatives:** Programmes aimed at improving infrastructure, teacher training, and financial aid can enhance educational quality and accessibility.
2. **Skill Development Programmes:** Institutions like Young India Skill University are focusing on skill development, which can address employability issues among graduates.
3. **Public–Private Partnerships:** Collaborations between government and private sectors can bring in resources, innovation, and expertise to enhance educational outcomes.
4. **Focus on Inclusivity:** There's a growing emphasis on inclusive education policies that aim to support marginalized groups, which can help reduce dropout rates and improve access.
5. **Technological Advancements:** Leveraging technology for remote learning and resource sharing can help bridge educational gaps, especially in underserved areas.

## Conclusion

The education landscape in Telangana presents a complex interplay of challenges and opportunities. While issues such as access disparities, infrastructural deficits, and quality of education continue to hinder progress, there are significant opportunities

for reform and growth. Initiatives aimed at improving teacher training, leveraging technology for learning, and enhancing public–private partnerships can pave the way for a more equitable educational system.

By focusing on inclusive policies and community engagement, Telangana can harness its demographic potential, ensuring that all students receive a high-quality education that prepares them for the demands of a rapidly changing world. Addressing these challenges with strategic interventions will not only improve educational outcomes but also contribute to the state's broader socio-economic development. Telangana's education landscape is characterized by both significant progress and persistent challenges. While the state has made notable strides in expanding access to education and implementing innovative initiatives, it continues to face hurdles such as infrastructure deficits, teacher shortages, and disparities in educational outcomes. By addressing these challenges and capitalizing on the opportunities presented, Telangana can create a strong and equitable education system that empowers its citizens and drives socio-economic development.

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# A Study of the Learning Crisis and Evolving Strategies for Quality Education

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## Abstract

In essence, the learning crisis reflects a profound loss of human potential and capability. Across the globe, millions of children and adolescents are affected, with the problem being particularly acute in low-income regions. For many, attending school daily without meaningful comprehension is a distressing experience. In India, more than 50% of grade 5 children continue to struggle with grade 2 literacy. The NEP-2020 underscores the importance of not only preparing children for school but also ensuring institutional readiness to meet their developmental needs. Early childhood curricula and pedagogies are generally vibrant, encouraging children to play freely, express themselves, and collaborate in groups. Since 2015, the Annual Status of Education Report (ASER) by Pratham has consistently highlighted the decline in learning levels among students across India, including Telangana. Findings from the EFA Global Monitoring Report, the World Development Report (2018), the National Achievement Survey (NAS), and the Telangana State Learning Achievement Surveys (SLAS) all point to the same conclusion: education quality is in crisis, widely referred to as the "learning crisis." Against this backdrop, the present study was undertaken to assess the extent of the learning crisis among grade 3 students. Using the descriptive survey method, data were collected from a sample of 450 students, selected through simple random sampling. The analysis, conducted with both descriptive and inferential statistics (including frequencies, mean, standard deviation, percentiles, and t-tests), revealed worrying trends. Half of the grade 3 students failed in Telugu, scoring below 35 marks. In English, mathematics, and EVS, more than half of the students similarly fell below the passing threshold. Performance in Telugu was nearly evenly split between low and high levels. Overall, nearly half of the students—199 (44.2%)—demonstrated a low level of performance across all subjects.

**Keywords:** *Human potential, quality education, learning crisis, pedagogy, NEP-2020.*

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## Introduction

The term *learning crisis* refers to a global challenge that encompasses the widespread issue of inadequate education and learning outcomes. It is a symptom that educational systems are not equipping pupils with the knowledge, abilities, and skills they need to prosper in an increasingly complex and competitive world. Education is the foundation of developing human capital. Put simply, the learning crisis represents a colossal waste of human potential and aptitude. All around the world, children and teenagers are affected by this problem, though it is especially acute in low-income areas. Going to school day after day without understanding anything is a miserable experience. In India, more than half of grade 5 students have not mastered grade 2 literacy. The NEP-2020 emphasises not only preparing children for school but also ensuring institutional preparedness. Early childhood curricula and pedagogies are often vibrant in nature, encouraging children to play freely, express themselves, and collaborate in groups. School curricula and pedagogies also emphasise preparing teachers to handle classrooms where children are at different levels of learning.

Education has become the most important aspect of human life. In the 21st century, life without schooling is almost unimaginable. Everyone has realised that development depends on education. Even in ancient India and other civilizations, although schooling existed, it was not universally available. Today, education is provided to all irrespective of socio-economic status. *Universalisation of Education* or *Education for All* was a key promise to ensure access to primary education (Green, F., 2020). After several major initiatives, significant achievements have been made in expanding school access, enrolling children of school age, and retaining them to ensure continuity. Programmes such as Operation Blackboard, DPEP, SSA, and RMSA have strengthened basic infrastructure and increased teacher appointments. Retention efforts included free textbooks, midday meals, scholarships, and other incentives to fulfil the constitutional mandate of free and compulsory education for children aged 6–14. The RTE-2009 enabled the enforcement of the right to education. As Kothari (1964–66) rightly stated, "The destiny of India is now being shaped in her classrooms" (RTE, 2009). The National Policy on Education 1986 further emphasised that "the status of the teacher reflects the socio-cultural ethos of the society." It is widely acknowledged that no nation can rise above the level of its teachers. Thus, teachers, students, and schools are the key forces that can transform a nation and improve the quality of life. SDG-4 for quality education echoes this vision, aiming to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."

## Status of Quality Education

Since 2015, the Annual Status of Education Report (ASER) published by Pratham has consistently highlighted declining learning levels among students in India, including Telangana. Reports from EFA Global Monitoring, the World Development Report (2018), the National Achievement Survey (NAS), and the Telangana State Learning Achievement Surveys (SLAS) have all revealed the same trend: the quality of education is in crisis, widely referred to as the *learning crisis.* For instance, when a student of grade VIII is unable to read, write, or perform arithmetic operations of grade V level, it clearly reflects a learning crisis. This means students are being promoted from lower to higher grades without attaining the expected learning levels. Some educationists argue that it is not only a *learning crisis* but also a *teaching crisis.* This crisis leads to *learning poverty,* depriving students of the knowledge and skills required for future employment (Edwards, A., 2008). The NEP-2020 has sought to address this issue by strengthening pedagogic processes and emphasising the vital role of school heads and teachers in both academic and administrative functions.

## Recent Report of the National Achievement Survey (NAS)

The findings of the National Achievement Survey (NAS) 2021, released by the Government of India, raise serious concerns for all stakeholders in education. Knowledge being the cornerstone of education, the sharp decline in learning outcomes highlights both an information crisis and systemic issues in Indian schooling.

The NAS assessed the learning competencies of children in grades 3, 5, 8, and 10 through a nationwide survey conducted in November 2021. The assessment covered language, mathematics, science, and social science in grades 3 and 5; language, mathematics, science, social science, and English in grade 8; and the same five subjects in grade 10. A representative sample of nearly 34 lakh students from 1.18 lakh schools across 720 districts—rural and urban—participated in the NAS 2021 survey.

## Literature Review

Michele Schweisfurth (2023), in her study *Pedagogical Interventions and the Learning Crisis: Disaster Didacticism,* critically examined the terminology of the "learning crisis" and the solutions extensively promoted by international organisations (IOs) in lower- and middle-income countries. Her analysis highlighted how such

reports often frame private education as profitable, with pedagogy that produces better results used to persuade parents to enrol their children in non-state schools. Complementing this, the *E-Scholarly Community Encyclopaedia* (2022) defined the learning crisis as the reality that although most children globally attend school, many are not actually learning. A World Bank survey found that 53% of children in low- and middle-income countries cannot read and understand a simple story by the end of primary school. Despite rapid growth in access, learning outcomes lag severely behind. For instance, over half of grade 5 children in India still struggle with grade 2 literacy, only 10% of Nigerian women completing grade 6 can read a sentence in their mother tongue, and in PISA for Development tests, just 12% of children across seven low- and middle-income countries achieved minimum competency in mathematics, while only 23% met the reading benchmark.

Adding to this discourse, Ling Zhang et al. (2022), in their study *Crisis Responses in Academia: A Bibliometric Examination of Online Learning Literature in Higher Education during COVID-19,* employed bibliometric analysis to map global research on online learning during the pandemic. Their findings revealed contributions from 103 countries across the global north and south, covering themes such as technology adoption, curriculum redesign, student perceptions, and the psychological impact of pandemic-driven online learning. Similarly, Michalionos Zembylas et al. (2022), in their work *Adaptive Teaching under Emergencies,* revisited the idea of "education in crisis" through educational philosophy, practice, and policy. Their research demonstrated how different perspectives on crises shape approaches to educational policy, pedagogy, and reforms, particularly within the Asia-Pacific context.

## Research Methodology

The study employed the Descriptive Survey Method to accomplish its objectives. The researcher surveyed various government schools in Telangana state to assess the learning levels of students by administering suitable questionnaires.

## Objectives of the Study

The following objectives were formulated in line with the rationale of the study:

1. To assess the learning levels of grade students of Telangana state.
2. To identify the level of learning crisis among grade 3 students of Telangana state.
3. To evolve strategies for quality education to cope with the learning crisis.

## Hypotheses

Based on the review of related literature, the following hypotheses were formulated:

1. Students of grade 3 studying in government schools of Telangana state experience a learning crisis.
2. Students of grade 3 studying in government schools of Telangana state have a higher level of learning crisis.
3. There is no significant difference in learning levels of grade students with respect to different demographic variables.

## Sample and Sampling Technique

The sample included 75 government schools selected from three erstwhile districts - Warangal, Karimnagar, and Hyderabad of Telangana state. From these schools, 450 3rd grade students were selected using the simple random sampling technique.

## Tools for the Study

To collect relevant data, the researcher employed a students' learning level questionnaire, prepared separately for Telugu, English, Mathematics, and EVS subjects.

## Statistical Techniques Used

The data collected was systematically organised and analysed using both descriptive statistics (frequencies, mean, S.D., percentiles) and inferential statistics (t-test).

## Data Analysis

The data analysed is presented here:

**Table-1: Student's distribution with respect to the availability of the classroom**

| Availability of classroom | Frequency | Percent |
|---|---|---|
| Yes | 433 | 96.2 |
| Yes | 17 | 3.8 |
| Total | 450 | 100.0 |

Table.1 shows the distribution of the students with availability of classroom, majority of the students 433 (96.2%) responded that there is a classroom available in the school. Remaining students 17 (3.7%) responded that there is no classroom available in the school.

**Table-2: Student's scores for all subjects**

| **Subject wise overall results** | | | | | | |
|---|---|---|---|---|---|---|
| **Subject wise data** | | **Telugu** | **English** | **Maths** | **EVS** | **Total** |
| N | | 450 | 450 | 450 | 450 | 450 |
| Mean | | 41.2040 | 29.3846 | 52.5418 | 33.1104 | 39.0602 |
| Median | | 40.0000 | 16.0000 | 62.0000 | 20.0000 | 39.2500 |
| Mode | | .00 | .00 | 75.00 | .00 | 12.50 |
| Std. Deviation | | 34.96722 | 27.94150 | 27.66398 | 30.68608 | 22.01635 |
| Variance | | 1222.707 | 780.727 | 765.296 | 941.635 | 484.720 |
| Skewness | | .199 | .530 | -.400 | .616 | .191 |
| Std. Error of Skewness | | .141 | .141 | .141 | .141 | .141 |
| Kurtosis | | 1.364 | 1.105 | 1.121 | .680 | 1.030 |
| Std. Error of Kurtosis | | .281 | .281 | .281 | .281 | .281 |
| Percentiles | 25 | .0000 | .0000 | 25.0000 | .0000 | 18.7500 |
| | 50 | 40.0000 | 16.0000 | 62.0000 | 20.0000 | 39.2500 |
| | 75 | 80.0000 | 50.0000 | 75.0000 | 60.0000 | 56.7500 |

From table.2, it was found that, students mean score (41.2) in Telugu is greater than the median score (40) which indicated that distribution of the scores are positively skewed with the value 0.199, and most of the students got '0' marks in Telugu.

With the value of -1.364, kurtosis indicated that distributions of the scores are platykurtic. Likewise, students mean score (29.3) in English is greater than the median score (16) which indicated that distribution of the scores are positively skewed with the value 0.530, and most of the students got '0' marks in English.

With the value of 1.105, kurtosis indicated that distributions of the scores are platykurtic. Likewise, students mean score (52.5) in Maths is lesser than the median score (62) which indicated that distribution of the scores are negatively skewed with the value -.4, and most of the students got '75' marks in Maths. With the value of 1.121, kurtosis indicated that distributions of the scores are platykurtic. Likewise, students mean score (33.1) in EVS is greater than the median score (20) which indicated that distribution of the scores are positively skewed with the value 0.616,

and most of the students got '0' marks in EVS. With the value of .680, kurtosis indicated that distributions of the scores are platykurtic. This table also indicated that students overall mean score (39.0) in all subjects is more or less equal to the median score (39.25) which indicated that distribution of the scores is positively skewed with the value 0.191, and most of the students got an average '12' marks in all subjects. With the value of 1.030, kurtosis indicated that distribution of the scores is platykurtic.

**Table-3: Level of Telugu performance of the 3rd grade students**

| **Telugu Performance Levels** | Frequency | Percent |
|---|---|---|
| Low | 197 | 43.8 |
| Medium | 60 | 13.4 |
| High | 193 | 42.8 |
| Total | 450 | 100.0 |

From table.3 it can be noted that 197 (43.8%) of 3rd grade students had low level of performance, 60 (13.4%) had medium level of performance and 193 (42.8%) had high level of performance in Telugu.

Hence it is concluded that, more or less equal no. of students had low and high levels of performance in Telugu.

**Table-4: Level of English performance of the 3rd grade students**

| **English Performance Levels** | Frequency | Percent |
|---|---|---|
| Low | 288 | 64.0 |
| Medium | 71 | 15.8 |
| High | 91 | 20.2 |
| Total | 450 | 100.0 |

From table.4 it can be noted that 288 (64%) of 3rd grade students had low level of performance, 71 (15.8%) had medium level of performance and 91 (20.2%) had high level of performance in English. Thus, it can be concluded that, majority of 3rd grade students had low level of performance in English.

**Table-5: Level of Maths performance of the 3rd grade students**

| **Maths Performance Levels** | Frequency | Percent |
|---|---|---|
| Low | 113 | 25.1 |
| Medium | 106 | 23.6 |
| High | 231 | 51.3 |
| Total | 450 | 100.0 |

From table.5 it can be noted that 113 (25.1%) of 3rd grade students had low level of performance, 106 (23.6%) had medium level of performance and 231 (51.3%) had high level of performance in Maths. Thus, it can be concluded that, more than half of the 3rd grade students had high levels of performance in Maths.

**Table-6: Level of EVS performance of the 3rd grade students**

| **EVS Performance Levels** | Frequency | Percent |
|---|---|---|
| Low | 236 | 52.5 |
| Medium | 87 | 19.3 |
| High | 127 | 28.2 |
| Total | 450 | 100.0 |

From table.6 it can be noted that 236 (52.5%) of 3rd grade students had low level of performance, 87 (19.3%) had medium level of performance and 127 (28.2%) had high level of performance in EVS. Thus, it can be concluded that, more than half of the 3rd grade students had low level of performance in EVS.

**Table-7: Overall level of performance of the 3rd grade students**

| **Total Performance Levels** | **Frequency** | **Percent** |
|---|---|---|
| Low | 199 | 44.2 |
| Medium | 163 | 36.2 |
| High | 88 | 19.6 |
| Total | 450 | 100.0 |

From table.7 it is understood that 199 (44.2%) 3rd grade students had low level of performance in all subjects. Likewise, 63 (36.2%) 3rd grade students had medium level of performance in all subjects. Again 88 (19.6%) 3rd grade students had high level of performance in all subjects. Thus, it can be concluded that near about half of the 3rd grade students 199 (44.2%) showed low level of performance in all subjects.

**Table-8: t-test for subject wise performance of the 3rd grade students with regard to their gender**

| Subject | Gender | N | Mean | Std. Deviation | t | df | Sig. |
|---|---|---|---|---|---|---|---|
| Telugu | Male | 184 | 32.95 | 33.12 | 3.45 | 448 | 0.00 |
| | Female | 266 | 46.89 | 35.16 | | | |
| English | Male | 184 | 25.48 | 27.30 | 2.01 | | 0.04 |
| | Female | 266 | 32.07 | 28.14 | | | |
| Maths | Male | 184 | 51.74 | 26.27 | 0.41 | | 0.68 |
| | Female | 266 | 53.09 | 28.64 | | | |
| EVS | Male | 184 | 28.52 | 29.64 | 2.15 | | 0.03 |
| | Female | 266 | 36.27 | 31.07 | | | |
| Total | Male | 184 | 34.68 | 20.75 | 2.89 | | 0.00 |
| | Female | 266 | 42.08 | 22.41 | | | |

From table.8 it is revealed that the calculated t-score for Telugu subject of males and females is 3.45 with p value 0.00 at 0.05 level of significance, found to be significant. Therefore, there is statistically significant difference in Telugu scores of males and females 3rd grade students. The calculated t-score for English subject of males and females is 2.01 with p value 0.04 at 0.05 level of significance, found to be significant. Therefore, there is statistically significant difference in English scores of males and females 3rd grade students.

