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FUNDAMENTAL DUTIES OF INDIAN CITIZEN

- 2 To abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- 2 To cherish and follow the noble ideals which inspired our national struggle for freedom;
- 2 To uphold and protect the sovereignty, unity and integrity of India;
- 2 To defend the country and render national service when called upon to do so;
- 2 To promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- 2 To value and preserve the rich heritage of our composite culture;
- 2 To protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;
- 2 To develop the scientific temper, humanism and the spirit of inquiry and reform;
- 2 To safeguard public property and to abjure violence;
- 2 To strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavor and achievement.

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Enhance Language Learning with Technology-Aided Instruction: An Evaluation of Malayalam Language Instruction in Postsecondary Education

P. Pratheesh* & Mary Reema**

ABSTRACT

"If we have an education, then we can rely solely on ourselves because it is something that belongs to ourselves". Particularly in higher education, language instruction is crucial since it helps students develop into competent adults. However, the conventional approach to classroom management has drawbacks of its own, and teachers are looking forward to cutting-edge tactics and technology to enhance language learning and classroom instruction. AI and other technologies will be very promising in this context. Technology-aided instruction has shown significant potential in teaching Malayalam, a complex language with distinct alphabet and pronunciation guidelines, particularly in postsecondary settings like colleges and universities. This approach can significantly improve language acquisition results for learners with varying proficiency levels. This study explores the effectiveness of technology-aided instruction in Malayalam language learning using qualitative and quantitative methods. It aims to identify barriers, design effective programs, and enhance students' learning experiences through innovative approaches.

Key words: Language Education, Language Skills, Technology in Education, Technology Guided Language Education, Technology Tools

Introduction

Higher education institutions place a high value on language education because it gives students the critical communication skills and language mastery they need to succeed in their careers. But the absence of a focus on real-world application is one of the main obstacles to language learning in Indian higher education. Conventional teaching approaches frequently overlook the development of useful communication skills in favour of concentrating on the theoretical components of language, such as vocabulary and grammatical rules (Dziuban et al., 2017). As a result, students graduate with theoretical knowledge but are ill-equipped to interact with others in real life. More interactive and experiential learning strategies that provide students the chance to hone their language abilities in real-world

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contexts are desperately needed to solve this problem.

Traditional methods and non-competent learners in postsecondary education often poses limitations, hindering the effectiveness of learning of Malayalam language, the sole language of South Indian state of Kerala. Technology-aided instruction has emerged as a promising solution to address these challenges and enhance language learning experiences in postsecondary education, particularly in Malayalam like Indian languages. Malayalam, is a complex language with distinct alphabet and pronunciation guidelines, and is a challenging language for non-native speakers to learn. The modern techno-based approach can improve language acquisition results for learners with varying degrees of proficiency.

Review of Literature

The teaching-learning process must undergo substantial changes in the 21stcentury to meet the changing needs of both educators and learners. The quick development of technology necessitates reconsidering the roles that educators and learners play as well as finding creative methods to use cutting-edge learning tools to further their academic and career goals (Veletsianos, 2010, 2016).The emerging learning technologies as tools, concepts, innovations, and improvements that have not yet gained widespread adoption in the education sector but have the potential to greatly improve teaching and learning. Artificial intelligence, robots, learning analytics, virtual, augmented, and mixed reality, among many others, are examples of these (Shadiev & Wang, 2022).According to Altinay et al. (2020), accessibility and inclusivity are important, and active engagement in education at all levels is crucial. The notion of global citizenship (UNESCO Global Citizenship Education, 2023) and the United Nations Sustainable Development Goals (UN Sustainable Development Goals, 2023) need an all-encompassing approach to education that goes beyond conventional academic topics.

The following was observed in the literature review on technology-aided instruction and its potential to improve Malayalam language education. Increased language proficiency was highlighted in researches and that TAI can result in notable gains in speaking, writing, listening, and reading comprehension (Kumar, 2018; Suresh, 2020). Others quoted the increased motivation and engagement aspect. TAI can boost students' interest and engagement in language acquisition, especially for those who learn best visually or kinaesthetically (Rajesh, 2019).Personalized learning is made possible by technology, which lets students concentrate on their areas of weakness and study at their own speed (Lekshmi, 2017).The TAI approach also provides resources available to students. According to Vijayakumar (2019), TAI can give students access to a multitude of online textbooks, videos, and language-learning apps. As a support for instructors, Sreedevi (2018) argues that technology can help teachers with lesson planning, monitoring student progress, and giving feedback.

Nevertheless, certain obstacles and restrictions were also noted. Technical difficulties, like hardware malfunctions or network problems, can reduce TAI's efficacy (Rajesh, 2019). To successfully incorporate technology into their lesson plans, teachers might require training (Lekshmi, 2017). Equity and access: A digital divide may result from

some students not having equal access to technology (Vijayakumar, 2019). Language support: According to Suresh (2020), TAI might not be able to meet the demands of students who need extra language support or who have special needs. Based these works, this study seeks to bridge the gap in research on sustainable development education by focusing on unique theoretical contributions and practical uses of emerging learning technologies, particularly in Indian languages such as Malayalam. It will then investigate existing learning models and theories, actual implementations of technology-assisted instruction, and their efficacy, as backed by empirical evidence. It also intends to encourage and facilitate future research into the creation of novel technologies and their educational applications, bridging innovation, pedagogy, and practice in technology-supported sustainable development education.

Methodology

This research endeavours to assess the present condition of Malayalam language instruction in postsecondary education, pinpoint the advantages and difficulties of technology-assisted instruction, appraise its influence on students' language ability, drive, and involvement, juxtapose its efficacy with conventional techniques, and offer suggestions for incorporating technology-assisted instruction into Malayalam language teaching.

The following potential research questions form the basis for the study's design.

* What are the prevailing patterns and obstacles in the teaching of Malayalam in higher education?
* How does the use of technology in the classroom affect students' competency in Malayalam language?
* What are the advantages and disadvantages of teaching Malayalam language using technology-assisted instruction?

A mixed-methods strategy is used for the study, integrating quantitative and qualitative data gathering and analysis techniques. Focus groups and interviews are two qualitative methods that is used to gather information about students' experiences and pinpoint obstacles to good teaching. Furthermore, the survey offers a methodical evaluation of the influence of technology on the results of language acquisition. A total of 1000 undergrad students from arts and science colleges throughout Kerala participated in the online survey conducted through a Google Form that was distributed via email and WhatsApp. The interview and focus group participants included 300 college students and 100 language educators from various arts and science colleges located in the south and central districts of Kerala state.

The collected data was tabulated and analysed using the proper and strategic statistical tools, SPSS software, which provides a quick-visual modelling environment that can accommodate models ranging from the smallest to the most complicated and contains frequencies, cross-tabulation, and bivariate statistics. This study explores novel ways to language instruction by combining descriptive and analytical research methods. As a result, the study produces insightful data that improves students' learning outcomes and guides the creation of successful language training programs.

Being able to learn and speak various languages is becoming more and more important in the linked world of today. Learning the language with essential competency is

essential for forming people's cognitive capacities and their ability to interact with people from different cultural backgrounds. Teachers are using technology to improve the learning process in order to address the increasing need for efficient language training.The youngest Dravidian language, Malayalam, is rich in literature and history and is mostly spoken in the Indian state of Kerala. In 2013, it was awarded the title of "Classical Language," designating a language having a history spanning over two millennia. Malayalam has a distinct script and grammar structure, making it a difficult but worthwhile language to master. Textbooks, lectures, and in-class interactions have historically been the mainstays of language education. Nonetheless, new avenues for captivating and immersive learning experiences have been made possible by the incorporation of technology into language instruction.

Conventional Methodology

The foundation of teaching has always been the conventional techniques of transmitting knowledge and skills to students. But as new technologies develop and the educational landscape changes, it is becoming more and more clear that traditional teaching methods may not always be the best for motivating and empowering students. This opinion is especially valid when it comes to Malayalam language instruction at the undergraduate level, as the shortcomings of conventional approaches are becoming increasingly apparent.

The interview and survey conducted with students and educators in the field of Malayalam language teaching shed light on the various problems and limitations associated with conventional teaching practices at the undergraduate level. One of the primary issues highlighted was the teacher-cantered nature of traditional methodology. In conventional teaching, the focus is primarily on the instructor, with students expected to passively absorb information through lectures and textbook readings. This approach often leads to disengagement and lack of interest among students, who may struggle to connect with the material being taught.

Table 1: Attitude towards Traditional Teaching(n-1000)

Component	Strongly Agree	Strongly Disagree	Agree	Disagree	% of Disagreement
Lecture	21%	47%	12%	20%	70%
Reading	17%	49%	13%	31%	70%
Recitation	18%	39%	16%	27%	66%
Story	29%	15%	27%	29%	44%
Question	11%	41%	13%	35%	76%
Explanation	23%	29%	27%	21%	50%
Grammar	13%	49%	11%	27%	76%

Grammar proficiency was seen as the cornerstone of traditional language education approaches, which placed an emphasis on explicit instruction and repeated practice. However, 76% of the participants disagreed with this widely held belief. Furthermore, 76% of the participants disapprove of the conventional method of asking questions in the classroom as a crucial part of teaching language. Almost all of the components included by this study, including reading, recitation, story, and explanation, had a 64.57% disagreement rate among the participants. Even yet, they prefer story and explanation parts and have a lower percentage of disagreement with these elements. Students are dissatisfied with the boring learning environment and a lack of motivation and reinforcement.

Table 2: Tabulation of Usefulness & Student's Satisfaction (n-1000)

Satisfied	Satisfactory Level	No. of Respondents	Percentage
Yes	51% -64%	178	17.8%
No	29% - 41%	822	82.2%

In terms of general usefulness and satisfaction with traditional language learning methods, 17.8% of survey respondents said they were satisfied, with agreement ranging from 51% to 64% usefulness-satisfactory. While the majority of respondents rated the conventional method as poor, agreement ranged from 29% to 41%. This study found that the majority of students who want to study in their native language at the postsecondary level are dissatisfied with traditional language instruction methods.

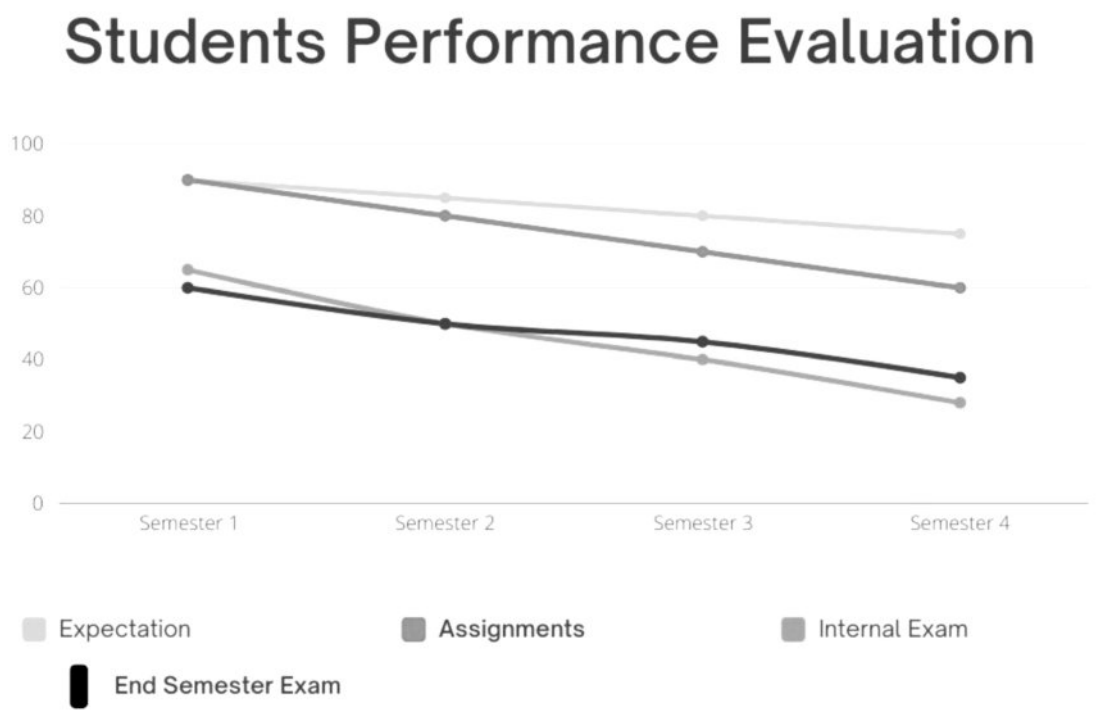
Table 3: Student Satisfaction Index (n-1000)

Scale	Mean	SD
Content	3.01	0.63
Transaction Method	3.20	0.65
Evaluation Pattern	2.71	0.57
Satisfaction	2.94	0.59
Self-Usefulness	2.81	0.51
Learner to Learner	2.50	0.47
Teacher to Learner	2.56	0.49

The average score for each scale falls short of the expected range. A standard deviation less than 0.72 indicates that participants were dissatisfied with the traditional pattern of language learning, and their replies indicated a need for methodological modification. The average score for content engagement is 3.01, and for content transactions it is 3.20. The mean difference between learner-learner and learner-instructor

was minimal (2.50 vs. 2.56). The average Internet happiness score (2.94) was somewhat higher than the midway of 1.50, while usefulness (2.81) fell just short of the satisfaction midpoint.

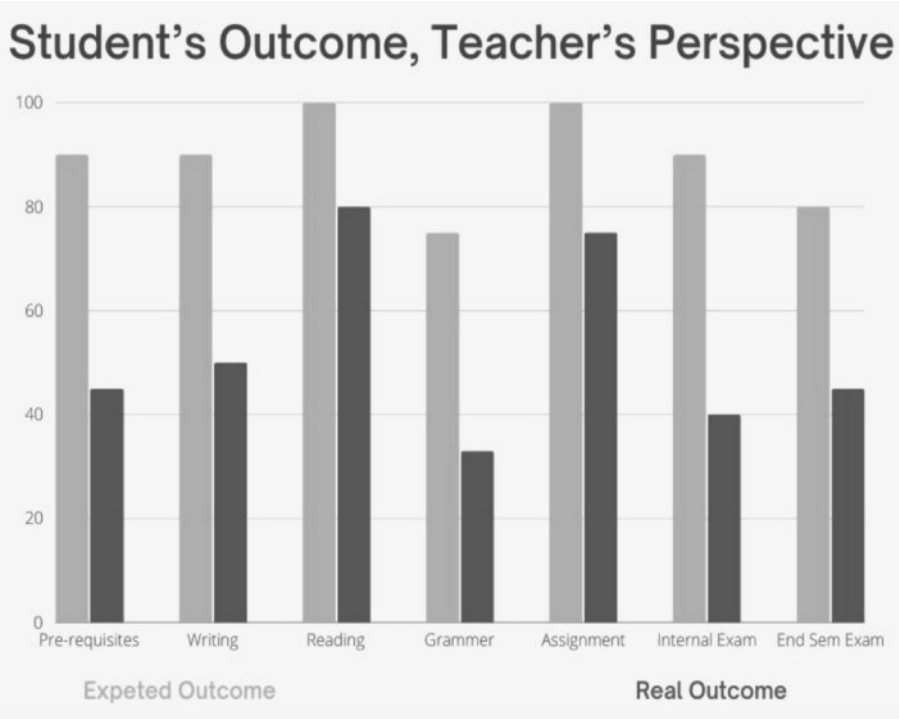
Figure 1: Students' Performance Throughout Semesters (n-1000)



It is evident that there is a sizable discrepancy between the expected and actual performance outcomes after analysing the students' reported semester-by-semester performance. Since Malayalam is their mother tongue and they believed they had mastered its reading, writing, speaking, and grammar, the students anticipated performing exceptionally well overall across the semesters and anticipated this to be reflected in their exam results. However, in practice, students' expectations of the traditional teaching-learning process are completely at odds with this, and they tend to have lower expectations for each semester because their performance on all evaluation components fell well short of expectations. The data also showed that, although teachers first scaffold their students by giving them lenient ratings for assignments and internal examinations, they eventually assigned true grades for these components after determining the average performance on the end-of-semester exam.

The following observations are made about how teachers perceive teaching languages in conventional mode and how well students succeed.

Figure 2: Student Outcomes from the Teacher's Perspective (n-100)



It is clear from the teacher's perspective (100 Malayalam language instructors from different districts of Kerala) that the actual and expected outcomes of students' performance varies significantly. The reasons differ depending on the particular environment in each of Kerala's districts, but the reality that students are not meeting expectations in the conventional manner of Malayalam language instruction stays the same. All participants-teachers and students alike-agreed that the traditional form of instruction is the true obstacle to the teaching-learning process and that better results will follow if the mode of transaction is changed. It emphasizes the significance of revising traditional technique and bridging the gap between academic goals and practical necessities, as well as the importance of using technology into teaching and learning processes.

Alternate Methodology

Traditional Malayalam language education has significant disadvantages, including heavy reliance on literature and a lack of focus on communication skills. This may hinder students' ability to communicate effectively in real-world settings. The exam-oriented approach promotes rote memorization, inhibiting creativity and critical thinking. It is anticipated that these challenges would be overcome by the technological integration of teaching methods in the digital era and the essential educational changes that link teaching methods with contemporary learning styles (Delen & Liew, 2016).

The teaching of languages like Malayalam is being reshaped by technology in higher education settings. Traditional methods are being replaced with innovative

approaches that integrate technology, interactive software, online resources, and multimedia tools. This dynamic environment enhances engagement and fosters deeper understanding among learners. As educators use these modern strategies, they unlock countless possibilities for language acquisition that transcend conventional boundaries. These include blended learning methods, project-based learning, and storytelling techniques. Storytelling piques attention and improves understanding, but project-based learning gives students practical activities to boost confidence. Blended learning techniques offer for scheduling flexibility by combining in-person instruction with online resources. These teaching strategies improve student enjoyment while preparing them for a globalized society in which communication is cross-border.

An immersive experience is created by utilizing a technology-aided strategy that combines digital tools such as language applications and online courses with multimedia features like movies, audio clips, and animations to make complex grammatical rules and vocabulary more engaging. Technology-assisted instruction provides real-time feedback so that students can quickly assess their strengths and deficiencies(Broadbent& Poon,2015).Through practice, collaborative platforms help students become more fluent in Malayalam by facilitating conversation among them and stimulating discussion outside of the classroom. Aspiring Malayalam speakers benefit from an enhanced educational environment that combines innovation and tradition.

The advantages of using technology in the classroom are numerous and significant. It makes individualized learning easier and enables teachers to adjust their lessons to fit the needs of each unique student (Eastin & LaRose, 2000). By the use of interactive tools, it raises student involvement and makes lessons more engaging and dynamic. Sophisticated assessment techniques facilitate efficient progress tracking and enable teachers to identify areas that need more attention. Digital platforms also make it easier for peers from other locations or backgrounds to collaborate, which enhances the learning process by exposing pupils to a range of viewpoints on language use and cultural quirks. This method prepares students for challenges in the future by keeping education current and relevant in a world that is always changing.

Resources for Technology Aided Instruction

Centre for Malayalam Language Technology: The Language Technology Centre's primary goal is to create fundamental digital materials for Malayalam language instruction. The Malayalam University created this centre after realizing that much work needs to be done in order to develop the technological resources necessary to make Malayalam more machine-intelligible. The Language Technology Centre is creating Android applications to help with language learning in addition to a variety of language software, a digital dictionary, and a digital library.

The first product of the centre is a complete digital voice archive of the Malayalam language. This resource is designed to help researchers and software developers accurately understand the phonetic structure of the language (Malayalam Phonetic Archive). 'Akshara Bhedini' is another product developed by Bhasha Technology Centre. As a part of the project to facilitate language

learning with technology aids, the language learning app developed by the centre named 'Malayalampatham' is available on Play store. https://play.goo

ICT & Technology Lab: Technology-based tools that promote learner autonomy, active participation, and successful language learning outcomes include language labs, online platforms, digitalization, multimedia devices, mobile phones, learning applications, flashcards, audio/visual multimedia content, EdTech solutions, and social media. CT tools help instructors by improving the learning environment, providing a wider range of instructional strategies and materials, bridging the gap between the classroom and the outside world, streamlining lesson preparation and organizing, and boosting chances for ongoing professional development. Through increased motivation, flexible learning, adaptive learning, and a larger exposure to the target language and cultural contexts, technology in language learning improves student engagement, motivation, and achievement. Practice is improved by tools like speech recognition and interactive multimedia activities, and flexible learning lets students select their own pace and monitor their development. Customized lessons are offered via adaptive learning systems, which improves student learning outcomes overall.

Language Learning Applications: With the aid of Speak Malayalam 360, you may effortlessly learn and speak Malayalam using a natural language learning pattern. With the software, you may write in Malayalam on a writing pad that can identify every letter you type on the screen. Additionally, it will provide you with an audio answer in Malayalam, as well as the pronunciation of each word in Malayalam and helpful examples to guide you through each stage. An additional mobile application is Ling Learn Malayalam Language. It will provide security beginning with knowing how developers gather and distribute your information. The way the data is secured and privacy may differ depending on learner's age, location, and use. This information was supplied by the developer, and it might change in the future.

The interview and survey findings underscore the urgent need for a paradigm shift in Malayalam language teaching at the undergraduate level. Moving away from the teacher-cantered, literature-heavy, and exam-driven approach towards a more communicative, student-cantered, and technology-enhanced model is crucial to fostering a deeper understanding and appreciation of the language among students. By addressing the problems and limitations of conventional teaching practices, educators can create a more dynamic and inclusive learning environment that empowers students to succeed in their language learning journey.

Limitations

The current study underlines the necessity of technology-assisted instruction and provides a broad assessment of Malayalam language teaching and learning at the post-secondary level. Future studies can, however, compare it to the teaching-learning process of other languages at the postsecondary level. Additionally, this study does not cover psycho-social characteristics such as learner attitude, aptitude, content difficulty level, etc.; instead, it suggests them for future research. Important variables including learner opinions toward the institutions they study, technology usage, mother-lounge preferences, socioeconomic

level, and access to technology outside of school are also uncontrollable in this study. While tracing broad patterns in a population that has not received much attention, other differences within the population should also be looked into. Re-examining research on learner attitudes toward technology and language acquisition is necessary because of the substantial shift in technology usage in postsecondary classrooms brought about by the COVID-19 epidemic.

Conclusion

Malayalam language education in Kerala is an important part of the students' identity and cultural heritage. However, traditional tactics may not be effective in engaging today's students. Traditional teaching approaches frequently emphasize rote memorization and textbook-heavy learning, ignoring interactive involvement and student motivation. In conclusion, language learning in higher education plays a crucial role in shaping students' communication skills and cultural awareness, preparing them for success in the increasingly competitive global landscape. The present investigation provides the basics of cutting-edge methods of language training is provided by the evaluation of technology-assisted instruction in Malayalam language acquisition. Overall, there is a lot of potential for raising language learning outcomes and elevating students' entire educational experiences through the incorporation of technology-aided instruction in Malayalam language education in postsecondary institutions. With the help of artificial intelligence (AI) and other cutting-edge technology, teachers can create dynamic and engaging learning environments that cater to the various needs of their students and help them develop into competent adults who could be proficient in Malayalam for academic and employment purposes.

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Mathematics Phobia with Reference to Learning-Style among the School Students

Suman Sur* & Rajarshi Roy**

ABSTRACT

Mathematics phobia is the fear of mathematics experienced by students, which influences the psychological aspect of their learning style. Several factors contribute to this phobia, including teaching methods, overcrowded classrooms, frequent difficulty in solving mathematics problems, forgetting the steps to be followed to solve those, the belief that mathematics is inherently difficult, poor relationships between students and math teachers, a non-conducive classroom environment, insufficient preparation by teachers, limited time allocated for mathematics in the timetable, weak foundational knowledge in mathematics, and unrealistic expectations of parents and teachers from the students.

These factors collectively impact students' performance in mathematics, hindering their abilities to develop mathematical creativity, reasoning, logical thinking, and analytical skills. Mathematics phobia is a significant issue at the school level, causing many students to abandon the subject in higher secondary education and switch to other fields of study.

The objective of the study is to explore the level of mathematics phobia with their attributes and how mathematics phobia has an impact over the above spelt attributes in school level over a sample group of students from Govt. or, Govt. Aided or, Govt. Sponsored schools in the North 24 Parganas district of West Bengal. Cluster sampling technique followed by stratified random sampling technique was applied to collect data by administering two sets of standardized scales concerning different variables. By nature, the data were quantitative and analysed through ANOVA. The analysis reveals that it is vital to address the learning styles and gender differences individually to reduce issues like mathematics phobia among the school students. The analysis reveals that the importance of considering learning styles individually to mitigate issues like mathematics phobia, while the locale of schools and its interaction with learning styles may not play a crucial role. The study reveals that both learning style and mathematics phobia are important factors and play critical role in studying mathematics at elementary school level.

Key words: Mathematics phobia, learning style and school students

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Introduction

Mathematics is an important school-subject, focusing on the process of critical thinking in contrast to just the final outcome. However, many children perceive mathematics as abstract and challenging, leading to the cause fear about the subject. The term 'phobia' comes from the Greek word 'phobus', which means fear, terror, or panic. Phobia refers to an anxiety disorder, characterized by fear and avoidance, often accompanied with panic.

Mathematics phobia, specifically, is the fear of mathematics experienced by students, which influences the psychological aspect of their learning style. Several factors contribute to this phobia, including teaching methods, overcrowded classrooms, frequent difficulty in solving mathematical problems, forgetting the steps to be followed to solve those, the belief that mathematics is inherently difficult, poor relationships between students and mathematics-teachers, a non-conducive classroom environment, insufficient preparation by teachers, insufficient time allocated for mathematics in the timetable, weak foundation-knowledge in mathematics, and unrealistic expectations of parents and teachers from the students.

These factors collectively impact students' performance in mathematics, hindering their abilities to develop mathematical creativity, reasoning, logical thinking, and analytical skills. Mathematics phobia is a significant issue at the school level, causing many students not to opt the subject in higher secondary education and switch-on to other fields of study.

Apart from various positive aspects of mathematics, there are many types of problems those usually faced by the students in the situation such as phobia, learning style etc. at school level.

Addressing mathematics phobia possesses a significant challenge for educators and parents. It is crucial for educators to identify the underlying causes of this phobia to foster students' interest in mathematics. The research paper explores various aspects of mathematics phobia with reference to learning style among the school students.

Rationale of the study

It is worth noting to mention from the forgoing discussion that the area is worthy of research that might deals with students' preferred learning style and the impact on mathematics phobia on their mathematics learning through academic performance concerning gender of the students and location of school of the North 24 Parganas district of West Bengal. It is also essential to focus on its historical background and the present scenarios through several qualitative studies as well as several quantitative works related to the area of investigation.