It is understood from the table that the calculated t-score for Maths subject of males and females is 0.41 with p value 0.68 at 0.05 level of significance, found to be insignificant. Therefore, there is statistically no significant difference in Maths scores of males and females - 3rd grade students.

It is also observed from the table that the calculated t-score for EVS subject of males and females is 2.15 with p value 0.03 at 0.05 level of significance, found to be significant. Therefore, there is statistically significant difference in EVS scores of male and female 3rd grade students.

The calculated t-score in all subjects for males and females is 2.89 with p value 0.00 at 0.05 level of significance, found to be significant. Therefore, there is statistically significant difference in all subjects' scores of males and females 3rd grade students.

**Table-9: t-test for subject wise performance of the 3rd grade students with regard to their medium**

| *Subject* | Medium | N | Mean | Std. Deviation | t | df | P Sig. |
|---|---|---|---|---|---|---|---|
| Telugu | EM | 304 | 39.3 | 35.9 | 1.35 | 448 | 0.17 |
| | TM | 146 | 45.2 | 32.8 | | | |
| English | EM | 304 | 27.3 | 27.0 | 1.88 | | 0.06 |
| | TM | 146 | 33.8 | 29.6 | | | |
| Maths | EM | 304 | 51.4 | 28.5 | 1.01 | | 0.31 |
| | TM | 146 | 54.9 | 25.9 | | | |
| EVS | EM | 304 | 33.8 | 32.0 | 0.53 | | 0.59 |
| | TM | 146 | 31.8 | 28.0 | | | |
| Total | EM | 304 | 37.9 | 21.7 | 1.26 | | 0.20 |
| | TM | 146 | 41.4 | 22.6 | | | |

From table.9 it is revealed that the calculated t-score for Telugu subject of English and Telugu medium students is 1.35 with p value 0.17 at 0.05 level of significance, found to be insignificant. Therefore, there is statistically no significant difference in Telugu scores of English and Telugu medium 3rd grade students. The calculated t-score for English subject of English and Telugu medium students is 1.88 with p value 0.06 at 0.05 level of significance, found to be insignificant. Therefore, there is statistically no significant difference in English scores of English and Telugu medium 3rd grade students.

It is understood from the table that the calculated t-score for Maths subject of English and Telugu medium students is 1.01 with p value 0.31 at 0.05 level of significance, found to be insignificant. Therefore, there is statistically no significant difference in Maths scores of English and Telugu medium 3rd grade students.

It is also observed from the table that the calculated t-score for EVS subject of English and Telugu medium students is 0.53 with p value 0.59 at 0.05 level of significance, found to be insignificant. Therefore, there is statistically no significant difference in EVS scores of English and Telugu medium 3rd grade students. It is also observed from the table that the calculated t-score for all subjects of English and Telugu medium students is 1.26 with p value 0.20 at 0.05 level of significance, found to be insignificant. Therefore, there is statistically no significant difference in all subjects' scores of English and Telugu medium 3rd grade students.

## Key Findings

1. More or less an equal number of students were found under low (43.8%) and high (42.8%) levels of performance in Telugu.
2. A majority of 3rd grade students were found under low levels of performance in English.
3. More than half of the 3rd grade students (51.3%) were found under high levels of performance in Mathematics.
4. More than half of the 3rd grade students (52.5%) were found under low levels of performance in EVS.
5. Nearly half of the 3rd grade students, 199 (44.2%), showed a low level of performance in all subjects.
6. The variable ***- gender*** was found statistically significant in relation to Telugu, English, and EVS, but insignificant in Mathematics. Overall, the learning crisis with respect to gender in different subjects was found to be significant.

**Medium of instruction** was found to be insignificant in Telugu, English, Mathematics, and EVS. Overall, medium of instruction was found to be insignificant across different subjects.

## Recommendations

It is strongly believed that prevention is always better than cure. Policies should be consciously devised so that quality education is seen as an immediate output in terms of the constructivist development of young children.

### A. Teacher Training and Recruitment

- Availability of regular trained teachers has become a serious issue in schools of Telangana state.
- The government should adopt functional strategies for recruiting and retaining qualified teachers, especially in remote and underserved areas.
- The recruitment process should be conducted on a regular basis, depending upon the vacancies.

### B. Curriculum Reforms

- Periodical review and updating of the curriculum should be undertaken to ensure its relevance, alignment with global standards, and incorporation of practical, real-world applications.

- The curriculum should ensure the inclusion of diverse perspectives and the promotion of critical thinking skills.
- In all these respects, NEP 2020 recommendations should be stringently followed by schools to comply with global standards and to integrate indigenous educational practices aligned with the Indian Knowledge System (IKS).
- With the availability of NCF-2023, schools and stakeholders should hold discussions on the curricular aspects introduced in the renewed school curriculum.

### C. Infrastructure and Resources

· The government should focus on resource allocation to improve school infrastructure, including classrooms, libraries, and laboratories.

· Special attention is required for the provision of digital infrastructure to strengthen technology-embedded teaching and learning.

### D. Implementation of Intervention/Strategy

- A phased implementation plan should be outlined for the proposed policy recommendations, considering both short-term and long-term goals.
- Emphasis should be placed on collaboration between government agencies, educational institutions, and non-governmental organizations for effective execution.

### E. Monitoring and Evaluation

- A robust monitoring and evaluation system should be implemented to track progress and identify areas for improvement at the primary and secondary levels of school education.

## Conclusion

The comprehensive analysis of 3rd grade students' demographics and academic performance offers valuable insights into the multifaceted factors influencing educational outcomes. The majority of students in 3rd grade are 9 or 10 years old, reflecting the concentration of learners in the early years of primary education. The choice of the medium of instruction emerges as a significant factor, with 67.6% studying in English and 32.4% in Telugu. Overall, there is a positive scenario regarding teacher availability and classroom accessibility. Students reported access to teachers for Telugu, English, Mathematics, and Social Science. Most students also have access to classrooms, though a small percentage face shortages, indicating persisting

infrastructure challenges. Subject-wise performance analysis uncovers varying trends. In 3rd grade, skewed distributions in Telugu and English scores suggest significant challenges in these subjects. The implications of these findings are far-reaching. Targeted interventions are needed to address language-based challenges, socio-economic disparities, and parental education gaps. Strategies should be gender-sensitive, given the observed differences in subject-wise performance.

The positive infrastructure scenario needs to be maintained and expanded, ensuring equitable access to quality education for all students. For policymakers, administrators, and educators, the insights from this analysis provide a valuable foundation for designing context-specific interventions. The issue of the learning crisis can be reduced through a comprehensive, multifaceted strategy that includes infrastructure development, teacher training, curriculum adaptation, mental health support, and community engagement. This integrated approach is essential to effectively address Telangana's learning crisis.

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# Adult Learners and Job Satisfaction: The Role of Participation in Adult Education

• **Shrikant Singh**[1]

## Abstract

The impact of adult education on job satisfaction was a critical focus of this study, considering the evolving nature of the workforce and the growing need for continuous professional development. This paper examined how adult education initiatives contributed to job satisfaction among employees across various industries. Using a mixed-methods approach combining quantitative surveys and qualitative interviews, the study explored the correlation between participation in adult education programmes and levels of job satisfaction. Key findings indicated that employees who engaged in continuous learning opportunities reported higher job satisfaction, enhanced skills and greater prospects for career advancement. The study also discussed the implications for employers, suggesting that investment in adult education led to improved employee retention, productivity and overall organizational performance. It highlighted the necessity of accessible, relevant educational programmes tailored to adult learners' needs and emphasized the importance of supportive learning environments in fostering job satisfaction.

**Keywords:** *Adult education, job satisfaction, continuous learning, professional development,organizational performance, lifelong learning.*

## Introduction

In today's rapidly evolving economic landscape, continuous professional development has become essential for both employees and employers. The advent of new technologies, shifting market demands, and the increasing complexity of job roles require employees to continually update their skills and knowledge. Adult education, encompassing both formal and informal learning opportunities beyond traditional schooling, plays a critical role in this ongoing professional development.

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By enabling individuals to enhance their competencies, adapt to changes, and advance in their careers, adult education contributes significantly to both personal and organizational growth (Knowles, 1984).

Job satisfaction is a multifaceted concept reflecting employees' overall perceptions of their jobs and work environments. High levels of job satisfaction have been linked to numerous positive outcomes, including increased productivity, lower turnover rates, and improved mental health and well-being (Robertson, Birch, & Cooper, 2012). Understanding the factors influencing job satisfaction remains crucial for organizations striving to foster a motivated and engaged workforce. A growing body of evidence suggests that adult education positively impacts job satisfaction. Participation in continuous learning initiatives not only enhances employees' skills and knowledge but also contributes to their sense of personal fulfilment and career progression (Billett, Choy, & Hodge, 2020). Employees who engage in lifelong learning often report higher job satisfaction due to increased competence and confidence resulting from newly acquired skills, as well as improved career advancement opportunities arising from additional qualifications and certifications (Puri & Abraham, 2021).

The effectiveness of adult education programmes in enhancing job satisfaction is significantly influenced by the degree of organizational support. Employers who invest in their employees' continuous learning through financial assistance, flexible scheduling and supportive learning environments are more likely to amplify the positive effects of adult education on job satisfaction (Van Noy, James, & Bedley, 2016). Organizational policies that prioritize professional development and cultivate a culture of continuous learning are critical to achieving these benefits. While existing research highlights the positive impact of adult education on job satisfaction, gaps remain in understanding the specific mechanisms through which these benefits are realized. Moreover, there is a need for more comprehensive studies that include diverse industries and populations to ensure the generalizability of findings. Longitudinal research could further clarify the long-term effects of adult education on job satisfaction.

## Literature Review

Adult education, also referred to as continuing education or lifelong learning, encompasses all forms of learning undertaken by adults beyond traditional schooling. This includes professional development courses, higher education, vocational training and informal learning opportunities. The significance of adult education lies in its

potential to enhance skills, facilitate career transitions, and contribute to personal growth and societal development (Knowles, 1984).

Knowles (1984) proposed andragogy as the art and science of helping adults learn, emphasizing self-directed learning, experience-based activities, and the relevance of learning to real-life tasks. Mezirow (1991) suggested that adult learning involves a process of critical reflection that leads to a transformation in perspective, enabling individuals to make meaning of their experiences. Bryson and Anderson (2006) emphasized the role of experience in the learning process, advocating for a cycle of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Job satisfaction refers to the level of contentment employees feel about their work, which significantly impacts organizational performance, employee retention, and overall well-being (Robertson et al., 2012). High levels of job satisfaction are associated with increased productivity, reduced turnover, and improved mental health.

Research consistently indicates that adult education positively influences job satisfaction. Billett et al. (2020) found that participation in workplace learning programmes enhances employees' skills, leading to greater job satisfaction. Similarly, Smith and Rae (2018) reported that lifelong learning contributes to higher job satisfaction by fostering a sense of personal achievement and professional growth. Several studies highlight skill enhancement as a crucial mediator between adult education and job satisfaction. Employees who acquire new skills through continuous learning are better equipped to perform their tasks, resulting in increased job satisfaction (Noe, Tews, & Dachner, 2010). Adult education also facilitates career advancement by providing employees with the qualifications and knowledge required for promotions and new roles. Puri and Abraham (2021) found that employees who engaged in professional development programmes reported higher job satisfaction due to improved career prospects.

Personal growth and fulfilment are also significant outcomes of adult education. Watkins and Marsick (2014) emphasized that lifelong learning contributes to an individual's sense of achievement and self-worth, which, in turn, enhances job satisfaction. The role of organizational support in strengthening the link between adult education and job satisfaction cannot be overstated. Van Noy et al. (2016) found that employees who received employer support - such as financial assistance and time off for learning - reported higher levels of job satisfaction.

Despite its benefits, participation in adult education is often hindered by barriers such as time constraints, family responsibilities, and financial limitations (Cross, 1981;

Kyndt, Dochy, & Nijs, 2009). Without organizational support, many employees find it difficult to pursue continuous learning opportunities (Tannenbaum, Beard, McNall, & Salas, 2010). There remains a need for longitudinal studies to establish causal relationships between adult education and job satisfaction.

## Objectives of the Study

The primary objective of this study was to examine the impact of adult education on job satisfaction among employees across various industries. Specifically, the study aimed to:

- Determine the extent to which participation in adult education programmes influenced job satisfaction among employees.
- Analyze the role of skill enhancement and career advancement as key outcomes of adult education that contributed to higher job satisfaction.
- Evaluate the moderating effect of organizational support-such as financial assistance, flexible scheduling, and a learning-friendly culture on the relationship between adult education and job satisfaction.
- Explore adult learners' experiences of personal growth, increased confidence, and motivation as drivers of job satisfaction.
- Offer practical recommendations to employers on designing and implementing effective adult education initiatives that enhanced employee satisfaction, performance, and retention.

## Hypotheses

This study tested the following hypotheses:

- H1: Participation in adult education programmes was positively correlated with job satisfaction among employees.
- H2: Employees who participated in adult education programmes reported higher levels of job satisfaction compared to those who did not participate.
- H3: Organizational support for adult education positively moderated the relationship between participation in adult education programmes and job satisfaction.
- H4: Skill enhancement gained through adult education programmes was a significant predictor of job satisfaction.
- H5: Career advancement opportunities resulting from adult education programmes were positively associated with job satisfaction.

## Research Methodology

This study employed a mixed-methods research design, integrating both

quantitative and qualitative approaches to provide a comprehensive analysis of the impact of adult education on job satisfaction.

## Sample

The study included a total of 82 valid survey respondents and 30 qualitative interview participants, all of whom were employees from various industries in Kanpur, Uttar Pradesh, India. A stratified random sampling technique was employed to ensure appropriate representation from key sectors, including healthcare (22%), education (18%), technology (20%), manufacturing (15%), and others (25%). Demographic diversity was also maintained in terms of gender, age groups and education levels.

## Instrumentation

***Quantitative Instrument (Survey)***

The structured questionnaire consisted of three sections:

1. Demographic Information – Including gender, age, industry, and educational qualifications.

2. Participation in Adult Education – Measured through binary and frequency-based items:

*"Have you participated in any adult education or continuing education programmes in the past five years?" (Yes/No)*

*"How often do you engage in professional development activities?" (Never, Rarely, Sometimes, Often, Always)*

3. Job Satisfaction Scale – Comprised of Likert-type items rated on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree). Example statements included:

*"I feel satisfied with my current job role."*

*"I have adequate opportunities for growth and development."*

*"I am more confident in my job after participating in adult education."*

*"My employer supports my continued learning and professional development."*

*"Learning new skills has improved my job performance and satisfaction."*

***Qualitative Instrument***

Semi-structured interviews were conducted with 30 participants who volunteered after completing the survey. An interview guide was developed with open-ended questions designed to explore:

- Motivation for participating in adult education
- Perceived impact on their job satisfaction and career

- Organizational support received
- Barriers faced in accessing education

## Validity and Reliability

To ensure content validity, the survey items were adapted from established literature and reviewed by experts in education and organizational psychology. A pilot test was conducted with 10 participants to refine item clarity and wording.

The reliability of the job satisfaction scale was assessed using Cronbach's Alpha, which confirmed internal consistency. Triangulation of quantitative and qualitative data enhanced the credibility and depth of the findings.

## Ethical Considerations

Participants were provided with detailed information about the study's purpose, procedures, and their rights, and written consent was obtained. All data was anonymized, and personal identifiers were removed to protect participants' privacy. Participation in the study was entirely voluntary, with the option to withdraw at any time without any consequences.

## Results

### *Quantitative Data Analysis*

The survey received 82 valid responses from a diverse range of industries. The demographic profile of the respondents was as follows:

*Gender: 52% female, 48% male*

*Age Groups: 25–34 years (28%), 35–44 years (35%), 45–54 years (23%), 55+ years (14%)*

*Industry Sectors: Healthcare (22%), Education (18%), Technology (20%), Manufacturing (15%), Other (25%)*

*Education Level: Bachelor's degree (40%), Master's degree (35%), Doctorate (10%), Other (15%)*

**Table 1: Demographic Profile of Respondents**

| Demographic | Category | Percentage (%) |
|---|---|---|
| Gender | Female | 52 |
| | Male | 48 |
| Age | 25-34 | 28 |
| | 35-44 | 35 |
| | 45-54 | 23 |
| | 55+ | 14 |
| Industry | Healthcare | 22 |
| | Education | 18 |
| | Technology | 20 |
| | Manufacturing | 15 |
| | Other | 25 |
| Education Level | Bachelor's degree | 40 |
| | Master's degree | 35 |
| | Doctorate | 10 |
| | Other | 15 |

Pie Chart: Gender Distribution

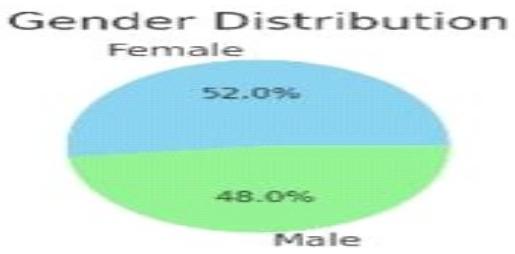


Figure: 1

A pie chart was used to illustrate the distribution of gender among the respondents, showing that 52% were females and 48% were males.