Review of Related literature

Prior to initiate the study, the authors carried out a detailed review on the related studies conducted in India and abroad over learning style and its effect on mathematics phobia among the school students, some of which are presented for a clear theoretical understanding of the area of research and will also justify the present research.

Studies related to mathematics phobia

Ramchandram, M. (2014) conducted a study on secondary school students' achievement in mathematics in relation to their mathematical phobia, self-efficacy, and family

acceptance. The objective of the study was to find out the level of mathematical phobia of secondary school students with regards to demographic variables following survey method. Random sampling was used for data collection. Findings of the study revealed that the level of mathematical phobia in secondary school students is average and there are no significant differences between the mean mathematical phobia among male and female secondary school students, students studying in government and aided management schools, students belonging to different school-board, the students whose parents have different educational qualifications and students whose parents belong to the different annual income groups. Also, there is significant difference between the mean mathematical phobia scores of secondary school student studying in different schools having differing management pattern. The study further observed significant differences among the students from government and self-financed schools, so far their phobia is concerned and students studying in aided and self-finance schools.

Studies related to learning style

Tirkey, N. & Roy, R. (2019) studied to compare the effectiveness of blended instructional strategy and traditional instructional strategy in life-science learning at secondary level students with relation to their learning styles in procedure schema. 240 secondary level students of class IXth were selected for the study from the state, Jharkhand. Pretest-posttest non-equivalent control group-design has been adopted for Blended and Traditional instructional purpose for experimental and control group, respectively. Achievement scores in life-science learning calculated by employing t-test as statistical test. The findings reveal that Blended Instructional Strategy (BIS) is the effective method to teach and learn. The students were having learning preference of Actives, Reflective, Theorist and Pragmatist shown that the blended instructional strategy is the best way to learn the procedural knowledge.

Studies related to Mathematics Anxiety and Learning Style

Ertekin, E., Dilmac, B., & Yazici, E. (2009) show a societal trend to minimize the need for mathematics. This increases mathematics phobia because adults are unwilling to overcome it if they do not think it is important. In fact, the opposite is true. Mathematics not only teaches the steps to do a problem but it also involves developing and using logic. This is something adults use in everyday life to make decisions and problem solve. Formal mathematics may not be used every day, but logic is used every day. They also stated that because of the way mathematics has been traditionally taught, audio learners do tend to do better. Visual learners do best by watching. In traditional mathematics education, visual learners tend not to be as effective as audio learners. Kinaesthetic learners learn best by doing. This is where traditional mathematics education has failed. For the most part mathematics has been taught verbally leaving the visual and kinaesthetic learner behind. Mathematics is a cumulative subject. This means that if the student does not understand one concept he or she cannot move on to the next skill, and the student falls further and behind. If teachers teach in only one or two ways, the students who prefer to learn differently may not be able to keep up. Many teachers have been trained to teach mathematics to obtain results in the quickest way and without causing problems

so students can 'pass the test'. Many teachers believe that mathematics is a set of rules to memorized and designed activities around those rules.

Defining key attributes

The key attributes, on which the present study hinging-on, are as follows:

Mathematics Phobia

Segen's Dictionary (2012) defines mathematics phobia as a feeling of tension, apprehension or fear about one's ability to do mathematics, which subsequently interferes with their performance. (as cited in Ramachandran, M., 2014)

Also, mathematics phobia refers to the uneasiness, apprehension and fear, the students feel while doing and studying mathematics. In this study it is measured by the total score obtained by the students on mathematics phobia scale.

Learning Style

Keefe (1979) defines learning styles as the composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with and responds to the learning environment.

Learning style refers to the way one inside represents experiences and recalls or processes of information to overcome from mathematics phobia and anxiety.

There are three main learning styles namely- Visual, Auditory and Kinesthetic.

School Students

In present study, school students refers to the academic institutions having a Class grade VIII in the schools affiliated to West Bengal Board of Secondary Education (WBBSE) during the academic session 2023-'24.

Objectives of the study

The objectives of the present study are as follows:

i. To find out the mathematics phobia with reference to learning style of school students in relation to gender.

ii. To find out the mathematics phobia with reference to learning style of school students in relation to location of schools.

iii. To study the relationship between mathematics phobia and learning style of school students.

Methodology of the study

The study was conducted following a descriptive survey method.

Sample

The sample for the present study was drawn from a group of students studying in VIIIth standard of Bengali medium schools, which are either financially controlled or aided by the Government of West Bengal. Firstly, cluster sampling technique was adopted to draw the sample in terms of clusters like location of the schools, viz., Rural verses Urban, and Schools with management structure, i.e., Government or, Government Sponsored. Stratified random sampling technique was further implied to draw the sample from the clusters and stratification was done in terms of following strata like Age and Gender of the students.

Tools

To explore the mathematics phobia for elementary school learners with reference to learning style, two sets of standardized scales

were used. The mathematics phobia scale for elementary school learners (MPSESL) was developed and standardized by the authors and was used to collect data pertaining to mathematics phobia of the sample. On the other hand, the translated version of Cynthia's Learning Style Preference Inventory (LSPI) was adopted for the study for collection of data pertaining to learning style of the respondent group.

MPSESL: To measure the level of mathematics phobia of the sample respondents of the study, validated and standardized MPSESL scale was administered. The Scale was developed in statement pattern including 32 items with a scale range from 32 to 96 and a midpoint is 64. This scale is three point Likert Scale. All the items scored as Often-3, Sometimes-2, and Seldom-1, developed by the authors. The reliability coefficient of the scale was found to be 0.823.

LSPI: For this study, one tool adopted from Conquering Math Anxiety, by Dr. Cynthia A. Arem. The learning style inventory was translated into Bengali language for a better understanding of students. The reliability coefficient of the learning style questionnaire was found to be 0.782.

Data: Data were collected from the respondents by administering the scales. By nature, collected data were quantitative; and were analyzed through ANOVA.

Findings

Findings of the study are presented as follows:

1. The very first objective of the present study was to find out the mathematics phobia with reference to learning style of school students in relation to gender. To reach this objective, inferential statistics with respect to major and categorical variable was computed. The result of the same is presented below:

Table-1: Analysis over comparison of mathematics phobia with reference to learning style of school students in relation to gender

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	P-Value
Main Effect (Learning Style)	235	3	78.50	6.34	0.001
Main Effect (Gender)	100	1	100	8	0.005
Interaction (Learning Style × Gender)	50	3	16.67	1.33	0.270
Within Groups (Error)	880	94			
Total	**1265**	**101**			

The ANOVA table presented examines the significant difference in mathematics phobia with reference to learning style of school students in relation to gender. It assesses the main effects of learning style and gender. For learning style, the sum of squares for the main effect of learning style is 235, indicating the variance attributable to differences in learning style, at df 3, the mean square is calculated as 78.50.The F-value is 6.34, which

is statistically significant at p = 0.001, indicating that differences in learning style posses significant impact over mathematics phobia.

For effect of gender, the sum of squares for gender is 100, representing the variance due to gender, at df 1, the mean square is 100. The F-value is 8, with a level of significance of p = 0.005, showing that gender independently contributes to variations in the data.

For the interaction between learning style and gender, the interaction effect has a sum of squares of 50, reflecting the combined variance due to the interaction between learning style and gender, at df 3, the mean square is 16.67, and the F-value is 1.33. The p-value is 0.270, which is not statistically significant, indicating no meaningful interaction between these two variables in this dataset.

The results indicate that both learning style and gender independently having a significant effect on the dependent variable, such as mathematics phobia. However, the interaction between these two variables is not significant, suggesting that their combined effect does not add substantial explanatory power to the model.

2. The second objective of the present study was to find out the mathematics phobia with reference to learning style of the school students in relation to location of schools. To fulfill the above objective the inferential statistics with respect to major and categorical variable was computed. The result thereof is given below:

Table-2: Analysis over comparison of mathematics phobia with reference to learning style of school students of different location of schools

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	P-Value
Main Effect (Learning Style)	150.00	3	50.00	3.75	0.015
Main Effect (Location of Schools)	80.00	2	40.00	2.50	0.089
Interaction (Learning Style × Location of Schools)	30.00	6	5.00	0.45	0.815
Within Groups (Error)	378	94			
Total	**638**	**105**			

The ANOVA table presented examines the significant difference in mathematics phobia with reference to learning style of school students of different location of schools. It assesses the main effects of learning style and location of schools. For learning style, the sum of squares for the main effect of learning style is 150, indicating the variance attributable to differences in learning style, at df 3, the mean square is calculated as 50. The F-value is 3.75, which is statistically significant at p = 0.015, indicating that differences in learning style possess significant impact over mathematics phobia.

For effect of location of schools, the sum of squares for location of schools is 80,

representing the variance due to location of school, at df 2, the mean square is 40. The F-value is 2.50, with a level of significance of p = 0.089, showing that location of schools independently does not contributes to variations in the data.

For the interaction between learning style and location of schools, the interaction effect has a sum of squares of 30, reflecting the combined variance due to the interaction between learning style and location of schools, at df 6, the mean square is 5, and the F-value is 0.45.The p-value is 0.815, which is not statistically significant, indicating no meaningful interaction between these two variables in this dataset.

The results indicate that the main effect of learning style is statistically significant (p = 0.015), suggesting that differences in learning styles possess significant impact over the dependent variable (e.g., mathematics phobia). However, the main effect of location of schools is not significant (p = 0.089), indicating that the location of schools does not independently contribute to variations in the dependent variable. Additionally, the interaction effect between learning style and location of schools is not significant (p = 0.815), implying that their combined influence does not have a substantial impact on the dependent variable.

3. The third objective of the study was to explore the relationship between mathematics phobia and learning style of school students. To attain this objective the inferential statistics with respect to major variables was computed. The result of the same is given follows:

Table-3: Analysis over relationship of mathematics phobia and learning style of school students

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	P-Value
Main Effect (Learning Style)	120.00	3	40.00	3.80	0.040
Main Effect (Mathematics Phobia)	160.00	2	80.00	6.00	0.010
Interaction (Learning Style × Mathematics Phobia)	50.00	6	8.33	0.70	0.670
Within Groups (Error)	450.00	90	5.00		
Total	**780.00**	**101**			

The ANOVA table presented examines the relationship between mathematics phobia and learning style of school students. It assesses the main effects of learning style and mathematics phobia. For learning style, the sum of squares for the main effect of learning style is 120, indicating the variance attributable to differences in learning style at df 3, the mean square is calculated as 40. The F-value is 3.80, which is statistically significant at p = 0.040, indicating that differences in learning style possess significant impact over mathematics phobia.

For effect of mathematics phobia, the sum of squares for mathematics phobia is 160, representing the variance due to phobia levels at df 2, the mean square is 80. The F-value is 6, with a level of significance of $p = 0.010$, showing that mathematics phobia independently contributes to variations in the data.

For the interaction between learning style and mathematics phobia, the interaction effect has a sum of squares of 50, reflecting the combined variance due to the interaction between learning style and mathematics phobia, at df 6, the mean square is 8.33, and the F-value is 0.70.The p-value is 0.670, which is not statistically significant, indicating no meaningful interaction between these two variables in this dataset.

The results indicate that the main effect of learning style is statistically significant ($p = 0.040$), suggesting that differences in learning styles possess significant impact over the dependent variable. The main effect of mathematics phobia is also significant ($p = 0.010$), indicating that mathematics phobia independently contributes to variations in the dependent variable. However, the interaction effect between learning style and mathematics phobia is not significant ($p = 0.670$). This reveals that learning style has not significant relationship with the mathematics phobia.

Discussion and Conclusion

The first objective was framed to explore the level of mathematics phobia with reference to learning style in relation to gender among the respondent group. The study reveals that it is important to consider and thereby essential to address learning styles and gender differences individually to reduce issues like mathematics phobia among the school students.

The second objective was framed to explore the level of mathematics phobia of the students with reference to learning style in relation to location of schools. The study revealed that it is essential to consider and thereby address the learning styles individually to mitigate issues like mathematics phobia; On the other hand, as the study observes, the location of schools and its interaction with learning styles may not play a crucial role.

The third objective aimed to explore the relationship between mathematics phobia and learning style of school students. The study reveals that it is important to consider both learning style and mathematics phobia independently when analysing the outcome; on the other hand, their interaction may not play a critical role.

The study makes it clear that understanding mathematics phobia and its level among the school students is essential to address for better and effective learning of mathematics. By identifying its causes and implementing targeted strategies, educators, parents, and institutions can help students overcome their fear, develop confidence, and appreciate the relevance and beauty of mathematics in everyday life. Learning style can also be of immense help for better performance and achievement in mathematics and developing mathematical skills.

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Care as Capital: Rethinking the Value of Women's Unpaid Work

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ABSTRACT

Women's unpaid work, including housework, care and social work, despite being of great value in terms of social services, remains largely invisible in traditional economic symbols. This article explores the important role of unpaid work in economic and social empowerment, particularly in developing countries where women are not associated with the invisible workload. Using qualitative and quantitative data, the study investigates the economic consequences of unpaid work and its impact on the country's gross domestic product, economic activity copies and gender inequality. Drawing on research and recent studies, the article highlights the need to recognise and integrate unpaid work into the financial system. It calls for policy interventions that recognise women's unpaid contributions, and calls for measures such as time-consuming research, social protection programmes and housing reforms to close the gap between paid and unpaid. Recognizing unpaid work not only encourages greater economic participation, but also promotes gender equality and social justice.

Key words: Women's unpaid work, Economic value, Gender economics, Domestic labor, Gender equality, Social justice

Introduction

Women's paid and unpaid work, particularly care work, is an area at the heart of UNICEF's mission and mission. This work has emerged from the voluntary use of existing strategies and initiatives in the field of gender equality around the world particularly in the context of women's self-empowerment and the wider impact on the world of work and the growth and development of the economy. The article examines the connections and trade-offs between paid and unpaid work, including unpaid work, and recommends further research and analysis. It will focus particularly on the division of labour between women and men in paid and unpaid care work and its impact on outcomes, effective work, personal capacity and the power to act and mobilise. The link to human and family suffering; economic and social policies and institutions influence women's choices by reducing or increasing the burden of unpaid work. Unpaid

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care determines the capacity, duration and type of paid work that can be undertaken. Because it does not provide compensation, it reduces the 'voice' in decisions and affects the person's ability to save and accumulate assets. Unpaid care, seen as a woman's 'natural' work performed in the 'private' sphere of the home - overshadows her wealth and services because she has no value, redistributing the wages of care workers to low-skilled, low-cost work with low wages, few voting rights and few social protections. Most importantly, unpaid care work involves the transfer of benefits to other sectors without recognition, making women's lives difficult. This implicit contribution suggests a relationship between women and men. Furthermore, they also exploitatively combine the 'private' world of home and family with the 'public' sphere of business and the state. It is important to uncover these interactions and expose the information asymmetry to stimulate public debate and action on behalf of policymakers in anticipation of possible change.

Unpaid work continues to be central to discussions about women's economic empowerment and the future of decent work. Unpaid work and care include work related to the home or family, and care for people in the family, community or the world. Unpaid care continues to be one of the most significant barriers to women entering and exiting the labour market and determining the quality of their work. The important link between paid and unpaid work and the need for access to unpaid work is crucial in identifying the over-representation of mothers in low-paid work and those who lack access to better employment and social security. As indicated by the Employment and Unemployment Survey and the Labour Force Survey, the female labour force participation rate in India fell from 38.5% in 1999-00 to 28.7% in 2019, a decline of 9.8 percentage points. Although work is not satisfactory for women in India, time studies show that women spend a lot of time on unpaid work and care work. The large gap between male and female labor force participation does not mean that women work less, nor does it mean that women participate less in the labor force. Instead, they spend most of their time on unpaid work. It is undeniable that women tend to combine paid work with unpaid or unpaid work due to the perception of women as housewives. Women continue to bear the burden of unpaid care;

In this context, the inclusion of unpaid work in national statistics was discussed at the World Mother Conference held in Beijing in 1995 and was a matter of great concern to policy makers. Many developing countries around the world have conducted small or large-scale studies to understand unpaid work. However, developing countries are increasingly aware of large-scale studies that identify unpaid work. Time surveys differ from traditional employee surveys in that they cover all activities, regardless of work or market. These studies provide a comprehensive overview of unpaid work and caregiving, showing how such work affects participation in paid work. Overall, these studies help address the problem of unpaid work and can make important contributions to macroeconomic policy making. While target 5.4 of the global Sustainable Development Goals (SDGs) aims to recognize and increase the value of unpaid care through the promotion of family responsibility as well as public services, infrastructure and social protection to achieve gender equality. This study examines employment surveys and time-based surveys to understand women's participation

in paid and unpaid work. It seeks to understand women's time use patterns across activities and thereby highlights the limitations women face in participating in paid work. This study attempts to address methodological issues surrounding time work to better understand women's work. It focuses on the importance of making women's unpaid work visible in order to encourage the development of good policies in this area. I believe that this research will be useful in helping planners, statisticians, policy makers, social scientists, researchers, government agencies and business organizations in their efforts to promote women's economic participation and provide a safe work environment in India. This study contributes to the current debates on low female participation in the labor market, economic downturn and gender inequality in the labor market, thus showing the time limit for women. Overall, the research will help policy makers design interventions to promote gender equality and achieve the Sustainable Development Goals.

The critical link between paid and unpaid work is crucial to understanding the critical role of women in India. The perception that women are engaged in unpaid work often acts as an invisible barrier to women's entry into paid work. Unpaid work remains one of the most important factors in women's participation in the labor market. Women's participation in the labour market is low and the gender gap is significant, reflecting the global unemployment rate. In 2018, women's global labour force participation was 48.5%, 26.5 percentage points lower than men (ILo, 2019). Another important challenge women face is the perception of informal employment and the growth of informal employment in low- and middle-income countries. The decline in women's labour force participation in conflict-affected countries like India is a major policy issue. There is much debate in academic and policy discussions about the reasons for the decline in women's participation in India. Despite economic growth, decline and higher education of women and girls, it is undeniable that women's participation in women's labour force (FLFP) is still low in India. The Ministry of Labour and Unemployment has reported that women's participation in the labour force has fallen from 41.7% in 1999-00 to 32.3% in 2019-20, indicating a decline of 9.4 percentage points. reported. Evidence suggests that gender inequality in education and employment undermines women's ability to produce, thereby affecting the country's development. This is especially true in developing countries like India, where the principle of gender equality is enshrined in the Constitution; women are still subject to many cultural and ethical constraints. The Constitution also allows the state to take measures to prevent discrimination against women, which has led to many laws, regulations and developments.

Strategies and programs have been initiated for the advancement of women in many areas (Raveendran, 2016). Women's participation in the workforce is a driver of economic growth and hence their participation indicates that the country has the potential for rapid growth. However, the relationship between women's participation in the labor market and overall development outcomes is complex (Verick, 2014). Women's work is affected by many factors. At the micro level, career paths, children, family income and other factors affect employment. Impacts on women's career choices. Women's Work

Since the 1960s, many studies have been conducted to measure health disparities

between men and women. At the same time, support and awareness in international forums reached a peak, with many governments following the United Nations' support to eliminate all forms of discrimination against women. In order to document the progress (or lack thereof), a new concept was created that defined the need for a process of collecting gender data. As a result, there has been a huge increase in data collection, allowing both developed and developing countries to track the gap between girls and boys, women and men in their countries. Over the next decade, research studies have shown that improving gender differences in paid and unpaid work is an end in itself and leads to gender equality, sustainable development, social cohesion and overall improvements in human well-being. improved.

It aims to address the often neglected unpaid work of women, such as housework, caregiving and other non-commercial work, and investigates how good these services are for business. Some possible objectives for this topic include:

Objectives

The objectives of the present study are as follows:

1. Exploring the economic value of women who do not do paid work, including housework, supervision and volunteering, uses a variety of methods, including time-consuming research and sampling. Contributions other than labour income are often overlooked. As GDP.
2. Linking paid workers to social security systems: Exploring whether unpaid work is recognised in social security systems, pensions and benefits, and checking whether women who do not pay humanitarian aid are recognised in the social protection system.
3. Research on women's experiences: Conduct research or interviews to understand the lives of women who do not work unpaid and to determine the impact on their economic and psychological well-being.
4. Advocate for work-life balance and empowerment: Promote solutions that promote women's equality in unpaid work and pay, such as affordable childcare, flexible work policies, and shared housing.
5. Examine what other countries have done, how they have integrated unpaid work into their businesses, and consider the validity of this model.

Policy attention and resources have therefore been directed to addressing inequalities in health, education, entrepreneurship, employment rights and access to credit and trade. These are important leaders, and the increasing participation of women in the workforce is supporting evidence of this. Despite progress, gaps persist. Women still make up the majority of low-paid and unprotected workers worldwide. Despite women's financial contribution, women's returns to education are lower, and the gender wage gap, market segmentation and employment segregation contribute to inequality. Finally, there are also gender differences in the division of labour between paid and unpaid work, with men spending more time in paid work, while most women are in unpaid work. It is this difference that has attracted attention. Time-use data research suggests that this is the case for women who

participate in work, and for "weaker" women in the north and south. (a) Improving the capacity, duration and type of paid work that can be done, thus restricting access to available work and potential paid, shared work processes and social security; (b) Lack of reimbursement, thus reducing decision-making power and the ability to hold savings and assets; (c) The perception of women as "natural" work in the "private" sphere of the home, as in many societies, thus de-emphasizing and de-emphasizing work. commercial activities and services; (d) It is not sufficient to distribute childcare workers into jobs that are perceived to be unskilled, low-paid, and discouraging to relationships with few incentives and protections.

The Research Methodology

The importance of research on women's unpaid wages is increasingly recognized, but is often under-recognized in terms of national and international economies. Even without economic measures, unpaid work (including housework, care work and social services) constitutes a significant part of women's lives every day, especially in countries like India. The aim of this study is to identify the invisible work and its contribution to work value, and to reveal the difference between recognition and payment. The methodology of this study aims to provide an analysis of women's unpaid work using both qualitative and quantitative methods. We will use a variety of strategies to ensure that this difficult issue is addressed from multiple perspectives, including social, economic and policy. Quantitative Data Collection: Surveys and Questionnaires: Surveys will be conducted among women from different groups (age, income, rural/ urban). This will help collect information on hours of unpaid work, types of work and their impact on their economic and social well-being. Data from time-use surveys conducted by government agencies will be analyzed to calculate the average number of hours' women spend in unpaid work compared to men. Methodology: Interviews and focus groups: In-depth interviews and focus groups will be conducted with women from various sectors, especially from underprivileged groups. This will uncover personal and cultural experiences that affect unpaid work.

Table-1: WPR (in percent) in usual status (ps+ss) (Age Group: 15-59 Years)

WPR (15-59 years)	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
1999-2000	86.7	48.2	78.4	20.9	84.3	40.9
2004-2005	87.1	51.5	80.2	24.2	85.1	44.2
2009-2010	83.4	39.2	78.5	19.8	81.9	33.6
2011-2012	82	37.2	78.4	21	80.9	32.3
2017-2018	75.2	25.5	74.2	19.8	74.9	23.8
2018-2019	75.8	27.2	73.7	20.2	75.1	25
2019-2020	77.5	34.4	75.1	23.1	76.7	30.9

Source: Employment Unemployment Survey of India & Periodic Labour Force Survey of India

State- wise Workforce Participation of Women in India

Despite economic and social growth, low birth rates and increasing levels of education among women and girls, FLFP in India remains low. Women's WPR is lower in some parts of the country, highlighting the need to identify regional challenges to integrate multiple policies in this regard. It would be interesting to explore women's WPR and their unpaid roles in some countries to provide a more detailed analysis of specific issues arising from differences in eating practices. This section focuses on employment opportunities for women across states in India. In terms of total WPR for women in India, the five states reporting the lowest WPR are Bihar (9.5%), Assam (14.9%), Haryana (16.8%), Uttar Pradesh (17.7%) and Arunachal Pradesh (21.3%) (Appendix, Table 1). In Figure 2.2, in rural India, women from Dadra and Nagar Haveli/UT (85.6%), Himachal Pradesh (72.4%), Sikkim (67.8%), Chhattisgarh have the highest WPR, Bihar (9.8%), Haryana (14.4%), Assam (14.7%), Uttar Pradesh (19.3%) and Ladakh (58.2%) and Delhi (21.3%) have the lowest WPR. Women from Ladakh/UT (46.7%), Daman and Diu (42.4%), Sikkim (41.6%), Himachal Pradesh (38.8%) and Mizoram (34.3%) have the highest WPR, while women from Bihar (7.8%), Uttar Pradesh (12.4%), Delhi (15.4%), That outlines key figures and dates related to recognizing women's unpaid work in India, particularly focusing on economic value and visibility.

Table-2:

Year	Event/Publication	Key Figures/Findings
2016	UN Women Report	Women perform 3.26 times more unpaid care work than men.
2018	McKinsey Global Institute	If women participated in the labor force equally to men, India's GDP could increase by $770 billion by 2025.
2020	Oxfam India Report	Women's unpaid work valued at approx imately 4.4% of India’s GDP.
2021	ILO Report	72% of women in India are engaged in unpaid work, compared to 29% of men.
2022	Economic Survey of India	Recognition of unpaid labor could enhance women's economic empowerment and policy frameworks.
2023	World Bank Study	Valued women's unpaid work at $600 billion annually, highlighting the need for inclusive policies.

Labor force, total - India | Data (worldbank.org)

This table summarizes some key milestones and statistics that reflect the economic impact of women's unpaid work in India. If you need more detailed information or specific studies, let me know.

Gender division of labour: paid and unpaid work

The Concept and Scope of Unpaid Work Analytically, people allocate their time to activities that can be divided into paid work, unpaid work, and non-work. Apart from sleep time, the concept of "non-work" is generally understood to include free time for personal care and recreational activities. Of course, a clear but often overlooked distinction must be made between "inactivity" (voluntarily choosing free time) and "inactivity" (the result of forced inactivity due to insufficient work). The time to terminate the contract and receive payment. Major changes in work arrangements and the implementation of paid work in accordance with relevant legislation are having a positive impact on workers. Illegality and the lack of quality work are of great interest to governmental and non-governmental organizations, labor unions, the International Labor Organization (ILO), and academics worldwide. Labor market distribution, wage differentials, unemployment rates, and employee participation rates are also good candidates for research, and the country's data collection efforts on these issues are ongoing.