**Bar Chart: Age Distribution**


Figure : 2

A bar chart was used to represent the age distribution among the respondents, displaying the age groups as follows: *25–34 years (28%), 35–44 years (35%), 45–54 years (23%), and 55+ years (14%).*

**Pie Chart: Industry Distribution**


Figure: 3

A pie chart was also used to illustrate the distribution of respondents across different industries, showing the following proportions: *Healthcare (22%), Education (18%), Technology (20%), Manufacturing (15%), and Other (25%).*

**Bar Chart: Education Level Distribution**

A bar chart was used to display the education levels of the respondents, depicting the distribution as follows: *Bachelor's degree (40%), Master's degree (35%), Doctorate (10%), and Other (15%).*

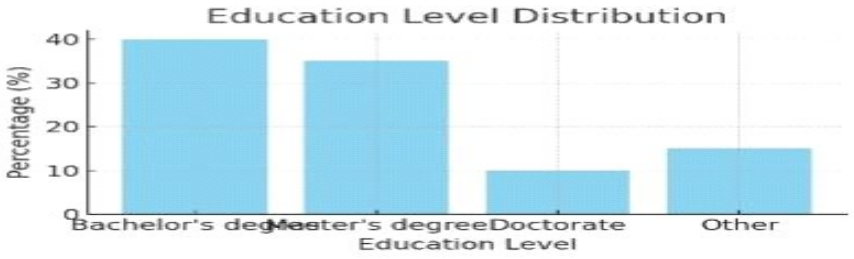


Figure: 4

**Descriptive Statistics**

**Table 2: Findings**

| Metric | Value |
|---|---|
| Average Job Satisfaction Score | 3.8 / 5 |
| Participation in Adult Education programmes | 68% |

The average job satisfaction score was recorded as 3.8 on a 5-point Likert scale, indicating a relatively high level of satisfaction. Additionally, 68% of the respondents had participated in some form of adult education programme during the previous five years.

**Bar Chart: Participation in Adult Education Programmes**

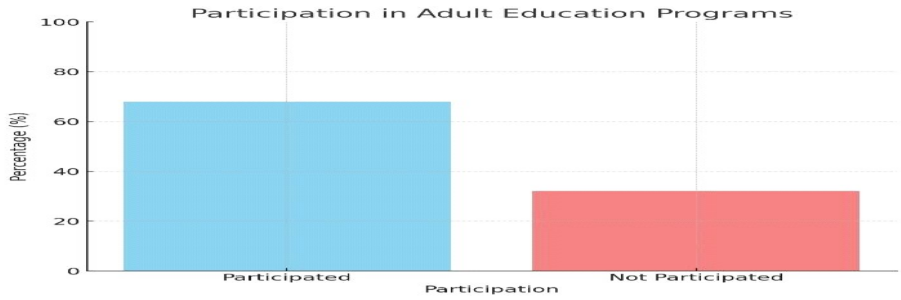


Figure: 5

The bar chart illustrated participation in adult education programmes . A total of 68% of respondents had participated in some form of adult education programme in the past five years, while 32% had not.

### Correlation and Regression Analysis

**Table 3: Correlation Analysis**

| Variable | Correlation Coefficient (r) | Significance (p) |
|---|---|---|
| Participation in Adult Education programmes and Job Satisfaction | 0.45 | < 0.01 |

A Pearson correlation was calculated to measure the strength and direction of the relationship between participation in adult education programmes and job satisfaction. The analysis yielded a correlation coefficient of r = 0.45, with a significance level of $p < 0.01$. This result indicated a moderate, statistically significant positive relationship - employees who had engaged in adult education were more likely to report higher levels of job satisfaction.

**Table 4: Regression Analysis**

| Predictor Variable | Standardized Coefficient (β) | Significance (p) | $R^2$ |
|---|---|---|---|
| Participation in Adult Education programmes | 0.42 | < 0.01 | 0.19 |

A significant positive correlation ($r = 0.45$, $p < 0.01$) was found between participation in adult education programmes and job satisfaction. Regression analysis indicated that participation in adult education programmes was a significant predictor of job satisfaction ($\hat{a} = 0.42$, $p < 0.01$), accounting for 19% of the variance in job satisfaction scores.

### Scatter Plot: Participation in Adult Education Programmes vs. Job Satisfaction

A linear regression analysis was conducted to further examine the predictive power of adult education participation on job satisfaction. The results showed that:

Standardized Coefficient ($\hat{a}$) = 0.42

Significance (p) < 0.01

$R^2 = 0.19$

This meant that participation in adult education programmes accounted for 19% of the variance in job satisfaction scores. The standardized beta value of 0.42 indicated

a strong, positive influence of adult education on job satisfaction, even when other factors were considered.

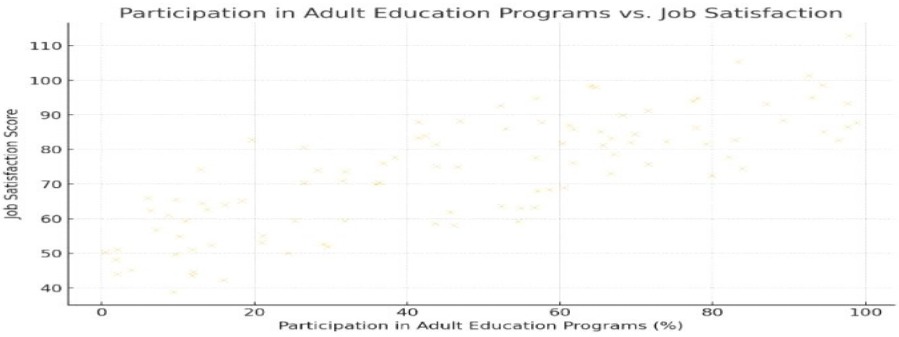


Figure: 6

## Key Findings

**Table 5: Summarizing the findings:**

| Participation | Mean Job Satisfaction Score | Percentage Reporting Skill Enhancement and Career Advancement |
|---|---|---|
| Yes | 4.1 | 72% |
| No | 3.4 | 0% |

Respondents who had participated in adult education programmes reported higher levels of job satisfaction (mean score = 4.1) compared to those who had not (mean score = 3.4). Professional development opportunities were identified as a major contributor to job satisfaction, with 72% of participants citing skill enhancement and career advancement as key benefits.

### Bar Graphs: Summarizing the findings

1. Mean Job Satisfaction Score: The analysis showed that respondents who had participated in adult education programmes reported higher job satisfaction compared to those who had not.

2. Percentage Reporting Skill Enhancement and Career Advancement: A total of 72% of participants in adult education programmes reported skill enhancement and career advancement as key benefits of their participation.

These findings emphasized that gains in competence and professional mobility contributed substantially to job satisfaction.

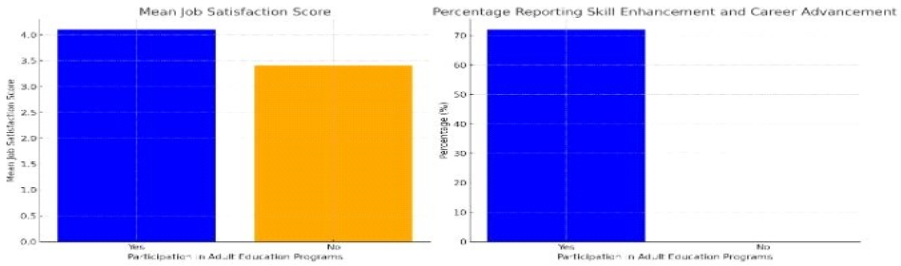


Figure: 7

***Qualitative Data Analysis***

Thematic analysis of interview transcripts revealed several recurring themes related to the impact of adult education on job satisfaction. Many participants reported that acquiring new skills through adult education programmes boosted their confidence and competence in their roles. Several respondents indicated that adult education facilitated promotions and new job opportunities, which in turn contributed to higher job satisfaction. Participants frequently described personal growth and fulfilment as significant outcomes of engaging in lifelong learning. The level of support from employers such as funding and time off for education were identified as critical factors influencing the positive impact of adult education on job satisfaction.

***Participant Quotes***

*"The certification programme I completed last year was instrumental in my recent promotion. It made me feel more valued and capable at work."*

*"Continuing my education not only improved my skills but also my self-esteem. I felt more confident in taking on new challenges."*

***Synthesis of Quantitative and Qualitative Findings***

The quantitative data demonstrated a significant positive relationship between adult education and job satisfaction, particularly through improvements in skill enhancement and career progression. The qualitative insights provided personal narratives and experiences that illustrated how adult education fostered a sense of achievement, confidence and perceived workplace support.

### *Implication for Employers*

The findings suggested that employers could enhance job satisfaction by investing in adult education programmes . Providing opportunities for continuous learning, offering financial assistance, and cultivating a supportive learning environment were found to be critical strategies for improving employee satisfaction and retention.

## Discussion

This study aimed to explore the impact of adult education on job satisfaction among employees across various industries in Kanpur, Uttar Pradesh, India. The findings indicated a significant positive relationship between participation in adult education programmes and job satisfaction. Employees who engaged in continuous learning reported higher levels of job satisfaction, enhanced skills, greater career advancement opportunities and increased personal fulfilment. Employees who had participated in adult education programmes demonstrated higher job satisfaction, which could be attributed to the acquisition of new skills and knowledge. These developments boosted employees' competence and confidence in their roles. Improved skill sets enabled them to perform tasks more efficiently, resulting in a greater sense of accomplishment and job satisfaction. Adult education also provided opportunities for career progression. Many participants reported that additional qualifications and certifications obtained through these programmes facilitated promotions and access to new job roles. This sense of professional growth and development contributed significantly to job satisfaction. In addition to career-related outcomes, personal growth and fulfilment emerged as strong themes in the qualitative analysis. Several employees pursued adult education not only for career benefits but for personal enrichment.

The sense of achievement after completing educational programmes and the motivation derived from lifelong learning, played a crucial role in overall job satisfaction. The level of organizational support was found to be a critical factor in determining the positive impact of adult education. Employers who offered financial assistance, provided time off, and fostered a supportive learning environment amplified the benefits of adult education for their employees. Supportive workplace policies and a culture that valued continuous learning, proved to be essential in fostering job satisfaction. Based on the findings, organizations were encouraged to invest in adult education programmes as a strategic approach to enhancing job satisfaction and employee retention. Providing access to relevant training and development opportunities could improve employee performance, loyalty and morale. Employers were advised to create a supportive learning environment by offering flexible schedules, financial support, and formal recognition of educational achievements.

Finally, adult education initiatives should have been tailored to meet the specific needs of employees and the evolving demands of the industry. Aligning training programmes with employees' career goals and organizational objectives would help maximize the long-term benefits of adult education.

## Limitations and Future Research

This study relied on self-reported data, which may have introduced response bias. Future research could incorporate more objective measures of job satisfaction and educational outcomes to strengthen validity. Additionally, the cross-sectional design limited the ability to draw causal inferences. Longitudinal studies would provide more robust evidence of the causal relationship between adult education and job satisfaction. The sample used in this study may not have been fully representative of all industries and geographic regions. Future research should aim to include a more diverse and representative sample to improve the generalizability of findings. Further studies could also explore additional factors influencing the relationship between adult education and job satisfaction. These may include the role of technology in education, the effects of different types of educational programmes, and the impact of organizational culture on learning engagement and satisfaction outcomes.

## Conclusion

This study underscored the positive impact of adult education on job satisfaction, highlighting the significance of continuous learning for both personal and professional development. By investing in adult education programmes and fostering a supportive learning environment, employers were able to enhance job satisfaction, improve employee retention and develop a more skilled and motivated workforce. The findings revealed that adults who engaged in ongoing learning opportunities whether through formal education programmes, professional development courses, or self-directed learning tended to report higher levels of job satisfaction. This increase in satisfaction was attributed to several factors, including the acquisition of new skills, enhanced self-efficacy, expanded career advancement opportunities, and a greater sense of personal fulfilment. Furthermore, organizations that invested in the continuing education of their employees benefited from a more competent, motivated, and committed workforce. Such investment not only improved individual job satisfaction but also contributed to overall organizational effectiveness and productivity. Therefore, both individuals and employers should have recognized the value of continuing education as a key component of career development and job satisfaction. Fostering a culture of lifelong learning and providing access to continuing education opportunities emerged as essential strategies for enhancing job satisfaction and achieving professional as well as personal growth.

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# Understanding Life of Transgender and their Challenges in Educational Institutions: Evidences from a Small Indian Town

• **Tania Sarkar**[1] • **Madhu Kushwaha**[2]

## Abstract

Gender is one of the major aspects that represent an individual's personal choice of identity. We are all aware of the existence of diverse gender identities in our society, which shows that gender is not limited to a binary identity. The perception of gender identities and their societal positions has evolved significantly. Transgender individuals are an integral part of our society. The journey from criminalising to legalising gender identity has not been easy. Still, after 2014, they have been excluded from various domains of life (socio-cultural spaces), especially in educational institutions, due to systems of domination and subjugation. Bullying, detrimental behaviour and stigma often lead to self-harm. The main objective of this article is to explore the lived experience of transgender individuals and the challenges they face in educational institutions in Balurghat, a small Indian town. For this purpose, the phenomenological case study research approach was used, where, using snowball sampling, two trans participants were chosen to conduct semi-structured interviews to discuss their experiences in educational institutions and other spaces. A thematic analysis was conducted for this study to reveal the struggles of two small-town trans individuals in their daily lives, especially in educational institutional settings.

**Keywords:** *Life of transgender, educational institutions, challenges, mental health.*

## Introduction

In India, the concept of transgender exists today but was somewhat different a decade ago. The omission of trans narratives from mainstream society has functioned as an act of silencing non-conforming genders. The term *transgender*, first used in

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psychology by John F. Oliven and later popularized by activist Virginia Prince in the 1960s, expanded in the 1990s to include gender non-binary and non-conforming individuals (Baruah, 2021). Although transgender people have existed across communities for centuries, they have established a particularly robust history of visibility in the South Asian subcontinent. Indian mythology, dating back to the Vedic Age, depicts the merging of the two sexes in different incarnations, such as Lord Vishnu as Mohini, Ardhanarishwara, and Aravan in South India (Mondal et al., 2020; Mishra, 2021). The *Transgender Persons (Protection of Rights) Act, 2019* defines a transgender person as a trans man or trans woman (whether or not such a person has undergone sex reassignment surgery, hormone therapy, laser therapy, or any other therapy), a person with intersex variations, gender queer individuals and persons with socio-cultural identities such as kinner, hijra, aravani and jogta. Intersex people are those whose sexual and reproductive anatomy does not fit typical definitions of female or male (WHO, 2016; GSRC). People whose gender identity does not match their sex assigned at birth are known as transgender (APA, 2015; Price et al., 2017; Kersey, 2018). People are often confused between transgender identity and sexuality. Transgender people, like non-transgender people, may be straight, lesbian, gay, bisexual, or asexual (APA, 2023).

The downfall in their status was systematically induced through punishment and their categorisation as a criminal tribe under the *Criminal Tribes Act, 1871*. After a long struggle, on 15 April 2014, the Supreme Court of India recognised transgender persons as the 'third gender,' thereby increasing the visibility of these identities. However, the term *third gender* itself is discriminatory, as it implies a hierarchy by labelling one gender as the 'first,' another as the 'second,' and relegating others as the 'third.' In the Indian social structure, gender inequality is deeply entrenched, and biases against non-binary persons have been perpetuated through institutional and structural forms (Kushwaha, 2017). The low visibility of transgender persons remains common (Singh & Rajesh, 2024). Across the globe, transgender students are alienated from educational institutions. They experience multiple forms of bullying - verbal, non-verbal, physical, and sexual abuse - not only from cisgender students but also from some teachers and administrative staff (Jones et al., 2015; Mohammadi et al., 2023; Mondal et al., 2020). They are bullied in various settings, including classrooms, playgrounds, sports teams, toilets, hostels, and on social media (Aslam et al., 2022). According to the 2011 Census, among 4.88 lakh transgender persons, only 56.1% are literate. Many trans students avoid schools because they cannot conform to gender stereotypes. The lack of structural support and the exclusion of sexuality and puberty education make the environment even more hostile (Jones et al., 2015). When they do pursue education, they often prefer open and distance learning due to

fear of bullying and limited financial assistance (Singh & Rajesh, 2024). The existing literature is devoid of in-depth qualitative information. Therefore, this study is designed to provide first-hand insights into the lived experiences of transgender individuals.

## Objective

The purpose of this research is to explore the lived experiences of transgender individuals and the challenges they face in educational institutions in Balurghat, a small Indian town.

## Methods

This study used the hermeneutic phenomenological case study method to investigate the cases. The hermeneutic phenomenological design was deemed appropriate as it reflected personal experiences and perceptions, thereby providing a deeper understanding of the phenomenon (Aslam et al., 2022). Using snowball sampling, two participants (TG1 and TG2) were chosen from Balurghat town in the Dakshin, Dinajpur district of West Bengal. Semi-structured interviews were conducted separately with each respondent. The interviews, held at locations preferred by the respondents, took place in a one-on-one setting and lasted approximately 30 to 40 minutes. During the discussions, the respondents shared their life experiences and the challenges they encountered in educational institutions, including schools and colleges. The interviews were conducted in Bangla, the mother tongue of both the respondents and the researcher, who shared the same language identity. Both participants were adults aged 24 and 29, respectively, and identified themselves as transgender. The interviews were recorded with the participants' consent. The interview data was first transcribed by the interviewer and then translated into English from Bangla. Following translation, data visualization was carried out, and codes were generated from the initial data set. The codes were primarily descriptive and in vivo in nature (Saldana, 2013). For the thematic analysis, Clarke and Braun's (2006) six-step framework was applied.