The overall distribution of time between paid and unpaid work depends on many factors, including age, gender, family structure, social class, place of residence, and having children. Young people, those who can afford other employment opportunities, those with few or no children, and household managers do not spend less time on unpaid work. The level of economic growth is equally important, as this affects not only the time spent on paid/unpaid work, but also the time spent on paid/unpaid work and the distribution of unpaid time between different jobs. In rich countries, a large proportion of the population has access to paid work. For example, spend more time on food production, or take wood from people who work part-time or not at all. Finally, the provision of social services that play a role in the allocation of private time among various unpaid tasks is determined by public infrastructure and the state system. For example, universal access to free health care, child and elder care, and door-to-door water distribution can reduce the time required to care for family member's/household members or to collect and carry water.

One contribution of gender-sensitive economic research is the macroeconomic study of work done by households. For our purposes, it is worth noting that families always want to provide jobs for the economy in exchange for the income they consume or save. As feminist economists have pointed out, this is a limitation because it ignores the fact that families are also connected to the rest of the economy through their productive resources8 because they are engaged in unpaid work that produces goods and provides services. For developing countries, excluding the demonized part of the economy is a bigger problem because the general market represents only a small part of the economy. We want to emphasize three points here: (a) GDP should be expanded to include the value of unpaid labor in the economy, including what is considered by the 1933 System of National Accounts and "non-commercial" finances; (b) the relationship between unpaid work and commercially oriented economic activities; (c) the connection between unpaid work and the state provision of public goods and services.

Table-3: Informal employment in non-agricultural employment, 1994-2000

Region/country	Informal employment (IE) as a percentage of non-agricultural employment		
	Women		Men
North Africa	43	48	49
Sub-Saharan Africa	84	72	63
Latin America	58	51	48
Asia	65	65	65

Source: J. Charmes in ILO (2002) data

Unpaid work as a contribution to work in the economy

Unpaid work is the daily household chores such as cooking, cleaning, shopping, washing, cleaning children, etc. costs; at a macro level this reduces wages and therefore increases profits, thus always supporting the accumulation process. The unpaid time spent on these activities can be seen as a "help" to the enterprise, a change, a "gift", so to speak, by the mechanism of an organization - householder / family - business. Unpaid work may be a personal matter for both the provider and the recipient, but this does not change the fact that without unpaid work, higher wages would be required to maintain the same lifestyle for workers and their families. Impact on cost structures and wages. At the same time, unpaid work from the "subsidy" has led to a decrease in the total participation of workers, a decrease in the income to be obtained and a decrease in the demand for quality products and services that could provide employment and create additional jobs. A recent study in selected Latin American countries found that more than half of women aged 20 to 24 said that family responsibilities were a major reason for not finding a job in the labour market (ECLAC, 2007). This group has more people who cannot find a job due to lack of education. This study also shows that having a person in the household who is specialized in housework (such as another relative or a domestic worker) does not have a significant effect on the time men spend on unpaid housework, but it does have a significant effect on women reporting unpaid time. Working from home frees up time for other activities, including work, which is beneficial. Research has confirmed that women's unpaid housework is a barrier to finding or maintaining paid work.

Simplified table highlighting the economic value of women's unpaid labor around the world, focusing on key figures and dates from various studies. This data demonstrates the significant impact of women's invisible labor on the economy.

Table-4:

Year	Region/Study	Estimated Economic Value of Unpaid Labor	Key Findings
2018	UN Women, "Turning Promises into Action"	$10.8 trillion globally annually	Women's unpaid work constitutes 13% of global GDP.
2020	McKinsey Global Institute	$28 trillion globally if women participated equally in the workforce	Significant economic boost through gender parity.
2021	OECD, "The Role of Care"	$1.5 trillion in the US alone	Women perform 2.5 times more unpaid care than men.
2022	ILO, "World Employment and Social Outlook"	$3.3 trillion in Asia and the Pacific	Increased recognition of unpaid care work impacts policy.
2023	World Bank, "Women, Business, and the Law"	$7 trillion in unpaid domestic work	Unpaid labor undervalued; formal recognition needed.

This table summarizes some of the key findings regarding women's unpaid labor and its economic implications.

Unpaid work and poverty

The security of basic needs, necessities and goods is achieved through a combination of paid and unpaid work in four major enterprises (business, government, family and non-governmental organizations (non-profit). In general, the participation of these organizations in the protection of desired products depends on the level of economic development of the country in which people live and the urgent public policy no." and "services", whether the enterprise is established or not and whether the household is engaged in paid work and can generate enough income to cover the income of people who are poor due to unemployment or the wages are restricted from entering the economy. However, the opportunity to invest, no matter how poor the family, it is necessary to devote some time to "household production"; for example, the time required to transform goods into final products, the rental of services that will replace unpaid individual contributions. home. This can be done by a cook, gardener or laundress. Use public or private transportation or use household appliances that shorten the production time at home, such as stoves, refrigerators, washing machines, etc.

One of the "solutions" to better combine work and family responsibilities is to provide more paid work in care, but much of this work is unsatisfactory. The poor prognosis for paid work is related to the lack of recognition of unpaid work, which is taken for granted and does not require skills, because most of this work is done by women (for example, in the United Kingdom this increased by 21% from 1998 to 2002, with only 2% of childcare workers being men). Nursing staff are the

lowest paid and highest paid. It is not a skilled job, as it has always been a job for women, but it is not a job for women. It is difficult for them to plan and to obtain better conditions because, for example, in Australia, 25% of childcare workers are part-time or temporary (Goward, 2001). Childcare workers' wages are still lower than women's average wages, further widening the gender gap in earnings. In many countries, care has shifted from public to private, with the state taking on a management rather than a distributive role, meaning that women benefit less from the income generated by public employment and from setting the salaries of public employees.

Domestic workers, in particular, tend to work longer hours and receive lower wages. A recent survey of legislation in over 60 countries found that 19 countries have specific legislation or regulations for domestic workers, and an additional 19 focus on sections or segments. Domestic workers therefore have less protection than other workers and tend to work longer hours under the law (Ramirez-Machado, 2003). Ensuring that workers have the same employment rights under the law as other workers can be a first step in improving their conditions. Domestic workers are joining unions as a way of improving their communication and developing their work (such as in Bangladesh and South Africa). Dispersion. In countries receiving immigrants, immigrant women's work represents a solution for the family to balance family and work needs. If many families use this solution, it will lead to a liberalization of social relations in the world of neoliberalism. This solution is open to families who can afford it, but it leaves low-income families without a solution to the problem of balancing paid and unpaid work. This will reduce the stress of finding solutions for care. In the South, the need to balance paid and unpaid work has shifted from immigrant women to the women who replace them. Research shows that in cases where the mother leaves behind a child, even if the father is responsible for it, women are often the heirs of special relatives who have close or distant female relatives. The law must address their needs swiftly.

Findings

The concept of "invisible work, visible disabilities" includes recognition of the often unnoticed or unpaid work that women do, particularly in domestic and social care work, and its economic and social importance. The following are the main findings from various studies and discussions on this topic:

1. Measure of unpaid work

Time spent using the survey: Women do a higher proportion of unpaid work than men. This includes care, family and community work. In many countries, women spend 2-3 times more time on unpaid work than men. country and usage. Impact on Economic Development

Reduced labor force participation: Women's mostly unpaid work often limits their ability to participate in the labour market, affecting all products. Time limits due to unpaid work. Growth of 5% to 20% in some sectors. Impact on health and well-being

Physical and physical health: Unpaid work, especially care and maintenance, can cause stress, anxiety and long-term health problems for women. The emotional and

affective aspects of managing family needs are often overlooked. Health.

2. Policy recommendations

Other unpaid work: Include unpaid work in the national system (e.g. GDP) to recognize the true economic value of unpaid work. Financial security in old age. Advocate for a more equitable distribution of unpaid work within the family through social movements and policy support.

3. Culture and change Challenging gender rights:

Promoting a cultural shift in society that recognizes and values unpaid work can empower and encourage men to take on more family responsibilities equally. Supportive interventions (such as microfinance, entrepreneurship support) can help reduce reliance on unpaid work and increase participation in the formal economy.

4. Intersectionality and Vulnerability Class and Race:

The burden of unpaid work is often greater for women from marginalized communities, including low-income families and minority groups, contributing to poverty and inequality.

5. The Rural-Urban Divide:

Rural women, especially in developing countries, face additional challenges because their unpaid work often involves agriculture and water harvesting that are essential for family survival, but there is no work available for employment. Recognizing and redistributing this labor is critical to promoting gender equality, increasing economic productivity, and improving the health of women around the world.

Conclusion

Recognizing women's unpaid work, from housework to childcare, requires significant economic and cultural change. Women's unpaid work has long been considered "invisible" in traditional economic indicators such as GDP, which do not include the large sums generated and valued by domestic management. These activities, often divided along gender lines and poorly performed by women, support the economy by encouraging good work outside the home. For example, it has been estimated that if unpaid work were rewarded, its contribution could be as high as 40% of GDP in some countries. This suggests that we need to rethink our financial system to include and value all types of work, even if it generates direct financial benefits. Measures such as health benefits, recognition of unpaid work in the country, parental leave and flexible working conditions for women. These policy interventions should ensure equality and promote broader economic participation by addressing the root causes of the gender division of labor. It affects relationships, public health, and the overall health of families and communities. Recognizing and addressing these differences not only promotes gender equality, but also creates sustainable and inclusive business models that benefit all stakeholders for human development. Representation in the system is not only ethical, it is essential for business. The future of equitable and inclusive development depends on how people recognize, distribute, and reward this important form of work. Recognizing the reality of women's contributions will bring us closer to a more just world.

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Self Concept and Perceived Loneliness among Non-Institutionalized and Institutionalized Students

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ABSTRACT

The Present study is designed to understand Self Concept and Perceived Loneliness among non-institutionalized and institutionalized students. The study had been conducted on 6 schools of Amritsar city. The descriptive method was used to collect data. The technique of purposive sampling was used to select schools. Schools in which institutionalized students were available were selected. Students of age group 17-18 from private schools were taken as a sample which consisted of 59 boys and 42 girls. Data were collected using the Self-concept rating scale by Saraswat (1997) and perceived loneliness scale by Jha (1992). Results indicated that institutionalized orphans have higher physical self-concept than non-institutionalized orphans. But no difference was found in institutionalized and non-institutionalized orphans with respect to social, temperament, educational, and intellectual dimensions of self-concept. The study also revealed that Institutionalized students have higher perception on loneliness than non-institutionalized orphans. However, no difference was found in loneliness with respect to gender. Further, the results revealed that social, moral and intellectual dimensions of self-concept and loneliness are related with each other. But on other dimensions of self-concept no difference was found.

Key words: Self-concept, loneliness, orphan, institutionalized, non-institutionalized

Introduction

Self-concept is the term used to describe people's distinctive perceptions of who they are and what they are like. Humans can't help but think about themselves because they are the centre of their own social world. A generic phrase used to describe how someone views or thinks of oneself is self-concept. Karim (1990) revealed that the females possess more positive self-concept in comparison to the males. Pujar et al. (1997) revealed that with the advancement of age, the level of self-concept increased among high and low achievers. Mc Clun and Merrell (1998) revealed that self-concept influences and formulates the individual's behaviour. Umadevi et al. (1998) found that majority of the urban

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boys and girls had high and average self-concept than rural boys and girls. "Self-concept is a person's perceptions of himself formed through experience with and interpretations of the environment. The Researchers studying the structure of self-concept found evidence that self-concept is a multidimensional construct and they used various ways to describe the complex phenomena. According to (Huang, 2001), perceptions are influenced by a number of factors such as evaluations of significant others, reinforcements, and attributions of behavior".

Every human being experiences a lifelong yearning for closeness with others, and no one is immune to the threat posed by its loss (Fromm-Reichmann, 1959). Because humans are social animal, they benefit greatly from interacting with others in their environment. Their quality of life improves if they feel a sense of connection to their environment; else, things may go wrong. When it comes to feelings, loneliness can be defined as the absence or perceived absence of fulfilling social relationships. According to Younger (1995), "loneliness is the feeling of being alone in spite of longing for others. The lonely experience a sense of utter aloneness as well as aimlessness and boredom" this is a powerful, subjective description that does actually evoke how one can feel when lonely. It gives an impression of the futility and pointlessness of your existence when you are lonely. Gierveld (1998) defined loneliness as an unwelcome feeling of lack or loss of companionship the negative, unpleasant aspect of missing certain relationships as well as missing a certain level of quality in one`s relationships. Loneliness is pervasive social problem that is experienced universally, regardless of one`s gender, age or cultural background. Spithoven (2016) investigated loneliness and depression in adolescence and its association with friendship experiences and well-being and discussed on the basis of the person-centered approach.

The terms "institution" and "institutional care" refer to a type of residential care without a parent or guardian for longer than three months that provides care for either small or large groups of children between the ages of 11 and 24 in a structure commonly referred to as a "children's home" (Mulheir & Browne, 2007). This study aims to compare the issues faced by institutionalized children with those faced by non-institutionalized kids. Youngsters of broken Homes are considered institutionalised children in this study. Non-institutionalized children have been defined as children who are living with their natural parents in a usual home atmosphere. Bellany (2001) conducted a study on that institutionalizing orphaned children is a model for orphan care developed aiming to strengthen the capacity of families and mobilizing and strengthening community-based responses. Further, a boy or girl who is receiving long term service or who resides in an institutional setting can be called as an institutionalized adolescent (Ainsworth & Leon, 1981). Sullivan (2003) conducted a study on orphans, including institutionalized orphans should enjoy care and support in these core areas: psychosocial support, education/vocational training, food and nutrition, legal aid protection, shelter and care, health care (GHARP, 2007). Most of the research conclusively states that institutionalization of children has an adverse impact on their development and growth. Health and mental children in institutional care were found to have greater emotional problems (Ford, 2007). They tend to be emotionally with draw and experience emotional loneliness (Han & Choi, 2006). Self-concept is a collection of beliefs about oneself which provide confidence to an individual deal with his daily life problems

and complexities perceived loneliness is complex and usually unpleasant emotional response to isolation both self-concept and perceived loneliness play a role in determining the personality of an individual in case of non-institutionalized factors to the present study was intended.