## Reflexivity and Ethical Considerations

The first author is a researcher, social activist, and cis woman from a lower-middle-class family in West Bengal, while the second author is a researcher, senior teacher educator and cis woman from Uttar Pradesh. Both authors have previously worked on gender issues and share a common ideology. Throughout the research process, we consciously attempted to 'bracket' our presumptions (Patton, 2015)

and maintained continuous awareness of our own experiences - both positive and negative - to minimize their impact on the study (Kwok et al., 2021). Prior to conducting the interviews, the objectives of the research were explained, and consent forms were completed by the participants. To enhance the trustworthiness, credibility, and accuracy of the data, prolonged engagement with the participants, member checking and peer checking were undertaken (Mohammadi et al., 2022). To ensure confidentiality and protect participants' anonymity, pseudonyms were used.

## Result and Discussion

### Identification of Femininity

The journeys of TG1 and TG2 shed light on their early recognition of gender identity, the challenges they faced, and their eventual assertion of femininity. TG1, a 24-year-old from a lower middle-class Brahmin family, discovered her true self during adolescence. While studying in the 7th or 8th grade at the government boys' school, she realized she was different from others. Her attraction towards boys and her love for traditionally feminine activities such as playing with cooking pots and dolls helped her realize the identity of her gender. 'When everyone was playing with cars or bat balls, that time I loved to play with cooking pots and dolls,' she recollected about her childhood. Born in a male body, she always felt an intense sense of womanhood. She is now doing her graduation in Sanskrit honours after completing D.El.Ed. and looks forward to becoming a complete woman once she is financially independent. TG1 is also an excellent makeup and craft artist, using her creativity to embrace and express her femininity.

TG2 is a 29-year-old transwoman belonging to a middle-class Brahmin family. She has also followed the same path in the journey of self-discovery. She too was in a government boys' school and completed a postgraduate in Sanskrit literature. Nowadays, she is an independent dance teacher and makeup artist at Balurghat and expresses her femininity through her artistic skills. 'While I was promoted from class 5 to class 6, I observed a distinct difference between myself and others. While a masculine demeanour was emerging in others, a delicate feminine elegance began to emerge within me, which I express through my dance.' The delicate elegance took the ground of her persona and through her performances, she expressed her true self and by the makeup in which she applied. Through transition surgery and an ID card, TG2 also has completed one of her important steps toward transformation.

The stories of TG1 and TG2 depict when their consciousness regarding femininity started during their adolescence period. Both were very clear that they didn't share

the characteristics as defined and expected by the society concerning gender roles. Their personalities were influenced by the tendency to show their femininity, their attractions towards like-minded persons, and their modes of expression. The stories of these two trans individuals show how they were able to manoeuvre in a world that imposed such rigid gender norms and where self-awareness, creativity and financial independence played important roles in forming their identity.

## Parental Acceptance and Social Stigma

Parental support plays a crucial role in helping children to navigate the challenges of social stigma, particularly for those whose identities do not conform to societal norms. In the cases of TG1 and TG2, their experiences with family acceptance reveal contrasting journeys shaped by social and economic factors. TG1's family struggled to accept her true identity, reacting with chaos and disapproval when she first revealed herself. She felt pressured to adopt gender roles assigned to her based on her birth sex, making her feel like an outcast and dehumanized. Constant societal interrogation made her feel like an 'animal from a different planet.' Initially, her family dismissed her appearance, believing the situation would eventually resolve itself. However, over time, as nothing changed, her father started pulling away from her. As she said, 'Over time, as my father began to realise that no change was happening within me, he started to distance himself.'

TG2, unlike TG1, got a better environment within her family, although acceptance wasn't instantaneous. Her parents, though they did not understand her identity at first, later accepted her for who she was. She said, 'Though I got support from my parents and cousins, some family members and neighbours were not okay with that. My father, being a purohit, faced a lot of criticism: Why is his son like this?' This situation clearly highlights that when we step outside the patriarchal norms of society, it inevitably subjects both the financially affluent class and the lower middle class to scrutiny. Another point worth mentioning here is that when someone belongs to a lower-income group, they find it far harder to overlook such social stigma compared to those who are financially well-off. These experiences make it evident that while TG2's siblings and family members accepted her for who she was, TG1's family could not extend the same acceptance to her in the same way.

## Meagre Support at Educational Institutions

The meagre support and pervasive exploitation that transgender students experience in educational institutions are brought out through participants' experiences.

Both participants faced constant bullying, including verbal and non-verbal abusive behaviour, teasing and mockery by making derogatory comments like 'hijra, chakka, gay'. TG1 expressed that her school life was more stressful than college. Beyond verbal humiliation, other students from the class imitated her walk, mocked her expressions and even made her uncomfortable by touching her inappropriately. Sometimes, to protect herself, she did not showcase her true self. She said, 'Few parents were there who strictly told their children not to interact with me; if they did this, they would behave like her.' Although her experience in college was not pleasant, there were times when some students would write offensive words on paper, roll them into balls and throw them at her. After these incidents, she thought of quitting college. But later, she realised that doing so would only empower the bully further, and with that thought, she decided not to stop going to college. While elaborating on the scenario in college, she mentioned that: 'Sometimes in my college classroom, there may be empty space next to me, but they tried to avoid that place. They are saying nothing, but their actions are speaking.'

TG2's story was not any different. Before her transition, she pretended to be a girl, enduring mockery and ridicule. Initially, the hostility drove her to consider self-harm, but with time, she grew stronger. While female friends provided her with a circle of acceptance, male classmates and some teachers continued to ignore her existence. She mentioned how some teachers, not comfortable with her association with dance, avoided her in the classroom. Both participants acknowledged the glaring lack of inclusivity in educational institutions, with teachers often confused about how to involve transgender students in gender-segregated activities. Their stories underscore the urgent need for systemic changes. An inclusive curriculum, gender-neutral facilities, and sensitization programmes for teachers and students form the critical steps toward the formation of a trans-friendly environment. As TG1 aptly said, 'Education related to gender is crucial from childhood. If teachers and students are sensitised appropriately, a trans-friendly environment can be built. Only then can harassment and bullying be effectively mitigated.' These changes are necessary not only to protect transgender students but also to affirm their right to exist and thrive in educational spaces.

### Inner Turmoil, Conflict and Unavailability of Information

TG1 often found it incredibly hard to express her thoughts to others. Being in a boys' school with her identity felt even more challenging, particularly because of the bullying she endured. Reflecting on her experience, she said, 'I was so young, and I didn't know how to respond to what was happening. There were countless times I

thought about never leaving my house again.' She was constantly torn between inner conflict, as the expectations of society clashed with the desires of her heart, making it nearly impossible to know what was right or wrong. The scarcity of information left her no choice but to turn to YouTube, social media, and Shree Ghatak's interview in 'Ananda Bazar Patrika' for insights into her gender dysphoria. She often expressed frustration with how society, whether through ignorance or misinformation, looked at her with distorted views. Meanwhile, TG2 found solace and inspiration in the life and work of the renowned Bengali artist Rituporno Ghosh, whose courage and authenticity helped her navigate her own journey.

## Mental Health

TG1's family had never been supportive; instead, they believed that she was mentally ill. She recalled, 'My mother even took me to a government hospital to figure out what was "wrong" with me.' When suicidal thoughts came into her mind, her other trans friend always tried to console her by telling her it also happened to them. In contrast, TG2 received some support and acceptance from her family, but she still faced significant challenges, particularly because of her relationship with a cisgender man. The dynamics of this relationship, filled with a lack of acceptance and uncertainty, often led to feelings of self-doubt and self-destructive behaviour. The strain of the relationship, combined with the toll of hormonal therapy, began to affect her mental health, leading to deep trauma and stress.

## Conclusion

Transgender students encounter various forms of bullying throughout their educational journey, encompassing both verbal and non-verbal. Both individuals faced on-campus bullying, occurring in classrooms and educational institution premises. The consequences were severe, leading to depression, class absenteeism, dropping out, demotivation and suicidal tendencies (Tabassum, 2014; Afrasiabi, 2019). Life is not easy when people perform something that goes beyond social norms. These two trans participants have faced constant social scrutiny, gaze, and objectification like other transgender participants faced, i.e., bullying, exclusion, and sexual harassment. The feminine representation of these two participants' lives adversely affected them and built a dislike towards educational institutions. It is evident that there is a paucity of an inclusive environment, advocating for imparting knowledge about various aspects of gender among students and educators (Pedro et al., 2016). Over time, it becomes evident that they transcend all adversities, fortifying their resilience and systematically disregarding impediments to forge ahead. In a society where members of the

transgender community are often picturised or symbolised as either clapping on the streets or being confined to sex work, these two individuals have set an exemplary precedent. They have defied adversity and showcased their uniqueness through their remarkable contributions, be it through crafting or offering dance training selflessly, without any monetary expectation and shaping their own worldview.

### Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship, or publication of this work.

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# Students' Perceptions of Social Science: A Study on Perceptions and Learning Outcomes of Professional Undergraduate Students

• **Woryaomi Kharay**[1]

## Abstract

Undergraduate professional students of Medhavi Skills University, Sikkim, displayed an unfriendly attitude towards a social science subject at the beginning of their first-semester academic session. Ostensibly, the idea of studying social science alongside professional courses did not resonate well with the perceptions and expectations of the students. The current study investigates whether students' perceptions of the subject changed over time and whether these perceptions have any relation to their learning outcomes. A Google form questionnaire, which included both closed-ended and open-ended questions, was administered to students at the end of the semester to capture their perceptions of the course. The respondents were then segregated into two groups: (a) those who exhibited positive perceptions and (b) those who exhibited negative perceptions. The final semester grades between the two groups were compared to understand the linkages between perceptions and learning outcomes. Surprisingly, it was found that while the majority of students were appreciative of the course after completing it, there was no positive correlation between students' perceptions and learning outcomes. In fact, the reverse appeared to be true in the study.

**Keywords:** *Students' perceptions, learning outcomes, multidisciplinary education, professional education, National Education Policy 2020 (NEP - 2020).*

## Introduction

Do perceptions influence learners' learning outcomes? The subject matter of inquiry is not new. Several studies have already been carried out to understand the nature of the relationship between perceptions and learning outcomes. With some exceptions, the majority of research studies indicate that students' perceptions have

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a bearing on their learning outcomes (Ferreira & Santoso, 2008; Greene et al., 2004; Lizzio et al., 2002; Struyven et al., 2005; Vereijken et al., 2018). For example, while Atkins (2018) and Pors (2001) concluded that there is no significant correlation between students' perceptions and learning outcomes, other studies have linked positive student perceptions with improved learning outcomes or academic achievement (Camiel et al., 2016; Ramsden, 1992, 1997; Struyven et al., 2005). This raises several questions: Why do certain students hold unfavourable views about social science subjects (Alvarez-Martinez-Iglesias et al., 2021; Gunawan, 2020; Irmiya et al., 2019)? Can negative attitudes—or rather, negative perceptions—demotivate and hinder students' learning progress? What are the factors that underpin students' negative and/or positive perceptions (Adekum et al., 2017; Ibem et al., 2017)? How can attitudinal issues among students be addressed to facilitate better learning outcomes? These are some of the pertinent questions this article seeks to explore.

The study acquires particular importance, as the investigation took place within an unconventional teaching-learning ecosystem. Previous studies on students' perceptions and learning outcomes have been conducted in diverse contexts and settings (Entwistle, 1998; Entwistle et al., 2002; Lucas, 2001; Posser & Trigwell, 1997), contributing richly to the already vast body of knowledge in education. Yet, there is little evidence of similar studies focusing on students' perceptions of social science within a professional education setting. Few research studies have specifically examined undergraduate professional students' perceptions of social science subjects vis-à-vis their learning outcomes. Some research suggests that students in general education courses often suffer from low motivation, as the subject matter does not align with their actual interests (Missildine et al., 2013). The implications may be even more acute in an ecosystem where students pursue programmes primarily to secure employment. Since social science is often regarded as irrelevant in professional and vocational education (Lind, 2006; Robinson, 1979; Watkins, 1946)—a misconception, of course—students in professional education may not attach as much importance to the subject as to their core area of study. This may have undesirable effects on their learning outcomes in the subject. Against this backdrop, this article attempts to examine the relationship between professional undergraduate students' perceptions of social science and their learning outcomes through empirical research at Medhavi Skills University, Sikkim, India.

## Contextual Background

Medhavi Skills University (MSU) is a newly established institution founded under the Medhavi Skills University Act, Sikkim, which was passed in June 2021 by

the Sikkim State Assembly. The university currently offers various professional programmes at the undergraduate level and intends to introduce postgraduate programmes in the upcoming academic session. All students are enrolled in professional courses such as Optometry, Hospitality, Tourism, Business Administration, Computer Applications, and Health Care Services. The student body is drawn largely from diverse socio-economic backgrounds within Sikkim, with only a negligible number from outside the state. Most students aspire to enter the formal workforce immediately after completing their studies. Classroom interactions revealed that students had come from varied educational backgrounds. A majority had studied liberal arts and natural sciences at the senior secondary level, while a smaller number pursued commerce, business studies, finance and accounting, or computer and information technology.

MSU is fully aligned with the newly introduced National Education Policy 2020 (NEP 2020). In line with NEP 2020, the university has adopted an educational ecosystem in which a multidisciplinary approach forms an integral part of all professional programmes. The emphasis on multidisciplinary education is to provide multiple perspectives that encourage meaningful engagement in knowledge production processes while preparing the future workforce. More importantly, multidisciplinary education aims to produce well-rounded individuals (and future professionals) who are socially and culturally sensitive, morally responsible, economically productive, and politically well-informed citizens. With this aim, the university offers a compulsory social science course entitled *Introduction to Contemporary Social Problems (ICSP)* across all undergraduate programmes. However, the intention of this multidisciplinary approach was not initially well received or fully understood by many students. The idea of studying social science alongside professional courses did not align with their perceptions or expectations. Course instructors and the academic management frequently faced backlash from the student community. *"Why should I study a social science subject (ICSP) when I have enrolled in a professional programme to find a job?"* was a common refrain among dissatisfied students. One female student, name withheld for privacy, was particularly insistent—tearfully demanding to be allowed to drop the course. Against this backdrop of strong resistance and negative perceptions, it becomes significant to investigate the causal relationship, if any, between students' attitudes toward ICSP and its implications for their learning outcomes.

## Literature Review

A societal misperception about non-professional and non-natural sciences subjects or liberal arts (which include classical subjects such as rhetoric and logic, languages,

and even modern-day social sciences such as sociology, anthropology, psychology, etc.) that was prevalent in 20th century American society is well captured by Watkins (1946) in the following manner: "When a member of the faculty in business administration is presented in public lecture, he is quite likely to be regarded as a paragon of practical wisdom, but when a member of the faculty in liberal arts is presented, he is regarded condescendingly as the impractical inhabitant of an ivory tower" (p. 77). Nowadays, social sciences subjects are considered indispensable for preparing young learners as well-rounded individuals. Yet, many societies and individuals still regard social sciences as secondary to practical subjects and/or natural sciences in the educational hierarchy (Gunawan, 2020). Does the gap in students' perceptions of social sciences significantly influence their learning outcomes? Available literature, with some caveats, indicates that negative perceptions can negatively influence students' learning outcomes. Negative perceptions foster unhealthy attitudes toward learning, demotivate students, and can seriously impair learning abilities (Isen, 2004). Negative stereotypes may give rise to antagonistic responses and false conclusions (Bierhoff, 1989). Positive perceptions, on the other hand, are correlated with enhanced learning outcomes (Alvarez-Martinez-Iglesias et al., 2021).

Positive and healthy perceptions can stimulate motivation for learning, enhance skill performance, and improve academic achievement (Lizzio et al., 2002). Entwistle et al. (2002) even claimed that students' perceptions matter more than teaching methods when it comes to academic performance. Important factors such as appropriate curriculum structure can generate positive perceptions, which in turn may positively influence students' learning outcomes (Vereijken et al., 2018). Yet none of these studies focused specifically on perceptions of social science among professional students in a skills university. As students in skills universities have specific ends in mind, it is crucial to understand their perceptions of a subject considered unrelated to their goals. The study becomes even more critical with the National Education Policy 2020 (Government of India, 2021) mandating Higher Education Institutions (HEIs) in India to adopt a multidisciplinary approach in their educational programmes. It is important to recognise that perceptions are formed over time. Perceptions are the opinions, views, and beliefs one holds about something. The formation of perceptions in young learners is greatly influenced by the kind of information they encounter in the past. Information gathered in earlier stages of life can have lasting impacts on how later information is processed. As Ferreira and Santoso (2008) note, "information received at later stages by a person is interpreted in the context of an existing mindset," which is built upon past experiences (p. 213).

What is often referred to as "belief perseverance theory" holds that people form their opinions based on previously received information, which in turn shapes how they view their surroundings. The persistence of beliefs is so strong that people tend to cling to them even in the face of glaring disconfirming evidence (Ferreira & Santoso, 2008). Thus, students' perceptions of a particular subject, whether positive or negative, are likely to be heavily influenced by prior information and experiences. Research further reveals that students' perception of social studies education is directly related to the kinds of information they encountered about the subject in earlier years (Irmiya et al., 2019). While there are several aspects to a person's perceptions, Mallum and Haggai (2002) identified four factors that influence students' perceptions: interest, need, experience, and ability. This calls for careful selection and strategic implementation of curriculum, teaching materials, sources, and methods. Modifications in curriculum, teaching styles, and learning environments have been observed to positively contribute to students' perceptions of the subjects being taught (Ferreira & Santoso, 2008). Suitable curriculum design and engaging learning environments stimulate positive perceptions in students, which are essential for attaining higher learning outcomes (Lucas, 2001). After all, people learn more easily and efficiently about things that interest them. Considering the differential needs and capacities of individual students is equally important to ensure better learning outcomes. Irmiya et al. (2019) suggested linking curriculum to learners' past experiences and presenting motivational and "thought-provoking" questions to stimulate positive perceptions in students (p. 274). Greater motivation, in turn, leads to greater learning achievement (Alvarez-Martinez-Iglesias et al., 2021).

There are several other factors that impact students' perceptions. Gender and parental background may also influence their perceptions about certain subjects. For instance, Alvarez-Martinez-Iglesias et al. (2021) found that female students were more appreciative of the values of competencies they learned in geography and history classes, while students whose parents had higher levels of education showed more positive perceptions of ICT skills and language competencies (p. 7). Even classroom structure may influence students' attitudes toward learning (Greene et al., 2004). Adekum et al. (2017) opined that classroom structure and learning spaces support the implementation of student-centered teaching-learning systems. Features such as space expansion, flexible classroom layouts, and technology integration are considered indispensable aspects of 21st-century learning spaces (p. 2). Ibem et al. (2017) also found that the learning environment is closely related to students' energy, focus, and comfort, which in turn impacts their learning outcomes (p. 6285). Therefore, the overall learning environment is crucial for fostering positive perceptions in students. Yet, linking students' perceptions with the attainment of

learning outcomes can be complex. Academic achievement and learning outcomes are influenced by many other factors beyond perceptions alone.

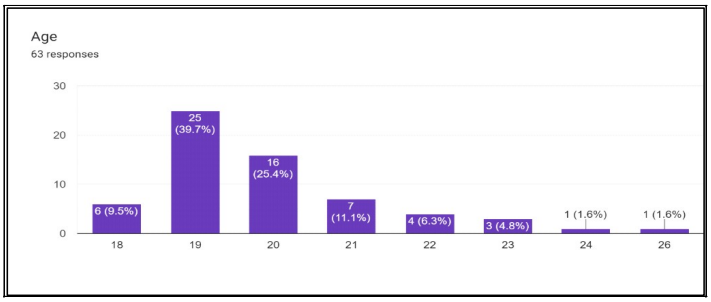
Family background, for example, cannot be overlooked. Several studies show that children from economically disadvantaged families fare poorly in academic achievement. For instance, Duncan and Murnane (2016) found that children from low-income families struggled with reading comprehension in science and social studies due to limited vocabulary and background knowledge. More affluent families, by contrast, are better positioned to provide resources and opportunities at home and outside—such as nutrition and learning materials—that underprivileged families often lack. Thus, a student may still perform poorly despite positive perceptions about a subject if their home environment is not supportive. Therefore, care must be taken when assessing the link between perceptions and learning outcomes. On the other hand, there is a stronger urgency for educational institutions and teachers to revamp and adapt teaching strategies to meet the diverse needs of students from varying socio-economic backgrounds.

## Research Methods

The research adopts a mixed-methods approach. Qualitative data were collected through a structured questionnaire administered to participants, while quantitative data, comprising final semester grades, were obtained from the Head of the Centre for Assessment and Certification at the university. The participants included students from four different classroom sections representing various professional programmes in the university. All participants had been taught by the researcher during the first semester of the academic session spanning October 2022 to March 2023. A combination of open-ended and closed-ended questions was distributed via a Google Form to a total of 147 students. Of these, 71 students submitted responses, of which 8 were deemed invalid after initial scrutiny. The final valid response rate was therefore 42.85%. At the beginning of the semester, students displayed considerable discontent, frequently questioning the rationale for including a social science subject in professional programmes. This attitudinal issue was addressed by course instructors and the academic management through briefings and classroom interactions. To examine students' perceptions after exposure to the course *Introduction to Contemporary Social Problems (ICSP)*, a set of questions was posed to participants at the close of the semester. Based on their feedback, students were categorised into two groups: (a) those who exhibited unfavourable views of ICSP, and (b) those who demonstrated a positive attitude toward the course. To assess learning outcomes, the final semester grades of these two cohorts were compared using spreadsheet analysis.

## Results

### Fig. 1 Age Composition




The above figure representation reflects the age composition of the respondents. They belong to diverse age groups ranging from 18 years to 26 years of age. A large number of the respondents are aged 19 years. These young students are energetic, enthusiastic with high hope and aspirations for future career.

### Fig. 2 Sex Composition

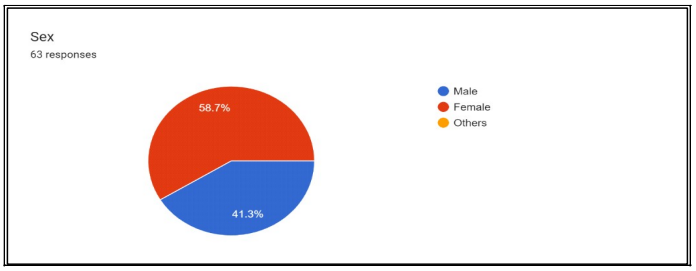
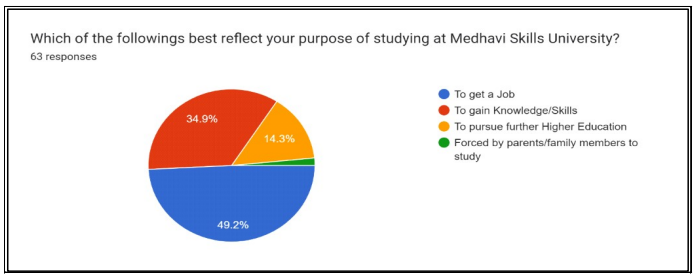


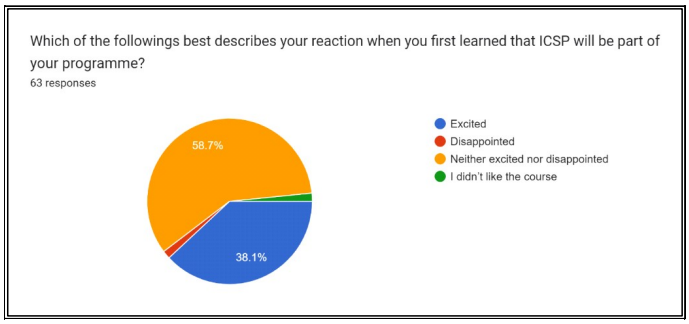

Figure 2 shows female respondents account for 58.7 %, whereas male respondents account for 41.3 %

### Fig. 3 Purpose of Studying



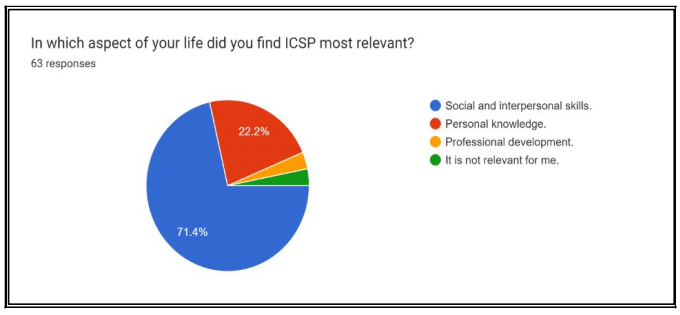
When asked about the purpose of studying at Medhavi Skills University, 49.2 % of the respondents replied that they aspire to get a job after the completion of their programmes. Fewer number of students accounting for 34.9 % wished to gain knowledge and skills; 14.3 % of the students wanted to go for further higher education, with the exception of one student being forced by parents or family members to get enrolled at the university.

**Fig. 4 Initial Perceptions of Social Science**



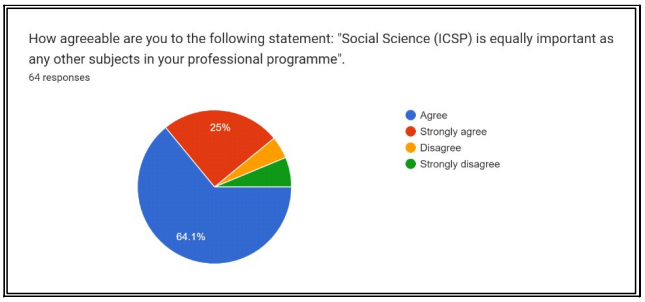

The respondents were then asked about their initial reaction on learning that social science (ICSP) will be a compulsory course in their programmes. 38.1% of the respondents said they were excited; majority of the students accounting for 58.7% remained neutral, they were neither excited nor disappointed. Whereas a fraction of the respondents didn't like the course and felt disappointed. However, the above figure needs to be treated with caution as the respondents have already had sufficient exposure with the course. Their actual answers could have differed, had the question been put at the very start of their academic session.

**Fig. 5 Relevance of Social Science**



When asked about the relevance of ICSP course, 71.4% of the students found it relevant in terms of learning social and interpersonal skills, 22.2% found it important for personal knowledge, 3.2% for professional development and another similar percentage of the respondents found the course irrelevant.

**Fig. 6 Post-exposure Perceptions of Social Science**




When enquired if social science (ICSP) was equally important as other subject studied in their professional programmes, 64.1% of the respondents agreed with the statement, 25% students strongly agreed; whereas 4.7% and 6.3% of the students disagreed and strongly disagreed, respectively.

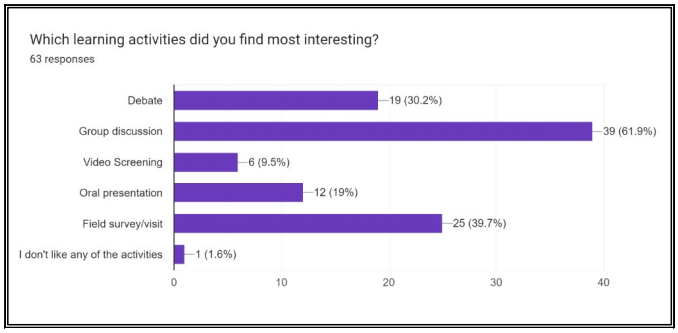
**Table 1: Mapping Perceptions with Learning Outcomes**

Statement: "Social science (ICSP) is equally important as any other subject in your professional programme"

| **Responses** | **% of students** | **Average final semester grades** | |
|---|---|---|---|
| Agree | 64.1 | 65.25 | |
| Strongly agree | 25 | 67.50 | 65.87 |
| Disagree | 4.7 | 69.33 | |
| Strongly disagree | 6.3 | 72.75 | 71.28 |

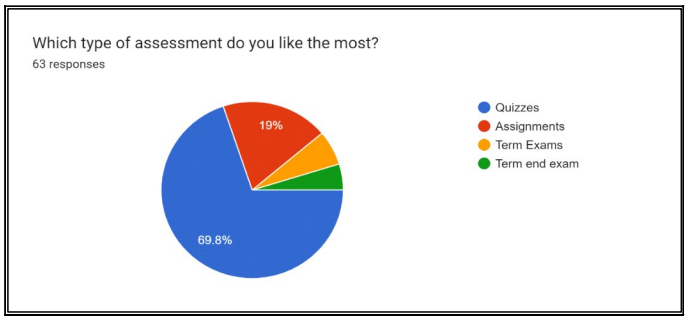
As the above table reflects, there seems to be no positive correlation between students' perceptions of social science and learning outcomes. In fact, other than a minor difference in the achievement level (2.25 %) between those who "agree" and "strongly agree", the average final semester grade or performance of students increases as the level of disagreement goes up. In other words, students who harbour negative perceptions seem to perform better than those who viewed the course positively.

**Fig. 7 Preferred Learning Activities**



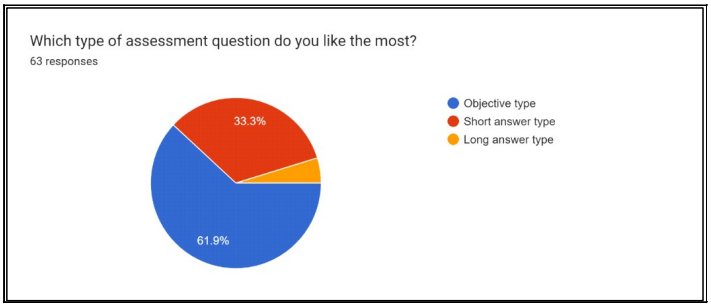

The instructors of the course incorporate a variety of learning activities. Going by the above figure group discussion happens to be the most favoured learning activity with 61.9% of the respondents opting for it, followed by field visit/survey (39.7%), debate (30.2%), oral presentation (19 %), and video screening with 9.5 % being the least favoured learning activity. A fraction of the respondents accounting for 1.6 % did not like any of the activities.

**Fig. 8 Preferred Assessment Type**




A variety of continuous assessments are in place in the university. Each week of learning is immediately followed by online quizzes, which happened to be their most preferred type of assessment with 69.8 % of the respondents opting for it; followed by assignments 19 %, term exams 6.3 %, and term end exam 4.7. It is pertinent to mention that quizzes were designed for a maximum of 2 marks, assignments 5 marks, term exams 15 marks, and term end exam 30 marks. It seems students' preference of the type of assessment diminishes as the assessments type become more rigorous.

**Fig. 9: Preferred Assessment Questions**




Similarly, students prefer lighter and shorter type of assessment questions with 61.9 % of them choosing objective type questions, 33.3 % of them opting for short answer type questions, and 4.7 % of students preferring long answer type questions.

## Discussion and Conclusion

This research examines students' perceptions of the social science subject. Unlike in traditional universities, these students are enrolled in professional programmes to find suitable careers. Therefore, it is likely that their aspirations and expectations of learning differ from students enrolled in traditional universities. Hence, the chances for rejection of social science as part of their professional programmes are high. Students' perceptions about learning rest on several factors. Research indicates that family background and parents' education (Alvarez-Martinez-Iglesias et al., 2021), among others, have significant influence on students' attitudes and motivation for learning, even pointing out that children from higher levels of income perform better in schools and colleges (Duncan & Murnane, 2016). The students involved in the study mostly belong to low-income families and semi-educated parents of Sikkim state. A majority of the parents (87.3%) earn below 200,000 rupees annually, with the exception of 4.8% earning between 500,000–1,000,000 rupees per annum. About 11.1% of the parents are educated up to graduate or post-graduate levels, whereas the rest are either illiterate or educated only up to 10th or 12th standards. The data in Figure 3 indicates that a majority of the respondents (49.2%) were admitted to the university with an aim to get employment, 34.9% to gain knowledge and skills, and only 14.3% aspired to pursue higher education, while 1.6% were compelled by parents. Considering these factors, it becomes clear why several students were not ready to accept social science as part of their professional programmes in the beginning. Social science is generally understood to be unrelated to future career advancement.

One respondent wrote:

*I didn't like the subject. We joined Medhavi for paramedics…I don't think ICSP needs to be studied by a paramedic student.*

Thus, a general sense of rejection, confusion, and disapproval of the course was reflected in classrooms during the early days of the semester. To get a sense of their initial attitudes, students were asked about their reactions to the inclusion of social science in their programmes. A majority of students (58.7%) remained noncommittal—they were neither excited nor disappointed. About 37.5% felt excited about the course, 1.6% were disappointed, and another 1.6% did not like the course. It is important to note that this question was asked after they had long been exposed to the course. Their actual reactions may have differed had the same question been asked at the very beginning of the session. In any case, it is safe to assume that no more than 37.5% initially felt positively about the course. To compare initial reactions with current perceptions, another similar question was posed. In response to whether social science is equally important as their professional subjects, 64.1% and 25% "Agreed" and "Strongly agreed," respectively, while 4.7% and 6.3% "Disagreed" and "Strongly disagreed." This implies that the percentage of students who now view social science positively increased to 89.1% from the initial 37.5%. The rest continue to hold negative perceptions.