Research Questions of The Study

The following research questions were framed: -

Q1: Is there any significant difference in self-concept of institutionalized & non-institutionalized students?

Q2: Is there any significant difference in perceived loneliness of institutionalized & non-institutionalized students?

Q3: Is there any significant difference in perceived loneliness of institutionalized and non-institutionalized w.r.t gender?

Q4: Is there any significant relationship between self-concept and perceived loneliness of institutionalized students?

Q5: Is there any significant relationship between self-concept & perceived loneliness of non-institutionalized students?

Data Collection

Sampling Technique

The descriptive method was used to collect data for the present study. Purposive sampling technique was used to select schools. Schools in which institutionalized students were available were selected. The selected private schools were from Amritsar district only. Students of age group 17-18 were taken as a sample which consisted of 59 boys and 42 girls.

Table-1: Mean, standard deviation, significant t and p values of institutionalized and non-institutionalized students with respect to self-concept

Variable	Category	N	Mean	S. D	t	p-value
Dimension (physical)	Institutionalized orphans	49	33.06	2.968	5.587	.000*
	Non-institutionalized	52	28.04	5.594		
Dimension (social)	Institutionalized orphans	49	29.82	5.776	2.677	.382
	Non-institutionalized	52	26.92	5.079		
Dimension (Temperamental)	Institutionalized orphans	49	29.61	4.915	4.496	.532
	Non-institutionalized	52	25.33	4.664		
Dimension (Educational)	Institutionalized orphans	49	31.08	4.941	2.873	.105
	Non-institutionalized	52	27.77	6.489		
Dimension (Intellectual)	Institutionalized orphans	49	29.43	5.025	1.540	.594
	Non-institutionalized	52	27.96	4.546		
Self-concept total	Institutionalized	49	183.22	16.687	4.969	.012
	Non-institutionalized	52	162.23	24.739		

To answer Q1 t- test was applied to determine the significant difference between the self-concept of institutionalized and non-institutionalized students. Table 1 shows that the calculated .012 was found to be less than .05 for self-concept (total). Table 1 also shows that, calculated p- value .000* was found to be less than at the .05 level of significance. So, it reveals that there is a significant difference in physical dimension of self-concept of non- institutionalized and institutionalized orphans. But, on the other dimensions of self-concept such as social, temperament, educational and intellectual no significant difference was found.

Table-2: Mean, standard deviation, significant t and p value of institutionalized and non-institutionalized students on perceived loneliness

Variable	Category	N	Mean	Standard deviation	t	p-value
Perceived loneliness	Institutionalized	49	106.00	16.717	2.136	.035
	Non-institutionalized	52	99.83	12.089		

Table 2 shows that, calculated p-value .035 was found to be less than at .05 level of significance. So, it reveals that there is a significant difference in perceived loneliness of non- institutionalized and institutionalized orphans. An examination of the means of two groups suggests that institutionalized students have higher perception on loneliness than non-institutionalized orphans.

Table-3: Mean, standard deviation, significant t and p value of perceived loneliness with respect to gender

Variable	Category	N	Mean	Standard deviation	t	p-value
Perceived loneliness	Boys	59	104.76	13.719	1.576	.221
	Girls	42	100.10	15.910		

Table 3 shows that, calculated p- value .221 was found to be more than .05 level of significance. So, it reveals that there is no significant difference in loneliness with respect to gender.

Table-4: Coefficient of correlation between self-concept and perceived loneliness of institutionalized student

Variable	Total sample (N)	D. f (N-2)	Coefficient of correlation (r)
Self-concept (physical)	49	47	-.09
Loneliness	49		
Self-concept (social)	49	47	-.00
Loneliness	49		
Self-concept (Temperamental)	49	47	.36
Loneliness	49		
Self-concept (Educational)	49	47	-.10
Loneliness	49		
Self-concept(moral)	49	47	-.03
Loneliness	49		
Self-concept(intellectual)	49	47	.02
Loneliness	49		

Table 4 shows the coefficient of correlation of self-concept (physical) and loneliness is -0.9, self-concept (temperamental) and loneliness is .36, self-concept (Educational) and loneliness is-.10 therefore insignificant at 0.05 level similarly. In the other dimension such as self-concept (social) and loneliness is-.001, self-concept (Moral) and loneliness -.03, and self-concept (intellectual) and loneliness .023 are significant value. Thus, it may be concluded that social, moral and intellectual dimensions of self-concept and loneliness are significantly related with each other. It means there is insignificant and negative relationship between self-concept and loneliness of institutionalized students.

Table-5: Coefficient of correlation between self-concept and perceived loneliness of non-institutionalized students

Variable	Total sample (N)	D.f (N-2)	Coefficient of correlation
Self-concept (physical)	50	48	-.34
Loneliness	50	48	
Self-concept (social)	50	48	-.16
Loneliness	50	48	
Self-concept (Temperamental)	50	48	-.16
Loneliness	50	48	
Self-concept (Educational)	50	48	-.28
Loneliness	50	48	
Self-concept (Moral)	50	48	-.13
Loneliness	50	48	
Self-concept (intellectual)	50	48	-.22
Loneliness	50	48	

Table 5 shows the coefficient of correlation of self-concept (physical) and loneliness .01, self-concept (Educational) and loneliness .04 it is significant. In the other dimension such as self-concept (social) and loneliness .24, self-concept (Temperamental) .25 and loneliness, self-concept (Moral).35, self-concept (intellectual).115 therefore insignificant at .05 level. Thus, it may conclude that self-concept and loneliness are insignificant related with each other. It means there is insignificant and negative relationship between self-concept and loneliness of non-institutionalized students.

Discussion

The purpose of the study was to study the significant difference in self-concept of institutionalized & non-institutionalized students. The result indicate that institutionalized orphans have higher physical self-concept than non-institutionalized orphans. But, in the other dimensions of self-concept such as social, temperament, educational and intellectual no difference was found in institutionalized and non-institutionalized orphans. The above result is contrary with the study conducted by Ubhangha & Oputa, (2008) which revealed that the institutional children when compared with non-institutional children were found to be similar on all aspects of self-concept but significantly differed on academic orientation and vocational interests (Ubhangha & Oputa, 2008).

The aim of research was to study perceived loneliness of institutionalized & non-institutionalized students. The result revealed that Institutionalized students have higher perception on loneliness than non-institutionalized orphans. The above result is contrary with the study conducted by Upmanyu and Dhingra (1988). The results indicated that loneliness was correlated significantly and negatively with social preference. Rejected children were found to be the loneliest in comparison to the other sub-groups.

The purpose of the research was to study the significant difference in loneliness of institutionalized & non-institutionalized w.r.t gender. However, no difference was found in loneliness with respect to gender. The result is contrary with the result of the study conducted by Galanaki and Kalantzi-Azizi (1999) which revealed that girls had marginally substantial greater scores of loneliness than boys.

Conclusion

The importance of parents in a child's growth-physical, cognitive, social, moral, etc.-has already been emphasised. Any study into education is worthwhile if it has positive effects on education. As far as the current investigation is concerned, it can be asserted that the helpful data gathered may help to improve the pupils' academic accomplishment. According to the study's findings, institutionalised orphans have a greater physical self-concept than non-institutionalized orphans. This difference in physical self-concept is significant between non-institutionalized and institutionalised orphans. In order to address concerns with child mental health, physical self-concept, etc., non-institutionalized orphans require extraordinary child supervision and counselling programmes run by mental health professionals. Therefore, guardians should give non-institutionalized people more affection, care, and attention. In order to prevent institutionalised orphans from feeling lonely, school administrators should pay special attention to them and involve them in a variety of social activities.

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An Analysis of Attitudes towards Teaching among Male and Female B.Ed. Students

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ABSTRACT

This study investigates the attitudes of male and female B.Ed. students toward the teaching profession within self-financed teacher education institutions affiliated with C.C.S. University, Meerut. The research was motivated by the increasing privatization of higher education in India, especially the emergence of self-financed colleges prioritizing profit over educational quality. The primary objective was to compare gender-based attitudes across four dimensions: the profession of teaching, student-teacher relationships, educational institutions, and teaching as a service.

Using a stratified random sampling method, a sample of 100 B.Ed. students (50 males and 50 females) from five self-financed institutions was selected. Data were collected using the "Teaching Attitude Scale" developed by Dileep Kumar Mishra. The analysis revealed no statistically significant differences between male and female students in their attitudes toward any of the four dimensions studied. All computed 't' values fell below the critical threshold of 1.96, indicating similar perceptions and dispositions across gender.

The study concludes that gender does not significantly influence attitudes toward teaching among B.Ed. students in self-financed institutions. These findings highlight the potential for gender-inclusive teacher education policies and support the development of neutral and balanced pedagogical practices in teacher training programs.

Key words: Attitude, Teaching, Male and Female B.Ed. Students

Introduction

Higher education in the country is gradually falling under the influence of privatization. Within the private sector, two main categories are evident: government-aided institutions and self-financed institutions. Both types operate within an affiliating system. Teacher education is no exception to this trend. Self-financed teacher education institutions are a relatively new phenomenon in Uttar Pradesh. These institutions are often established not to fulfill the needs of teacher education, but primarily to generate profit. Consequently, teacher education in the country is facing significant challenges, a situation that has been consistently highlighted by the University Education Commission (1948), the Secondary Education Commission (1952-53), and the Education Commission (1964-66). It

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appears that private initiatives in the field of teacher education may be exacerbating these issues.

In 2000, C.C.S. University, Meerut had one affiliated degree college offering teacher education. By 2001, the first self-financed college of education was established under C.C.S. University, Meerut. In the following year, more than three hundred fifty colleges of education were established.

Internship programs need to be designed to provide essential practical exposure related to teacher education institutions. These programs will equip prospective teacher educators with a comprehensive understanding of the functioning of teacher education institutions, the necessary improvements needed, and insights into the challenges related to maintaining institutional facilities, classroom management, and the organizational climate of the institution, among others. Practical work during internships and practice teaching should develop the competencies and skills required in the field of education and the specific demands of teacher education institutions.

One of the fundamental objectives of any professional program is to foster a positive attitude toward the profession. In addition, it is essential to develop a solid theoretical background along with practical skills, which are considered the core components of the program. These three elements-positive attitude toward the profession, strong theoretical knowledge, and professional skills-are the foundational pillars of a successful career. The quality of a professional course relies on these elements.

The first pillar, attitude, is the cornerstone of a profession. The success of an institution, as well as the success of individuals within it, largely depends on the degree of a positive attitude each individual has toward their profession. An individual with a strong positive attitude is more likely to work diligently to understand the intricacies of their field and to master the necessary skills. Conversely, a lack of positive attitude can hinder progress. Shiv Khera, in his well-known book "You Can Win," states that 85% of an individual's success is attributed to their attitude. Therefore, professional education institutions that cultivate a more positive attitude in their students are superior to those that do not.

In the context of teacher training institutions, it is crucial to assess whether self-financed institutions in the twenty-first century successfully develop a positive attitude toward the teaching profession among pupil teachers.

Attitude is a significant factor in the teaching-learning process. Consequently, the study of attitudes-including their measurement, changes, and relationships with various other variables-has become an important area of research in social and educational psychology. Attitudes influence perceptions of objects, choices of friends, selection of information, and many other behaviors in human beings. Himmelfarb and Eagly (1974) defined attitudes as: "Attitudes have been held responsible for some of the good deeds and virtually all of the evils of mankind."

The importance of attitudes was formally recognized in the early days of social psychology. Thomas and Zaniecki (1918) defined social psychology as "the scientific study of attitudes." Allport (1954) regarded attitude as "the most distinctive and indispensable concept in contemporary American social psychology."

The history of attitude research indicates

that during the 1920s and up to World War II, studies primarily focused on defining attitudes and measuring them. Efforts were also made during this period to explore attitude change. Following this time, educators began to take a strong interest in studying the attitudes of teachers toward teaching, students, schools, and administration.

Attitudes can be defined in both conceptual and operational terms, which are closely related. The conceptual definition refers to the meaning of a construct within an abstract theoretical system. A theory is typically needed to connect a concept to its various operations. In contrast, an operational definition explains a concept in terms of specific operations, such as designing, administering, and scoring an opinion questionnaire.

Different authors have provided various conceptual definitions of attitude. The term "attitude" was first used to refer to "the sum total of a man's inclinations and feelings, prejudices or biases, preconceived notions, ideas, fears, threats, and convictions about a specific topic" (Thurstone and Chave, 1929). Later, when the motivational and effective aspects of attitudes were emphasized, Thurstone (1931) defined an attitude as "the affect for or against a psychological object." Allport (1954) described attitude as "a mental and neutral state of readiness, organized to influence the individual's responses to all objects and situations with which it is related."

The emotional quality of attitudes was further highlighted by Krech and Crutchfield (1948), who defined an attitude as "an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world."

All of these definitions highlight the underlying dimensions of 'favorability' and 'unfavorability' towards an object, which form the basis of Thurstone's attitude scaling procedures. Researchers like Fishbein and Ajzen (1972) have examined the relationship between attitudes and behaviors. They view attitudes as predispositions that lead individuals to think, feel, and act in certain ways. These attitudes can be inferred from three sources: cognitive, affective, and behavioral components. Among these, the affective component is considered the most central aspect of attitudes.