This improvement in students' perceptions of social science (ICSP) is attributable to several factors. The first is related to reasoning and explanation by instructors and university management regarding the inclusion of the subject. Misgivings and apprehensions were promptly addressed, which reduced the initial resistance. Another factor is pedagogy. The course delivery at the university is different from traditional approaches, with emphasis on practice-based learning. Unlike the usual theory-heavy delivery of social science, at Medhavi Skills University an hour-long lecture is followed by a "learning by doing" session, where students apply theoretical knowledge to real-life situations. Customisation of delivery to make the course relevant to students' lives helped mitigate resistance. One student validated the relevance by writing:

*In my point of view ICSP is not only a subject but it is life's basic need of all humans. It shows the humanity and characteristics of human behaviour; by studying ICSP we come to know about social problems and their solutions.*

Active learning took place in various ways. Respondents' preferred activities, in descending order, were: group discussion (60.9%), field visit/survey (40.6%), debate

(29.7%), oral presentation (18.8%), and video screening (9.4%). Such activities and pedagogical practices require constant improvement in line with learners' needs. Appropriate curriculum structure and teaching methods are linked with positive perceptions and motivation (Irmiya et al., 2019; Vereijken et al., 2018). Moreover, assessment practices need to be flexible and tailored to individual needs. At MSU, students may choose oral or written assessments. They also preferred lighter and shorter forms of questions. Such preferences, though seemingly minor, are crucial for meaningful and positive learning experiences (Alvarez-Martinez-Iglesias et al., 2021). Perhaps the biggest concern in course delivery was that students' negative perceptions could hinder learning outcomes. Instructors were apprehensive that students unwilling to embrace ICSP as openly as other courses might fail to achieve the desired results. Indeed, this concern motivated the study. Yet, as reflected in Table 1, there appears to be no positive correlation between perceptions and learning outcomes. Among students who "Agreed" or "Strongly agreed" that ICSP was as important as other subjects (89.1%), the average final grade was 65.87%. Meanwhile, those who "Disagreed" or "Strongly disagreed" (11%) averaged 71.28%. This result corresponds with findings by Pors (2001) and Atkins (2018), who also reported no significant correlation between perceptions and outcomes. Similarly, Gilboy et al. (2014) found that students who had negative perceptions of flipped classrooms registered better learning outcomes. The current study confirms that positive perceptions do not necessarily lead to higher outcomes—in fact, the opposite may be true. This reinforces the view that academic achievement depends on multiple factors beyond perceptions alone, which future research should continue to explore.

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# An Inquiry into COVID-19 Influence on the Educational Well-Being of College-Going Students in Katwa Municipality and Surrounding Villages of West Bengal, India

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## Abstract

The COVID-19 pandemic disrupted education in rural and semi-urban areas, including Katwa Municipality and nearby villages in West Bengal. This study examined factors influencing the scholastic well-being of 131 college-going students during the 2020–2022 lockdowns. Primary data were collected via an online survey in February 2022, covering socio-demographics, technology access, and student perceptions. Descriptive statistics, normality tests, chi-square analysis, and binary logistic regression were applied. Results showed that 7.6% of students temporarily withdrew from online classes, 26.7% faced increased educational costs, and 24.4% engaged in part-time work. Major constraints included poor internet connectivity, limited academic support, and inadequate home study spaces. Regression analysis revealed that the ability to study at home (OR $\approx$ 2.5) and strong institutional support for online learning (OR $\approx$ 1.8) significantly increased perceived learning and satisfaction, while a decline in educational quality reduced satisfaction (OR $< 0.6$). The study recommends blended learning, robust digital infrastructure, teacher training, and targeted support to strengthen educational resilience.

**Keywords:** *COVID-19, education, well-being, normality, chi-square, binary logistic regression.*

## 1. Introduction

The COVID-19 pandemic triggered a global educational crisis, disrupting established academic systems through prolonged institutional closures and an abrupt

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transition to online learning. This disruption had a severe impact on students' emotional health and academic well-being, particularly in underprivileged and vulnerable communities. Global research, including studies by Duraku and Hoxha (2021) and Kara (2022), has underscored challenges such as student overload, reduced efficacy of online education, and heightened psychological distress among college students. Fruehwirth et al. (2021) reported a significant rise in anxiety and depression among college students due to isolation and the challenges of distance learning, while Singh et al. (2020) noted that these effects varied depending on developmental stage, pre-existing vulnerabilities, and socio-economic status. Paul et al. (2020) and Shukla et al. (2021) found that 74% of students in one survey experienced academic difficulties due to inadequate access to digital infrastructure, highlighting the digital divide's role -particularly in rural India - in undermining educational continuity. Similarly, Chaudhary et al. (2021) observed that more than half of Indian students suffered from moderate to severe anxiety or depression during the lockdown. Complementing these insights, spatial analyses by Biswas et al. (2022), Mondal et al. (2021), and Ghosh et al. (2020) documented regional disparities in West Bengal in terms of social vulnerability, infection rates, and preparedness, alongside setbacks in schooling.

Despite an extensive body of national and international literature, localized research on the academic and psychological impacts of the pandemic in semi-urban and rural contexts such as Katwa Municipality and its surrounding villages remains limited. Existing studies largely centre on metropolitan or pan Indian perspectives, often neglecting the compounded challenges faced by students in tier-3 towns, where socio-digital marginalization, economic hardship, and infrastructural deficits converge. To address this gap, the present study examines the scholastic well-being of college-going students in Katwa and nearby rural areas during COVID-19. It aims to identify key factors shaping academic experiences, assess resource availability and psychological support, and recommend targeted, context-specific interventions to strengthen educational resilience. Building on prior research, it emphasizes the importance of understanding local contexts, recognizing determinants of well-being, and proposing strategies to mitigate academic and psychological challenges during future crises.

## 2. Materials and Methods

### 2.1 Online Survey

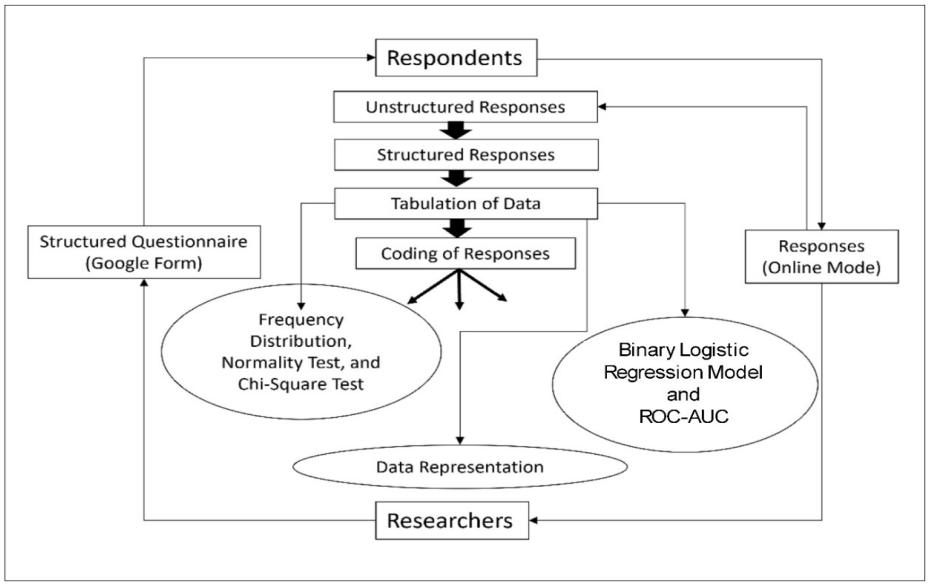
The primary survey for this study was designed and administered via Google forms to assess college-bound students' educational experiences and overall well-

being during the COVID-19 pandemic. A structured questionnaire with 40 questions was developed based on the study's objectives. Items 27–40 employed a 5-point Likert scale (Likert, 1932) to capture perceptions on online learning, academic challenges and institutional support. In February 2022, Katwa College, a key degree college in Katwa Subdivision, West Bengal, distributed the survey link through WhatsApp groups targeting students from Katwa municipality and nearby villages. Over the survey period, 131 valid responses were collected and used for analysis.

### 2.2 Data Tabulation and Coding

The collected responses were systematically tabulated and coded to facilitate statistical analysis. Based on the number of response categories, an alphabetical code was allocated to each response option. The codes for binary responses were Yes-1 (1) and No-2 (0), three-category responses were 1, 2, 3, and five-category (Likert-type) responses were 1, 2, 3, 4, and 5. Sequential alphabetical letters were used to designate responses to queries with more than five possible answers. Table 1 displays the entire coding system for every question. Binary logistic regression analysis, non-parametric testing and descriptive statistics were subsequently performed using these coded replies.

**Figure 1. The methodological framework of the present study**



### 2.3 Statistical methods and techniques

This study employs a mixed-methods approach (Figure 1), combining qualitative and quantitative techniques through various statistical procedures. Frequency distribution has been measured using the following formula.

$f_i = \frac{n_i}{N}$ (Franzese and Iuliano, 2019),

where

$f_i$ is the absolute frequency of the observed value of $i$

$n_i$ is the number of times the value $i$ appears in the data set

$N$ is the number of individuals in the population.

Frequency percentage was calculated as "the percentage for a particular value is calculated by dividing the frequency of a given value by the total number of scores in the data set" (Hayes, 2015). Descriptive statistics were computed and normally tested using Kolmogorov-Smirnov and Shapiro-Wilk, with hypothesized distribution parameters (Kendall & Stuart, 1973) assessed against traditional critical values (Drezner et al., 2010).

$$F_e(x) =^{def} \frac{1}{n}\sum_{i=1}^{n} I_{x_i < x}$$

where

$X_1, X_2,\ldots,X_n$ are the individual sample values and $I_{x_i < x}$ is the usual indicator function.

Shapiro-Wilk test (Shapiro and Wilk, 1965) has been formulated as

$$W=\frac{(\sum_{i=1}^{n} a_i X_{(i)})^2}{\sum_{i=1}^{n}(X_i-\bar{X})^2},$$

where

$X_{(1)} \leq X_{(2)} \leq \cdots \leq X_{(n)}$ are the ordered values of a sample $X_1, X_2, \ldots, X_n$, and ai are tabulated coefficients. Here, the null hypotheses indicate that the distribution is normal. The tests have been performed using a 95 % confidence interval.

The non-parametric statistical test has been performed using the Chi-Square $(\chi)^2$ test (Pearson, 1900) which is denoted as

$$\chi^2=\sum_{i=1}^{n} \frac{(O_i-E_i)^2}{E_i}$$

where,

$O$ stands for the observed frequency,

$E$ denotes the expected frequency, with the test performed at $(k–1)$ degrees of

freedom (Turhan, 2020) and a 95% confidence interval (Rana & Singhal, 2015) under the null hypothesis that the dataset follows a specified distribution.

To enhance interpretability and satisfy model assumptions, Likert-scale variables widely used in educational research to gauge attitudes and perceptions were recoded into binary categories for logistic regression analysis (Harpe, 2015; Menard, 2010; Norman, 2010). Two principal educational outcome variables were used as binary dependents: Q.31 (perceived learning from online college classes) and Q.40 (satisfaction with the educational system and assessment procedure). Responses of 1–2 were coded as "Low Perceived Learning/Low Satisfaction" (0), while 3–5 indicated "High Perceived Learning/High Satisfaction" (1). Predictor variables, drawn from Q.27–Q.30 and Q.32–Q.39, encompassed perceived educational deterioration, financial stress, digital platform utility, home learning conditions, peer and teacher interaction, and opinions on online systems. Multicollinearity was evaluated using the Variance Inflation Factor (VIF), with variables above the threshold (VIF > 10) specifically, Q.30 (usage of digital tools) and Q.35 (instructional support) removed before model estimation to ensure stability and accuracy. The binary logistic regression models, following Worcester and Wilson (1943) and Berkson (1944), used dichotomous coding (0 = No, 1 = Yes). Park's (2013) framework enabled identifying significant predictors of learning and satisfaction during COVID-19, producing robust, interpretable models.

$$logit(y)=ln(odds)=ln\left(\frac{p}{1-p}\right)=\alpha+\beta\chi$$

where

*P* is the probability of an interesting outcome, and $\chi$ is the explanatory variable. The parameters of logistic regression are $\alpha$ and $\beta$ . *Odds* are the ratio between the probability of success (event occurs or 1) and the probability of failure (event does not occur or 0) (Park, 2013).

## 3. Results

### 3.1 Frequency Distribution and Descriptive Statistics

The descriptive statistics and frequency distribution of 131 college students from Katwa municipality and nearby villages highlight their socio-demographic profile and educational experiences during the COVID-19 pandemic (Table 1 and Table 2). Most were rural residents (60.3%), female (50.4%), and aged 20–25 years (72.5%). The majority identified as Hindu (88.5%) and general caste (61.8%), with 91.6% studying arts and 64.1% enrolled in general degree programmes. Economically, 80.9% belonged to non-BPL (Below Poverty Line) households, mainly dependent on farming (40.5%), business (15.3%), and services (12.2%). While 94.7% studied from home,

74.8% attended online classes, mostly via Google Meet (90.8%) using Jio mobile data (77.1%); only 13% owned smartphones. During lockdown, 48.9% received scholarships, but 26.7% faced higher expenses. Likert-scale results showed strong teacher support (mean = 3.649), utility of Google Classroom/WhatsApp (mean = 3.664), and preference for offline classes (mean = 3.519), but low teacher contact (mean = 2.534). Concerns included financial/health impacts, social media distraction and declining standards, with modest satisfaction and mixed views on future online learning.

**Table 1. Frequency distribution of the respondents based on the categories of responses**

| Serial Number | Questions | Categories of Responses | Frequency (Number of respondents) | Percent |
|---|---|---|---|---|
| Q.1 | 1. You - | Female | 66 | 50.4 |
| | | Male | 65 | 49.6 |
| Q.2 | 2. You live in - | In the village | 79 | 60.3 |
| | | In the city | 52 | 39.7 |
| Q.3 | 3. Your age - | Less than 20 years | 36 | 27.5 |
| | | 20 to 25 years | 95 | 72.5 |
| Q.4 | 4. Which department do you study? - | Science | 5 | 3.8 |
| | | Arts | 120 | 91.6 |
| | | Commerce | 2 | 1.5 |
| | | B.Ed. | 2 | 1.5 |
| Q.5 | 5. What subject do you study? - | Bachelor (Honours course) | 47 | 35.9 |
| | | General (pass course) | 84 | 64.1 |
| Q.6 | 6. Your Institutional Religion - | Hindu | 116 | 88.5 |
| | | Muslim | 15 | 11.5 |
| Q.7 | 7. Your caste- | General | 81 | 61.8 |
| | | OBC-A | 10 | 7.6 |
| | | OBC-B | 14 | 10.7 |
| | | SC | 26 | 19.8 |
| Q.8 | 8. Your family- | BPL | 25 | 19.1 |
| | | Not BPL | 106 | 80.9 |
| Q.9 | 9. How many members are there in your family? - | Less than 5 people | 93 | 71.0 |
| | | 5 to 10 people | 35 | 26.7 |
| | | More than 10 people | 3 | 2.3 |
| Q.10 | 10. Your family's source of income - | Farming | 53 | 40.5 |
| | | Permanent worker (or public labourer) | 11 | 8.4 |
| | | Work under an employer (work in someone's house/shop | 11 | 8.4 |
| | | Any work related to transport (bus/auto/van/rickshaw) | 1 | .8 |
| | | Own a shop (market or another place) | 5 | 3.8 |
| | | Migrant workers (a family member moves to another place) | 2 | 1.5 |
| | | Service | 16 | 12.2 |
| | | The business | 20 | 15.3 |
| | | Others | 9 | 6.9 |
| | | Not attached to any permanent job | 3 | 2.3 |

| | | | | |
|---|---|---|---|---|
| Q.11 | 11. You commute to college - | From home | 124 | 94.7 |
| | | Rented house | 4 | 3.1 |
| | | Lives in a mess or a hostel | 3 | 2.3 |
| Q.12 | 12. Distance of home from your college - | Moreover, you have to go by train or bus | 51 | 38.9 |
| | | Not too much can go by bicycle or toto | 72 | 55.0 |
| | | The college is near the house, within walking distance | 8 | 6.1 |
| Q.13 | 13. In college after lockdown - | Traveling from home | 125 | 95.4 |
| | | Returned to the mess/rented house/hostel | 6 | 4.6 |
| Q.14 | 14. Studies were going on during the lockdown - | It was running both online and offline | 23 | 17.6 |
| | | Online at home | 98 | 74.8 |
| | | Education has completely stopped | 10 | 7.6 |
| Q.15 | 15. Cost of education during lockdown - | Decreased slightly | 33 | 25.2 |
| | | It was the same as before | 63 | 48.1 |
| | | Had increased | 35 | 26.7 |
| Q.16 | 16. Did you receive any scholarship? - | Yes | 64 | 48.9 |
| | | No | 42 | 32.1 |
| | | I have applied, but have not received it yet | 25 | 19.1 |
| Q.17 | 17. During the lockdown, some of the family's work was completely stopped - | Yes | 57 | 43.5 |
| | | No | 58 | 44.3 |
| | | Left the job but now rejoined that job or another | 16 | 12.2 |
| Q.18 | 18. Did you engage in any other activities besides studies during the lockdown? - | Yes | 32 | 24.4 |
| | | No | 99 | 75.6 |
| Q.19 | 19. Apart from studies, various other subjects that you learn were completely closed in the lockdown- | Yes | 64 | 48.9 |
| | | No | 10 | 7.6 |
| | | Not involved in anything other than studies | 57 | 43.5 |
| Q.20 | 20. During the lockdown, the college classes were held more through online means - | Google meet | 119 | 90.8 |
| | | Others | 12 | 9.2 |
| Q.21 | 21. Do you have a smartphone / mobile phone? - | Yes | 128 | 97.7 |
| | | No | 3 | 2.3 |
| Q.22 | 22. You have a computer desktop/laptop/tab - | Yes | 17 | 13.0 |
| | | No | 114 | 87.0 |
| Q.23 | 23. The Internet connection provider on your phone or computer is mainly - | Reliance Jio | 101 | 77.1 |
| | | Airtel | 14 | 10.7 |
| | | Vodafone (VI) | 8 | 6.1 |
| | | Having another SIM card | 1 | .8 |
| | | Broadband / Wi-Fi available | 5 | 3.8 |
| | | No internet on mobile/computer | 2 | 1.5 |

| | | | | |
|---|---|---|---|---|
| Q.24 | 24 Classes during Lockdown - | From your phone/computer | 118 | 90.1 |
| | | From someone else's phone/computer | 13 | 9.9 |
| Q.25 | 25. Passed all Papers of Online Examination - | Yes | 130 | 99.2 |
| | | No | 1 | .8 |
| Q.26 | 26. In which semester are you currently studying? - | 1st Semester/2nd Semester | 53 | 40.5 |
| | | 3rd Semester/4th Semester | 49 | 37.4 |
| | | 5th Semester/6th Semester | 29 | 22.1 |
| Q.27 | 27. Do you think that the standard of education has decreased the most during the lockdown and its aftermath? - | 1. The standard has not decreased at all | 6 | 4.6 |
| | | 2. The standard has slightly decreased | 25 | 19.1 |
| | | 3. The standard has moderately decreased | 32 | 24.4 |
| | | 4. The standard has decreased a lot | 49 | 37.4 |
| | | 5. The standard has completely decreased | 19 | 14.5 |
| Q.28 | 28. How do you feel about the impact of the financial loss of the family and any physical illness during the lockdown and its aftermath on education? - | 1. No impact at all | 12 | 9.2 |
| | | 2. Somewhat impacts | 24 | 18.3 |
| | | 3. Moderate impact | 49 | 37.4 |
| | | 4. Many impacts | 32 | 24.4 |
| | | 5. Total impact | 14 | 10.7 |
| Q.29 | 29. Do you think that due to the lockdown and its subsequent use of various social media (Facebook, Instagram) has harmed learning? - | 1. No harm at all | 14 | 10.7 |
| | | 2. A little harm | 24 | 18.3 |
| | | 3. Moderate harm | 36 | 27.5 |
| | | 4. A lot of harm | 43 | 32.8 |
| | | 5. Total harm | 14 | 10.7 |
| Q.30 | 30. Do you think Google Classroom/Gmail and WhatsApp have helped you in conducting online studies, taking study notes, and conducting online exams during the lockdown and its aftermath? - | 1. Not at all | 6 | 4.6 |
| | | 2. Somewhat helpful | 14 | 10.7 |
| | | 3. Moderately helpful | 31 | 23.7 |
| | | 4. Very helpful | 47 | 35.9 |
| | | 5. Completely helpful | 33 | 25.2 |
| Q.31 | 31. How much do you think you have learned from online college classes during the lockdown and beyond? - | 1. Not at all | 13 | 9.9 |
| | | 2. A little | 23 | 17.6 |
| | | 3. Moderate | 49 | 37.4 |
| | | 4. A lot | 41 | 31.3 |
| | | 5. Completely | 5 | 3.8 |
| Q.32 | 32. How much do you think you have been able to study at home during the lockdown and its aftermath? - | 1. Not at all | 7 | 5.3 |
| | | 2. A little | 24 | 18.3 |
| | | 3. Moderate | 58 | 44.3 |
| | | 4. A lot | 33 | 25.2 |
| | | 5. Completely | 9 | 6.9 |
| Q.33 | 33. Do you feel that your contact with teachers has decreased during the lockdown and its aftermath? - | 1. Not at all | 29 | 22.1 |
| | | 2. Slightly decreased | 38 | 29.0 |
| | | 3. Somewhat decreased | 32 | 24.4 |
| | | 4. Much decreased | 29 | 22.1 |
| | | 5. Completely decreased | 3 | 2.3 |

| | | | | |
|---|---|---|---|---|
| Q.34 | 34. Do you feel that your contact with classmates (class friends) has decreased during the lockdown and its aftermath? - | 1. Not at all | 21 | 16.0 |
| | | 2. Slightly decreased | 39 | 29.8 |
| | | 3. Somewhat decreased | 30 | 22.9 |
| | | 4. Much decreased | 35 | 26.7 |
| | | 5. Completely decreased | 6 | 4.6 |
| Q.35 | 35. How much help do you feel you have received from teachers during the lockdown and beyond? - | 1. No help at all | 3 | 2.3 |
| | | 2. A little help | 12 | 9.2 |
| | | 3. Moderate help | 36 | 27.5 |
| | | 4. A lot of help | 57 | 43.5 |
| | | 5. A complete help. | 23 | 17.6 |
| Q.36 | 36. How much do you support the online education system in the current context? - | 1. Not at all | 27 | 20.6 |
| | | 2. A little support | 33 | 25.2 |
| | | 3. Moderate support | 40 | 30.5 |
| | | 4. A lot of support | 17 | 13.0 |
| | | 5. Fully support. | 14 | 10.7 |
| Q.37 | 37. Do you think offline classes should be introduced completely in the current situation? - | 1. Should not be introduced at all | 18 | 13.7 |
| | | 2. Few classes should be introduced | 14 | 10.7 |
| | | 3. Some classes should be introduced | 28 | 21.4 |
| | | 8. Most classes should be introduced | 24 | 18.3 |
| | | 5. All classes should be introduced | 47 | 35.9 |
| Q.38 | 38. Do you think the online examination system is convenient? - | 1. Not at all convenient | 28 | 21.4 |
| | | 2. Very little convenient | 12 | 9.2 |
| | | 3. Slightly convenient | 37 | 28.2 |
| | | 4. Very convenient | 35 | 26.7 |
| | | 5. Most convenient | 19 | 14.5 |
| Q.39 | 39. Do you think the online education system will be important as an alternative to the offline education system in the future, in such a situation? - | 1. Will not be important at all | 24 | 18.3 |
| | | 2. Will be very little important | 14 | 10.7 |
| | | 3. Will be a little important | 28 | 21.4 |
| | | 4. Will be very important | 48 | 36.6 |
| | | 5. Will be most important | 17 | 13.0 |
| Q.40 | 40. How satisfied are you with the education system, examination procedures, and your results in the lockdown and its aftermath? - | 1. Not at all satisfied | 18 | 13.7 |
| | | 2. Very little satisfied | 21 | 16.0 |
| | | 3. Slightly satisfied | 42 | 32.1 |
| | | 4. Very satisfied | 38 | 29.0 |
| | | 5. Completely satisfied | 12 | 9.2 |

**Table 2. Descriptive statistics of the respondents based on categories of the perception (Question Number-27-40)**

| Question Number | Mean | Median | Variance | Standard Deviation | Standard Error |
|---|---|---|---|---|---|
| 27 | 3.382 | 4 | 1.192 | 1.0916 | 0.0954 |
| 28 | 3.092 | 3 | 1.222 | 1.1056 | 0.0966 |
| 29 | 3.145 | 3 | 1.356 | 1.1644 | 0.1017 |
| 30 | 3.664 | 4 | 1.225 | 1.1067 | 0.0967 |
| 31 | 3.015 | 3 | 1.046 | 1.0227 | 0.0894 |
| 32 | 3.099 | 3 | 0.921 | 0.9596 | 0.0838 |
| 33 | 2.534 | 2 | 1.282 | 1.132 | 0.0989 |
| 34 | 2.74 | 3 | 1.332 | 1.1542 | 0.1008 |
| 35 | 3.649 | 4 | 0.907 | 0.9521 | 0.0832 |
| 36 | 2.679 | 3 | 1.543 | 1.242 | 0.1085 |
| 37 | 3.519 | 4 | 2.021 | 1.4215 | 0.1242 |
| 38 | 3.038 | 3 | 1.806 | 1.344 | 0.1174 |
| 39 | 3.153 | 3 | 1.715 | 1.3096 | 0.1144 |
| 40 | 3.038 | 3 | 1.375 | 1.1728 | 0.1025 |

**Figure 2. Frequency distribution of the respondents (Question Number-27-40)**

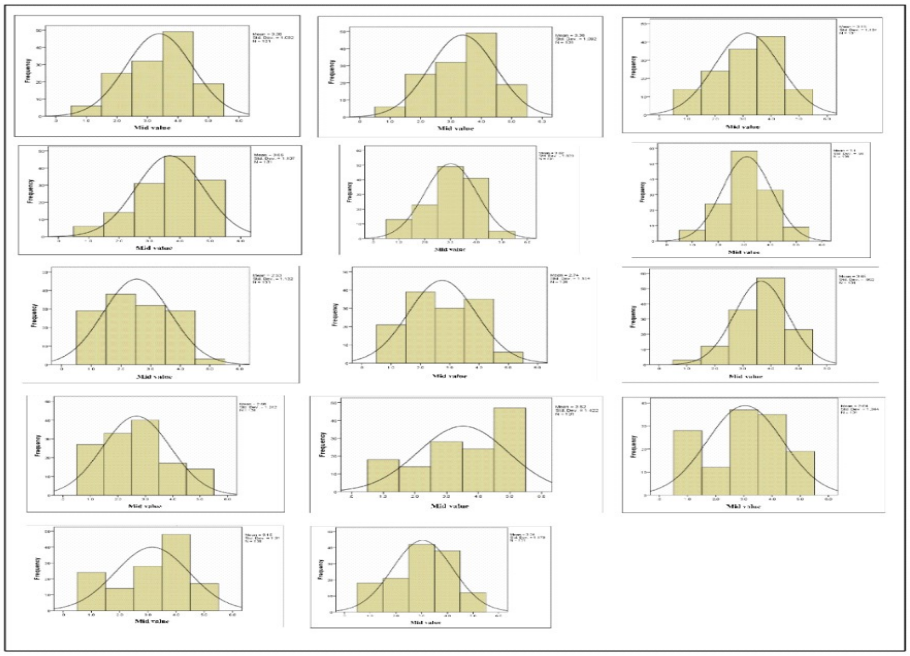
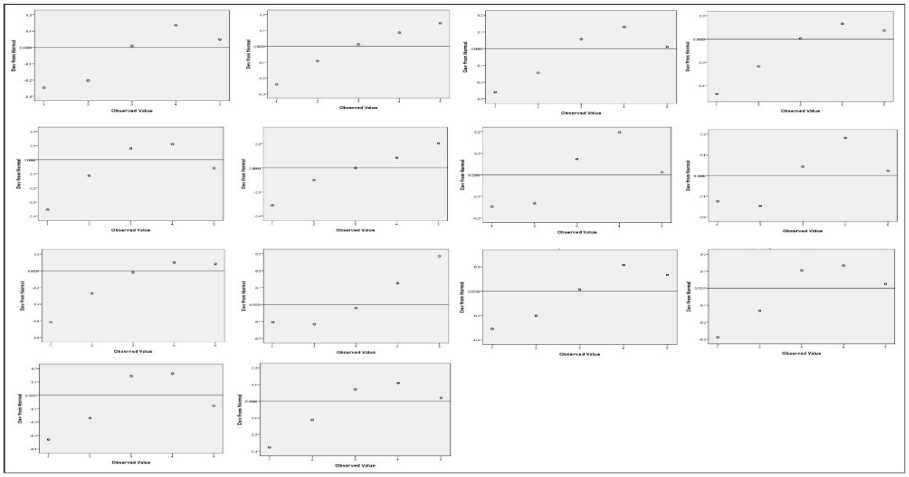


**Figure 3. Detrended normal Q-Q plots of the observed value (X-axis), and deviation from normal (Y-axis) of the responses (Question Number-27-40)**



### 3.2 Normality Test

The Shapiro-Wilk and Kolmogorov-Smirnov tests assessed the normality of perception-based responses (Q.27–40). Under the null hypothesis of normality, all items returned p-values < 0.001, rejecting the hypothesis (Table 3). Shapiro-Wilk values ranged from 0.848 to 0.914, and Kolmogorov-Smirnov statistics from 0.166 to 0.255, confirming non-normality. This likely reflects varied learning outcomes, emotional responses and unequal access during lockdown. Histograms (Figure 2) and detrended Q-Q plots (Figure 3) visually indicate clustering and skewness. Consequently, skewed distributions justified the application of binary logistic regression and non-parametric statistical methods for further analysis.

### 3.3 Chi-Square Test

The Chi-Square test was employed to examine the independence of perception-based responses (Q.27–40), considering the confirmed non-normality. The null hypothesis assumed independence, while the alternative suggested interdependence. Substantial chi-square values ($p < 0.001$) for all variables (Table 4) revealed strong interconnectedness among student perceptions. Prominent concerns included reduced educational quality ($\chi^2 = 38.733$), financial and health disruptions ($\chi^2 = 34.687$) and adverse effects of social media on learning ($\chi^2 = 25.985$). Students recognized the

value of online learning ($\chi^2 = 52.397$), home study effectiveness ($\chi^2 = 65.908$), and digital tools like Google Classroom ($\chi^2 = 40.412$). Opinions on online learning and assessments ($\chi^2 = 17.969–27.359$) were mixed, while reduced peer ($\chi^2 = 26.366$) and teacher ($\chi^2 = 27.740$) interactions were significant. Both Monte Carlo and asymptotic significance levels below 0.001 confirmed strong correlations. Graphical outputs of observed/expected frequencies and residuals are presented in Figure 4.

**Table 3. Test of normality (Responses of Question Number-21-40)**

| Question Number | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| 27 | .234 | 131 | .000 | .899 | 131 | .000 |
| 28 | .192 | 131 | .000 | .914 | 131 | .000 |
| 29 | .204 | 131 | .000 | .906 | 131 | .000 |
| 30 | .230 | 131 | .000 | .881 | 131 | .000 |
| 31 | .219 | 131 | .000 | .891 | 131 | .000 |
| 32 | .222 | 131 | .000 | .901 | 131 | .000 |
| 33 | .193 | 131 | .000 | .891 | 131 | .000 |
| 34 | .197 | 131 | .000 | .900 | 131 | .000 |
| 35 | .255 | 131 | .000 | .880 | 131 | .000 |
| 36 | .166 | 131 | .000 | .901 | 131 | .000 |
| 37 | .210 | 131 | .000 | .848 | 131 | .000 |
| 38 | .183 | 131 | .000 | .884 | 131 | .000 |
| 39 | .237 | 131 | .000 | .871 | 131 | .000 |
| 40 | .189 | 131 | .000 | .906 | 131 | .000 |
| a. Lilliefors Significance Correction | | | | | | |

**Table 4. Chi-square test (Responses of Question Number-21-40)**

| Test Statistics | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q. 27 | Q. 28 | Q. 29 | Q. 30 | Q. 31 | Q. 32 | Q. 33 | Q. 34 | Q. 35 | Q. 36 | Q. 37 | Q. 38 | Q. 39 | Q. 40 |
| Chi-Square | | | 38.733[a] | 34.687[a] | 25.985[a] | 40.412[a] | 52.397[a] | 65.908[a] | 27.740[a] | 26.366[a] | 68.504[a] | 17.969[a] | 25.069[a] | 17.206[a] | 27.359[a] | 26.137[a] |
| df | | | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Asymp. Sig. | | | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .001 | .000 | .002 | .000 | .000 |
| Monte Carlo Sig. | Sig. | | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .000[b] | .008[b] | .000[b] | .000[b] |
| | 95% Confidence Interval | Lower Bound | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | Upper Bound | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 | .023 |

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 26.2.

b. Based on 131 sampled tables with starting seed 2000000.