Himmelfarb and Eagly (1974) posit that the term 'attitude' is often used generically to refer to any statements about what people think, feel, or how they intend to act. Operational definitions imply the use of specific tools to obtain responses from subjects. The most commonly used instrument in attitude studies is some form of questionnaire or scale, which assesses attitudes through self-reports of opinions, beliefs, feelings, behaviors, or intended actions. Typically, these statements are scaled to indicate 'favorability' or 'unfavorability' towards the objects of attitude.

In the present study, attitude is defined as the reaction of pupil teachers towards the teaching profession.

Need of the Study

The Education Commission (1964-66) stated that "if social change on a grand scale is to be achieved without violent revolution, education is the instrument that can be used." Thus, education is regarded as a powerful tool for social change in our country. It is arguably the most effective means to improve society, but this cannot happen without teachers. Teachers are the medium through which

educational objectives and plans are realized.

Teaching is a profession that experiences radical changes within the educational system on a daily basis. Teachers face numerous challenges due to modernization and globalization. A survey revealed overwhelming concern regarding the quality and relevance of education. As an essential component of the social system, education plays a critical role in molding, shaping, reforming, and reconstructing society over time. Unfortunately, teaching in our country is not regarded as a full-fledged profession like medicine, engineering, or law.

In another survey, a large majority of teachers (78%) expressed a favorable attitude towards both male and female teachers, indicating that teachers' attitudes are related to their adjustment efficiency to some extent. To further investigate the impact of personal and demographic variables on student teachers in B.Ed. programs, it is necessary to explore the following objectives: (i) perceptions of teaching as a profession, (ii) student-teacher relationships, (iii) views on educational institutions, and (iv) teaching as a service.

Attitude is considered a significant factor in the teaching-learning process. Therefore, studying attitudes, measuring them, and understanding their changes and relationships with other variables has become an important area of research in social and educational psychology. Human behaviors, such as the selection of friends and sources of information, are often influenced by attitudes.

One survey examined the attitudes of prospective teachers toward the teaching profession, aiming to determine whether their attitudes differed based on gender, socio-economic background, and intrinsic/extrinsic motivation. The findings showed that female prospective teachers, students from middle socio-economic backgrounds, those who preferred the teaching profession, and individuals with intrinsic motivations to become teachers exhibited higher levels of positive attitudes toward teaching. Numerous self-reporting instruments have been developed to measure attitudes toward teaching, education, schools, and courses among teachers and students. This impact study aimed to identify attitudinal changes that can serve as an input variable for further analysis.

Statement of the Proble

The research problem is stated as: An Analysis of Attitudes towards Teaching among Male and Female B.Ed. Students.

Objectives of the Study

The study aimed to achieve the following main objective: To compare the attitudes towards teaching of male and female B.Ed. students.

This main objective was further divided into four sub-objectives based on the four dimensions of the Attitudes Towards Teaching Scale:

(i) To compare the attitudes towards teaching regarding the profession between male and female B.Ed. students.

(ii) To compare the attitudes towards teaching in terms of teacher relationships between male and female B.Ed. students.

(iii) To compare the attitudes towards teaching concerning educational institutions between male and female B.Ed. students.

(iv) To compare the attitudes towards teaching regarding teaching as a service between male and female B.Ed. students.

Hypotheses of the Study

To achieve the objectives of the study, the following main hypothese were formulated and tested: 1. There is no significant difference between male and female students in their attitudes towards teaching.

This main hypothesis is divided into four sub-hypotheses based on the four dimensions of the Attitude Towards Teaching Scale:

(i) Male and female B.Ed. students do not differ significantly in their attitudes towards teaching in terms of the profession.

(ii) Male and female B.Ed. students do not differ significantly in their attitudes towards teaching in terms of teacher relationships.

(iii) Male and female B.Ed. students do not differ significantly in their attitudes towards teaching in terms of educational institutions.

(ivs) Male and female B.Ed. students do not differ significantly in their attitudes towards teaching in terms of teaching as a service.

Definitions of Technical Terms

"An attitude can be defined as an enduring organization of motivational, emotional, perceptual and cognitive processes with respect to some aspect of the individual's world." -Krech and Crutch Field

"An attitude is mental and neutral state of readiness, exerting directive or dynamic influences upon the individual's response to all objects and situation with which it is related."

-Britt,

"An attitude in a dispositional readiness to response to certain situations, persons or objects in a consistent manner, which has been learned and has become one's typical mode of response. -Freeman

Delimitation of the Study

The current study focused on measuring the attitude of B.Ed. students enrolled in colleges affiliated with C.C.S. University, Meerut.

Research Method

The research method selected for a study is determined by the nature of the problem being investigated. The objective of the present study was to assess the effectiveness of self-financed B.Ed. institutions with regard to the attitudes toward teaching of both female and male students. The study aimed to understand the current attitudes of these two groups toward teaching. To achieve this, a survey research method was employed.

Population of the Study

All B.Ed. students from self-financed institutions affiliated with C.C.S. University, Meerut, constituted the population of the study.

Sample of the Study

One hundred students, comprising fifty males and fifty females, were selected from self-financed institutions as the sample of the study.

Sampling Method

The stratified random sampling method was used to select the study sample. Five colleges were randomly chosen from each group, with 10 male and 10 female students

selected from each college. Additionally, five colleges were selected from a total of 225 self-financed colleges. From these five colleges, a total of 20 B.Ed. students were selected, consisting of 10 males and 10 females. In total, 100 students were included in the study.

To achieve the objective, the following tools were used: The "Teaching Attitude Scale," developed by Dileep Kumar Mishra, was utilized to measure attitudes towards teaching.

Tools Used in the Study

Table-1: Comparison of attitude towards teaching in terms of Professional Dimension of male and female B.Ed. Students

Groups	No. of Students	Mean	S.D.	't' Value	Significance level
Male students	50	12.78	4.13	0.32	Ins.
Female students	50	12.54	4.56		

Table 1 presents analyzed data comparing the attitudes towards teaching among male and female pupil teachers in the Department of Education. The obtained Critical Ratio (C.R.) value is 0.32, while the minimum required C.R. value for significance is 1.96 or higher. Therefore, the result of 0.32 is deemed insignificant.

Additionally, Table 1 indicates that the mean scores for both groups are nearly identical. This suggests that male and female students share a similar attitude towards teaching as a profession.

Since no prior research has been conducted on the comparison of attitudes towards teaching between male and female B.Ed. students, it is not possible to draw any definitive conclusions about the reasons for these findings.

Table-2: Comparison of attitude towards teaching in terms of student teacher relation dimension of male and female B.Ed. Students

Groups	No. of Students	Mean	S.D.	't' Value	Significance level
Male students	50	12.72	3.83	0.24	Ins.
Female students	50	12.54	3.68		

Table 2 presents the analyzed data comparing the attitudes towards teaching, particularly in terms of the student-teacher relationship, among male and female B.Ed. students in the Department of Education. The calculated C.R. value is 0.24, while the minimum required C.R. value for significance is 1.96 or higher. Therefore, the obtained C.R. value is not significant.

The table indicates that the mean scores of both groups are nearly the same, suggesting that male and female B.Ed. students have a similar attitude towards teaching in relation to the student-teacher relationship dimension.

Since no prior research has been conducted on this specific comparison of attitudes among male and female B.Ed. students, it is difficult to draw any definitive conclusions about the reasons behind these findings.

Table-3: Comparison of attitude towards teaching in terms of educational institutions dimension of male and female B.Ed. Students

Groups	No. of Students	Mean	S.D.	't' Value	Significance level
Male students	50	13.92	3.72	0.23	Ins.
Female students	50	13.71	3.96		

Table 3 presents analyzed data comparing the attitudes toward teaching among male and female B.Ed. students studying in different educational institutions. The obtained critical ratio (C.R.) value was 0.23, while the minimum required C.R. value for significance is 1.96 or higher. Therefore, the obtained C.R. value is considered insignificant. The table also indicates that the mean scores of both groups are nearly identical. This suggests that male and female students attending self-financed institutions have a similar attitude regarding the educational institutions in relation to teaching.

Additionally, the research did not identify any existing studies in the literature that specifically address the attitudes toward teaching among male and female B.Ed. students. As a result, the findings of the present study cannot be compared or criticized in light of previous research.

Table-4: Comparison of attitude towards teaching in terms of teaching as service dimension of male and female B.Ed. Students

Groups	No. of Students	Mean	S.D.	't' Value	Significance level
Male students	50	15.54	2.82	0.7	Ins.
Female students	50	15.12	3.2		

Table 4 presents analyzed data comparing attitudes toward teaching as a service among male and female B.Ed. students in the Department of Education. The obtained C.R. value was found to be 0.7, which is below the minimum required value of 1.96. Therefore, this C.R. value is considered insignificant. The table indicates that the mean scores for both groups are quite similar, suggesting that male and female B.Ed. students have a comparable attitude towards teaching in the context of teaching as a service.

Furthermore, the research did not identify any studies in the existing literature that examine the attitudes towards teaching among male and female B.Ed. students. As a result, the findings of the present study cannot be critiqued based on previous research.

Table-5: Comparison of attitude towards teaching of male and female Students

Groups	No. of Students	Mean	S.D.	't' Value	Significance level
Male students	50	53.6	6.89	0.71	Ins.
Female students	50	52.6	7.10		

Table 5 presents analyzed data comparing the attitudes towards teaching among male and female pupil-teachers in the education department. The obtained Critical Ratio (C.R.) value is 0.71, while the minimum required C.R. value for significance is 1.96 or higher. Therefore, the obtained C.R. value is not statistically significant.

The data shows that the mean scores of both groups are nearly identical, indicating that male and female students studying in B.Ed. colleges have similar attitudes towards teaching.

Without any empirical evidence, the present findings cannot be criticized. However, it is important to note that attitudes are deeply rooted beliefs that take time to develop. Since the pupil-teachers from both institutions have only just started their careers-around six months ago-it will take time for their attitudes to fully evolve. As both groups of pupil-teachers are at similar stages in their attitudes towards teaching, no significant differences in their attitudes have been observed.

Findings and Conclusions

The main purpose of all scientific inquiries is to draw conclusions. Without conclusions, the entire task loses its meaning and the effort proves to be useless. Therefore, the researcher has humbly presented the findings of the study. The conclusions drawn from these findings have been listed after validating the hypotheses.

Validation of Hypotheses

Hypothesis No. 1 posits that male and female students enrolled in the B.Ed. program do not differ significantly in their attitudes toward teaching as a profession. The calculated C.R. value is 0.32, which is considered insignificant. This finding indicates that male and female B.Ed. students have similar attitudes toward teaching as a profession, leading to the acceptance of Hypothesis No. 1.

Hypothesis No. 2 suggests that male and female B.Ed. students do not differ significantly in their attitudes toward teaching in terms of relationships. The C.R. value for this hypothesis is 0.24, which is also insignificant. This result implies that there is no significant difference in how male and female B.Ed. students view teaching in relation to relationships, thus accepting Hypothesis No. 2.

Hypothesis No. 3 states that male and female B.Ed. students do not significantly differ in their attitudes toward teaching regarding educational institutions. The C.R. value is 0.23, which is insignificant. This indicates that both male and female B.Ed. students share similar attitudes toward teaching in relation to educational institutions,

leading to the acceptance of Hypothesis No. 3.

Hypothesis No. 4 claims that male and female B.Ed. students do not differ significantly in their attitudes toward teaching as a service. The C.R. value is 0.7, which is insignificant. This finding shows that male and female B.Ed. students hold similar views on teaching as a service, resulting in the acceptance of Hypothesis No. 4.

Hypothesis No. 5 asserts that there is no significant difference in the attitudes of male and female B.Ed. students toward teaching male and female students. The C.R. value is 0.71, which is also insignificant. This suggests that both male and female B.Ed. students have similar perspectives on teaching their peers, leading to the acceptance of Hypothesis No. 5.

Findings

B.Ed. male and female students exhibit the same attitude towards teaching. This attitude can be divided into four dimensions:

(i) Both male and female B.Ed. students demonstrate an equal attitude towards teaching regarding the professional dimension.

(ii) Both male and female B.Ed. students show an equal attitude towards teaching in terms of student-teacher relationships.

(iii) Both male and female B.Ed. students have a similar attitude towards teaching concerning educational institutions.

(iv) Both male and female B.Ed. students display an equal attitude towards teaching as a service.

Conclusion

Based on the validation of hypotheses and the subsequent findings, it can be concluded that there is no significant difference between male and female B.Ed. students in their attitudes toward teaching as a profession. This conclusion is supported by the consistently insignificant C.R. values across all five hypotheses, each of which examined different dimensions of teaching attitudes.

Specifically, both male and female students share similar perspectives in the following areas:

1. Professional Dimension - They equally value teaching as a career.
2. **Student-Teacher Relationships -** They hold comparable attitudes toward relational aspects of teaching.
3. **Educational Institutions -** Their views on the role of teaching within educational institutions are aligned.
4. **Teaching as a Service -** Both genders view teaching similarly in terms of its service-oriented nature.
5. **Gender Neutrality in Teaching -** They exhibit similar attitudes towards teaching both male and female students.

Therefore, it can be concluded that gender does not play a significant role in shaping the attitudes of B.Ed. students toward teaching. This insight is valuable for educational planners, teacher educators, and policymakers aiming to develop inclusive teacher training programs that cater equally to all genders.