**Figure 4. Graphical plot of observed frequencies, expected frequencies and residual values of the Chi-square test (Question Number-27-40; Left-sided vertical axis: Residual values, Right-sided vertical axis: Observed and expected frequencies, Horizontal axis: Categories of Response)**

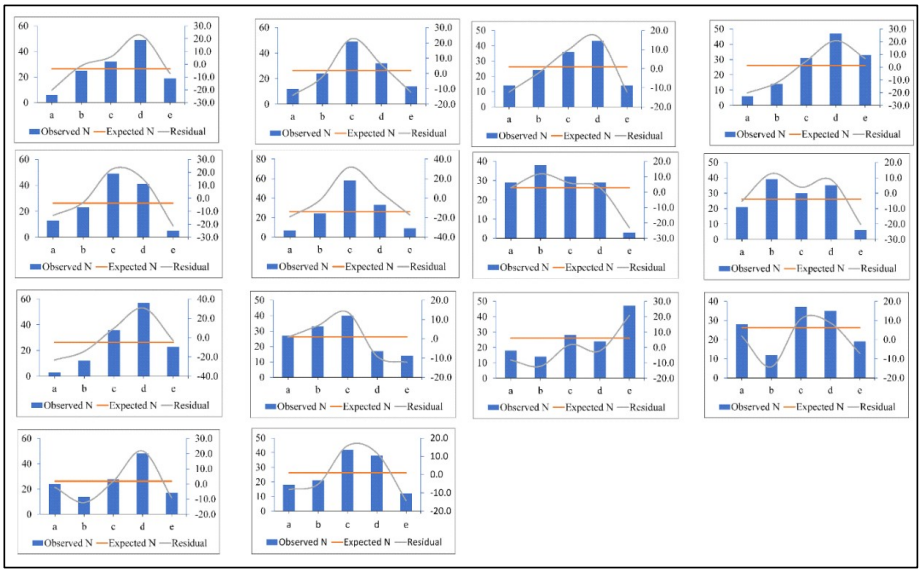
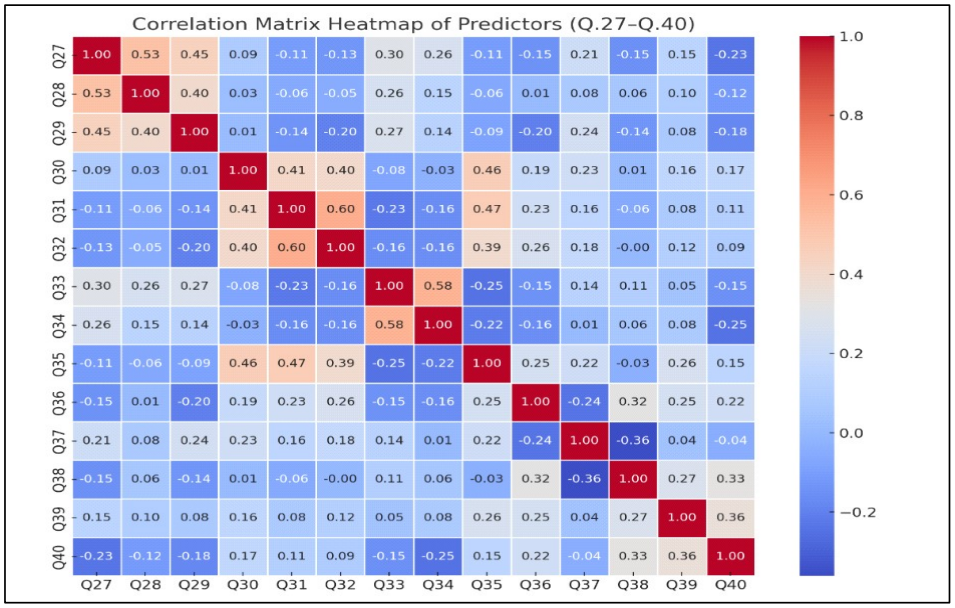



**Figure 5. Correlation matrix heatmap of predictors (Question Number 27-Question Number 40)**



### 3.4 Binary Logistic Regression Models

The correlation matrix of indicators, shown in Figure 5, presents relationships between variables, particularly Q.27 (perceived decline in education standards) and Q.40 (satisfaction with the education system), in a heatmap. Notable correlations include Q.33–Q.34 (less interaction with teachers and classmates, r = 0.58), Q.31–Q.35 (online learning and teacher assistance, r = 0.47), and Q.30–Q.35 (use of digital platforms and teacher assistance, r = 0.46). As all values remained below the multicollinearity threshold of 0.7, regression analysis was justified. Two binary logistic regression models were applied (Figures 6-9, and Figures 11-14; Table 5 and Table 6): Model 1 predicted perceived learning from online courses (Q.31), and Model 2 predicted satisfaction with the education system (Q.40). Dependent variables were recorded (1 = high, 0 = low), and multicollinear predictors (Q.30, Q.35) with VIF > 10 were excluded. Model 1 achieved 79% accuracy, with capacity to study at home (Q.32, OR > 2.5) and online learning support (Q.36, OR H" 1.8) as significant predictors. Model 2 achieved 76% accuracy; a perceived decline in quality (Q.27, OR < 0.6) predicted dissatisfaction, while Q.31, Q.32, and Q.36 predicted satisfaction. ROC-AUC (Receiver Operating Characteristic-Area Under the Curve) values indicated moderate but significant discrimination (0.669 and 0.664). Diagnostic plots, including ROC curves, LOWESS (Locally Weighted Scatterplot Smoothing) fits, and probability scatterplots, confirmed model suitability during the pandemic.

**Table 5. Model coefficients and odds ratio (Dependent Variable Q. N. 31)**

| | **Coefficient** | **Odds Ratio** | **P-Value** | **CI Lower** | **CI Upper** |
|---|---|---|---|---|---|
| const | -1.1258 | 0.324391 | 0.317728 | -3.33425 | 1.082639 |
| Q27 | 0.032337 | 1.032865 | 0.902345 | -0.4842 | 0.548875 |
| Q28 | -0.27379 | 0.760494 | 0.281145 | -0.77169 | 0.224114 |
| Q29 | -0.09641 | 0.908088 | 0.684342 | -0.56123 | 0.3684 |
| Q32 | 0.212954 | 1.237328 | 0.448664 | -0.33794 | 0.763848 |
| Q33 | -0.47267 | 0.623338 | 0.090958 | -1.02072 | 0.075387 |
| Q34 | 0.481622 | 1.618697 | 0.082064 | -0.06125 | 1.024493 |
| Q36 | 0.078831 | 1.082022 | 0.723286 | -0.35754 | 0.515204 |
| Q37 | 0.332733 | 1.394776 | 0.087021 | -0.04834 | 0.71381 |
| Q38 | -0.01817 | 0.981996 | 0.936029 | -0.46182 | 0.425486 |
| Q39 | -0.12496 | 0.882532 | 0.570578 | -0.55676 | 0.30684 |
| Q40 | 0.299588 | 1.349303 | 0.223441 | -0.18272 | 0.781901 |

**Table 6. Model Coefficients and Odds Ratio (Dependent Variable Q.N. 40)**

| | Coefficient | Odds Ratio | P-Value | CI Lower | CI Upper |
|---|---|---|---|---|---|
| const | -1.53891 | 0.214614 | 0.175758 | -3.76666 | 0.688832 |
| Q27 | 0.552294 | 1.737234 | 0.050631 | -0.00152 | 1.106107 |
| Q28 | -0.34939 | 0.705119 | 0.186166 | -0.86738 | 0.168603 |
| Q29 | 0.12571 | 1.133953 | 0.607792 | -0.35436 | 0.605781 |
| Q31 | 0.105598 | 1.111375 | 0.713649 | -0.45841 | 0.669608 |
| Q32 | 0.14808 | 1.159606 | 0.64833 | -0.48828 | 0.784436 |
| Q33 | -0.00162 | 0.998381 | 0.995249 | -0.535 | 0.531756 |
| Q34 | -0.23753 | 0.788574 | 0.359375 | -0.74546 | 0.270403 |
| Q36 | -0.30798 | 0.734933 | 0.183711 | -0.76203 | 0.146075 |
| Q37 | -0.07741 | 0.925514 | 0.688122 | -0.45536 | 0.300548 |
| Q38 | 0.112662 | 1.119254 | 0.617916 | -0.33002 | 0.555346 |
| Q39 | 0.550133 | 1.733483 | 0.010777 | 0.127267 | 0.972998 |

Figure 6. Classification plot (Predicted Variable Q.N. 31: High Learning) Figure 7. Confusion matrix (Predicted Variable Q.N. 31: High Learning) Figure 8. ROC-AUC (Predicted Variable Q.N. 31: High Learning) Figure 9. Predicted probability with the non-linear trend (Predicted Variable Q.N. 31: High Learning)

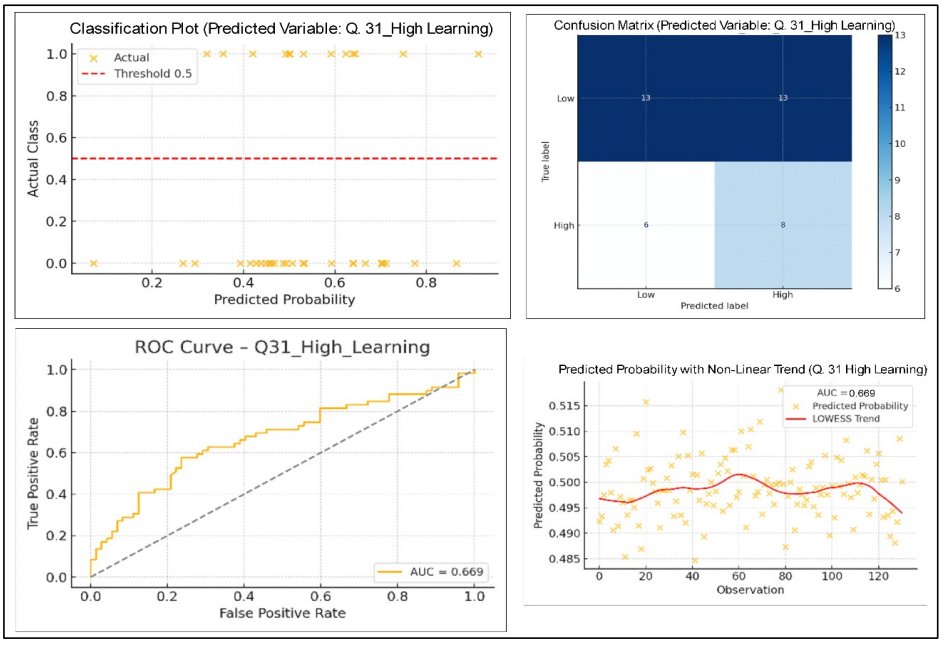


**Figure 10. Predicted Probability with respondents' labels (Predicted Variable Q.N. 31: High Learning)**

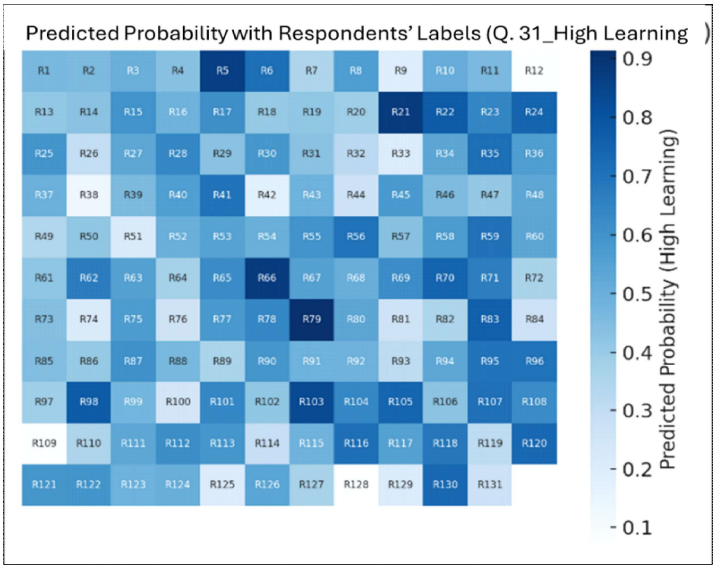



**Figure 11. Classification plot (Predicted Variable Q.N. 40: High Learning) Figure 12. Confusion matrix (Predicted Variable Q.N. 40: High Learning) Figure 13. ROC-AUC (Predicted Variable Q.N. 40: High Learning) Figure 14. Predicted probability with the non-linear trend (Predicted Variable Q.N. 40: High Learning)**

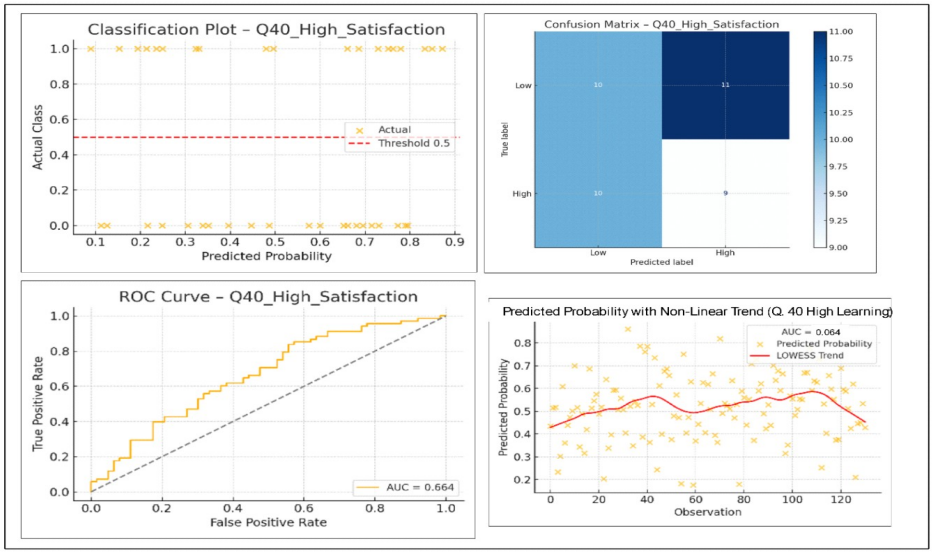
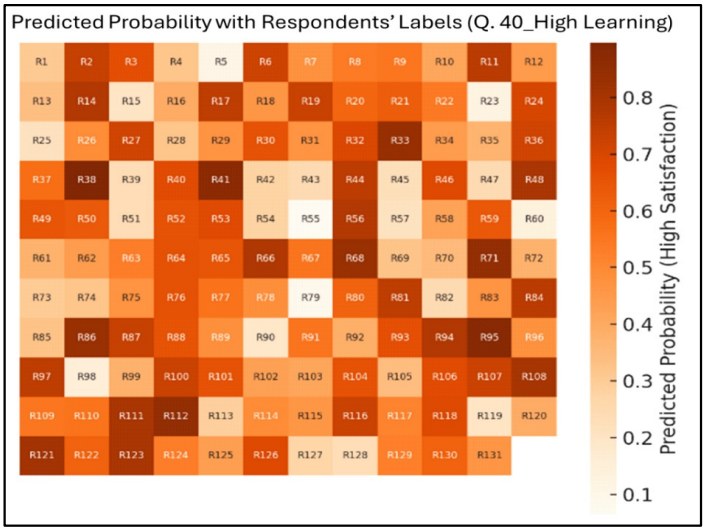


**Figure 15. Predicted probability with respondents' labels (Predicted Variable Q.N. 40: High Learning)**




## 4. Discussion

### 4.1 Socio-Economic and Educational Status During the Lockdown

During the COVID-19 lockdowns (2020–2022), Katwa municipality in Purba Bardhaman, along with its surrounding 63 villages, experienced major academic disruptions. The area is served by institutions such as a general degree college and a teacher training college. With physical classes and hostel facilities suspended, 94.7% of students continued learning from home, and 74.8% participated in online courses.

Respondents, mostly aged 20–25, were nearly gender-balanced, with most enrolled in general degree programmes (64.1%) and arts disciplines (91.6%). Although 80.9% were from non-BPL households, many relied on livelihoods severely affected by restrictions, including farming (40.5%) and business (15.3%). Technological barriers were evident, with only 13% owning personal smartphones, though 90.8% used Jio data and 77.1% attended classes via Google Meet. Additionally, 43.5% reported job losses and reduced extracurricular engagement, reflecting the layered socio-economic and infrastructural vulnerabilities faced by semi-urban and rural students in maintaining educational continuity during the pandemic.

### 4.2 Educational Challenges and Key Influencing Factors

Chi-square analyses revealed statistically significant correlations among several perception-based factors. Although 99.2% of respondents were engaged in online education, its perceived effectiveness varied widely. Notable challenges included increased tuition costs (26.7%), reduced interaction with peers ($\chi^2 = 26.366$) and teachers ($\chi^2 = 27.740$), and inadequate home study environments ($\chi^2 = 65.908$). Digital platforms such as Google Classroom and WhatsApp ($\chi^2 = 40.412$) played a vital role, yet only 43.5% felt adequately encouraged by professors. Social media was frequently viewed as a distraction ($\chi^2 = 25.985$). Opinions on satisfaction with the education system ($\chi^2 = 26.137$) and online examinations ($\chi^2 = 17.206$) reflected both resilience and discontent, while a preference for offline classes ($\chi^2 = 25.069$) underscored the enduring value of traditional learning. These interconnected factors highlight the need for equitable policies addressing cost, access, and blended learning models. Heatmaps (Figures 10 and 15) display predicted probabilities for Q.31 (learning from online classes) and Q.40 (satisfaction with the education system, tests, and results). For Q.31, most respondents had moderate-to-high probabilities, with R6, R66, and R79 exceeding 0.8, indicating strong perceived learning. In contrast, Q.40 showed greater variability, with some (e.g., R90, R96) reporting high satisfaction and others (e.g., R5, R29) showing low contentment, reflecting mixed overall satisfaction during the lockdown.

### 4.3 Perceptions of Educational Well-Being During COVID-19

Students' subjective assessments (Q.27–40) revealed widespread concern over declining academic standards, with over 70% acknowledging financial and health impacts on learning and 37.4% reporting significant deterioration. Social media was seen as a distraction, while tools like Google Classroom and Gmail were valued for maintaining continuity. Only 17.6% reported receiving full teacher support and just 6.9% could study effectively at home. Although students recognized the role of online learning in future preparedness, active support was low (10.7%). Satisfaction with educational outcomes was modest, with 29% extremely satisfied and 32.1% satisfied. These findings indicate online learning could not fully replicate in-person instruction or institutional engagement, underscoring the need for investment in teacher training, digital infrastructure and hybrid learning models to enhance inclusion and pedagogical quality during crises.

## 5. Conclusion

The COVID-19 (Coronavirus Disease 2019) pandemic exposed persistent inequalities in access, resources and student support, severely disrupting education in Katwa municipality and surrounding rural areas. The abrupt shift to online learning highlighted challenges such as reduced teacher-student interaction, financial strain, increased educational costs and limited digital access. While platforms like Google Classroom, Gmail and WhatsApp sustained learning, few students could study effectively at home. Satisfaction with online learning was moderate, reflecting concerns over assessment fairness and instructional quality. Binary logistic regression identified online resource availability, home learning capacity and institutional support as key predictors of positive outcomes. Students with these advantages reported greater satisfaction and perceived learning gains. Despite widespread online participation, a strong preference for offline or hybrid models remained. The evidence underscores the necessity of building resilience in education through investment in digital infrastructure, sustained teacher engagement and inclusive policies that balance technological advancement with psychosocial support.

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