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Creating Inclusive Learning Spaces through Universal Design for Learning as a Framework for K-12 Education: A Narrative Review

Vaibhav Verma* & Jijo Varghese**

ABSTRACT

The Universal Design for Learning (UDL) framework aims to provide inclusive and engaging learning environments regardless of a learner's skills, background, or preferred learning style. Developed in the 1990s by academics at the Centre for Applied Special Technology (CAST), Universal Design for Learning is based on the ideas of different modes of representation, interaction, and expression. From initial roots in special education, the idea has expanded throughout time to include general education, encouraging diversity and individualised learning opportunities. The influence of UDL on student outcomes, such as academic achievement, engagement, and social-emotional development, is examined in this study along with current trends and implementation issues in the field of education. The study also looks at how UDL is incorporated into curricula in educational institutions, highlighting the methods and approaches teachers use to get over difficulties. It also evaluates the role that advocacy and policy have in promoting UDL, with a focus on India's National Education Policy (NEP) 2020. In order to ensure that every student has the chance to thrive in an inclusive learning environment, with recommendations for educators and policymakers on how to advance the implementation of UDL.

Key words: Universal Design for Learning (UDL); Inclusive Education; School Education; Learning Environment

Introduction

The educational framework known as Universal Design for Learning (UDL) seeks to give every student equitable access to learning opportunities by providing a variety of representation, action and expression, and engagement. The Centre for Applied Special Technology (CAST) researchers originally presented it in the 1990s. The foundation of the framework is the belief that every learner is unique and that there is no such thing as a successful one-size-fits-all method of instruction. The goal of UDL is to break down obstacles to learning and establish a more inclusive learning environment. Secondary education is one of the educational contexts

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where UDL has been effectively implemented (Terrell, 2016; Antona & Stephanidis, 2016).

UDL is a teaching approach that works to accommodate the needs and abilities of all learners and eliminates unnecessary hurdles in the learning process (Rose et al., 2006). UDL is grounded in three key principles: providing multiple means of representation, multiple ways of engagement and expression. These principles serve as the foundation for creating a flexible and inclusive learning environment that accommodates the diverse needs of all students, regardless of their abilities, backgrounds, or learning styles (Antona & Stephanidis, 2016) and is also emphasised in the NEP 2020.

The concept of UDL has evolved over the past few decades, gaining momentum as educators recognized the limitations of traditional teaching methods. Initially rooted in special education, UDL has expanded its reach to encompass mainstream education, promoting inclusivity for all learners. Understanding the historical development of UDL is crucial for appreciating its current impact and potential future applications.

The history and evolution of UDL in educational settings have seen its implementation in various contexts. For instance, in 2016, language arts teachers at Southwest High School began implementing UDL strategies by providing multiple means of representation, action and expression, and engagement in their lessons, leading to increased student participation and accomplishment of learning goals (Terrell, 2016). Furthermore, the application of UDL principles has been observed in the field of archaeology, where scholars have emphasized the importance of creating enthusiastic, engaging, respectful, and accessible learning environments through the proper leverage of digital technology, whether in physical or online classrooms (Peuramaki-Brown et al., 2020). Additionally, the book "Video Games and Learning: Teaching and Participatory Culture in the Digital Age" by Kurt Squire explores the intersections between commercial game design for entertainment and design-based research conducted in schools, highlighting the evolving field of immersive, digitally?mediated learning environments and outlining the future of education (Squire, 2012). These examples demonstrate the ongoing evolution and application of UDL in diverse educational settings.

The UDL frame-work encompass the of guidelines and checkpoints that guide educators in designing inclusive learning experiences. These components address the three principles of UDL and provide practical strategies for implementation. Exploring these components is essential for understanding how UDL can be effectively applied in classrooms. The three key components are various ways of representation, action and expression, and multiple means of engagement implemented (Terrell, 2016; Antona & Stephanidis, 2016).

Multiple means of representation involve presenting information in various formats, such as text, audio, and visual aids, to accommodate different learning styles and abilities. Multiple means of action and expression involve providing students with various ways to demonstrate their knowledge, such as through writing, speaking, or creating multimedia projects. Multiple means of engagement involve tapping into students' interests and providing them with appropriate challenges to increase motivation and participation. The UDL frame-work is based on the concept that all students have different learning styles, abilities, and needs, and that a one-size-fits-all approach to teaching is not effective (Terrell, 2016).

UDL is a framework for designing educational materials and environments that are accessible and effective for all learners, including those with disabilities. The theoretical foundations of UDL are based on the principles of neuroscience, which suggest that learners have different learning styles and preferences and that learning is most effective when it is personalized and engaging. Research shown positive results for UDL as it can improve learning outcomes for all students, including those with disabilities, by providing multiple means of representation, expression, and engagement. For instance, an investigation by the National Center on Universal Design for Learning found that UDL can improve student engagement, motivation, and achievement (Rezapour et al., 2020). Another study found that UDL can improve the reading comprehension of students with learning disabilities (McMurtry, 2014).

Creating accessible and engaging learning environments is crucial for ensuring that all students have equal opportunities to learn and succeed. Engaging in learning environments that are personalized to the individual learner's needs and preferences can improve motivation and increase student participation (Oyserman & Dawson, 2021). Teachers can create engaging learning environments by using multimedia tools, interactive activities, and group projects to keep students interested and engaged (Liu, 2023). Overall, creating accessible and engaging learning environments is essential for promoting inclusive education and ensuring that all students have the opportunity to succeed.

This study aims to explore the recent trends in research related to UDL in school education. By examining the evolution of UDL, current implementation strategies, the impact on student outcomes, policy and advocacy efforts, and future directions, this study seeks to provide a comprehensive overview of how UDL is shaping the landscape of accessible and engaging learning environments.

Objectives of the Study

The main objectives of the study are mentioned below:

1. To examine recent trends in Universal Design for Learning (UDL) research and practice in school education.
2. To analyze the impact of UDL on student learning outcomes, including academic achievement, engagement, and social-emotional development.
3. To explore the adoption and integration of UDL in school curricula, along with strategies and techniques for implementation.
4. To assess the policy and advocacy efforts surrounding UDL, including government initiatives and recommendations for policymakers.
5. To identify future directions and challenges in UDL implementation, including emerging trends and areas for further exploration.

Methodology

The present review study endeavours to uphold transparency and rigour in the execution of the review process through many phases, such as the search strategy, study selection criteria, and data extraction procedure. A thorough literature search was carried out across several electronic databases, including SCOPUS, Google Scholar, ERIC, JSTOR, Web of Science, and Semantic Scholar, encompassing publications published from 2000 to 2024, in order to find relevant studies for inclusion in this review. The following search phrases and keywords were used: "Universal Design for Learning," "UDL," "learning,"

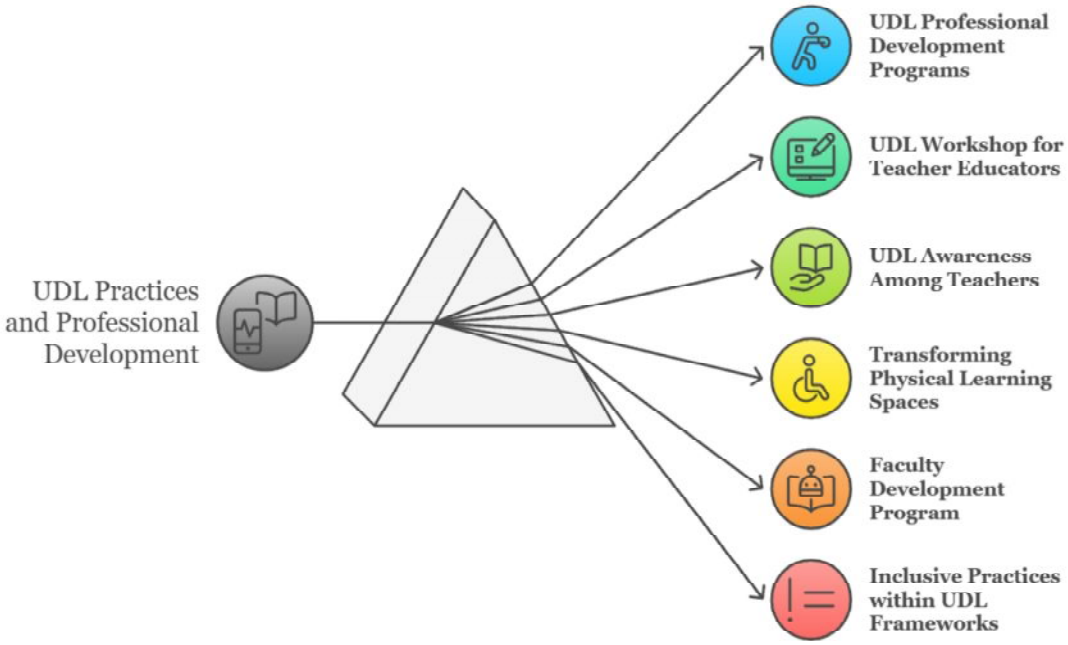
"learner-centred approach," "Inclusive Education," "Learning environments," "NEP 2020," "India," "Instructional Strategies," and "school education," And so forth. These keywords were combined using BOOLEAN operators (AND, OR) to create search strings for the literature search such as "Universal Design for Learning" AND "school education", "UDL" AND "inclusive education", "Accessible learning environments" AND "engaging learning environments", "Curriculum design" AND "instructional strategies" AND "diverse learners" and so forth helping to identify relevant studies that explore the relationship between UDL and School Education. The publications were vetted by title and abstract review using the established selection criteria of language and relevance to the research issues. The significant evidence and key findings were extracted after careful examination of the selected 39 full-text papers and book chapters. The reviewed literature was then methodically organized, categorizing it based on themes, theories and research perspectives using deductive thematic analysis. Following that, a review of the literature is performed, including evaluating quality, identifying gaps and trends, synthesizing major findings, theories, and viewpoints from the literature and interpreting their relevance to the research questions. The inclusion and exclusion criteria were defined to select studies that aligned with the research question and aimed to ensure the relevance and quality of the included literature. The criteria applied can be seen in Table 1.

Table-1: Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Relevance to the Research Question	[1] Articles directly addressing or contributing to the topic under review. [2] Studies which have discussed the concept of UDL. [3] Studies which explore the role of learner-centered approaches in fostering future-ready learners.	Excluded articles not addressing the main research topic.
Publication Type	Include peer-reviewed journal articles, conference proceedings, and reputable books or book chapters.	Excluded unpublished and non-peer-reviewed sources, such as opinion pieces, editorials, and grey literature (unless deemed necessary).
Publication Date	Studies published between 2000 and 2024.	Excluded articles published outside the specified date range.
Population	Students and Adults enrolled in learning with UDL.	Excluded studies with unmatched populations of interest.
Interventions	Universal Design for Learning (If any).	Exclude studies that do not involve the relevant interventions or exposures.
Language	English only.	Excluded articles in languages not specified in the inclusion criteria.
Study Quality	Criteria for assessing the quality of studies involved using validated assessment tools, and risk of bias assessment.	Excluded studies that do not meet the defined quality criteria.
Full-Text Availability	Full-text articles were required, and in some cases abstracts alone were sufficient.	Excluded duplicate publications to avoid redundancy and studies from which essential data were not available or accessible.

Figure-1: Learning from the Existing Literature

UDL Practices & Professional Development



The literature review provides a range of insights on Universal Design for Learning (UDL) practices and professional development in the context of inclusive education, particularly within India and other regions. In the study by Ewe, Dalton, Bhan, Gronseth, and Dahlberg (2023), two examples of UDL professional development programs are examined-one in Sweden and another in India. This study highlights the contextual impact of UDL, particularly within India, yet does not directly address UDL practices specific to the Indian educational landscape. The examples demonstrate how UDL professional development can vary depending on regional needs.

In a separate study by Bhan and Panshikar (2023), teacher educators from India participated in a six-hour online UDL workshop organized by the Tata Institute of Social Sciences. The study aimed to assess teacher educators' understanding of UDL principles and their ability to apply these principles to evaluate Open Educational Resources (OERs) for accessibility. Findings suggest that teacher educators can benefit from UDL training and that these principles can effectively guide the evaluation of OER accessibility.

Krishan and Sharma (2023) investigated UDL awareness among teachers working in inclusive settings across India. The study found that teachers in Himachal Pradesh, particularly general educators, lacked a comprehensive understanding of UDL. Special educators demonstrated a slightly higher awareness of UDL than their general education counterparts. The authors emphasize that successful UDL implementation in inclusive settings requires a holistic approach, where

every aspect of the school system is structured to meet the diverse needs of students.

Khurana (2022) explores the concept of converting physical spaces in schools into functional learning spaces to facilitate subconscious learning and enhance the implementation of UDL. The paper proposes a framework for designing inclusive learning environments, advocating for a transformation of physical spaces to align with UDL principles.

Another study by Misquitta and Joshi (2022) presents the results of a faculty development program in India focused on UDL. This program equipped teachers with practical, contextually relevant UDL strategies. Participants were able to implement a variety of strategies in their classrooms and valued the hands-on, context-specific resources provided during the training, which facilitated the application of UDL principles in the Indian context.

Finally, Khurana (2019) discusses the role of UDL in fostering inclusive education and bridging the gap from equality to equity in learning. The chapter outlines three inclusive practices adopted by various organizations, including the Pratham Education Foundation's instructional framework, the Building as Learning Aid (BaLA) initiative, and the Barkhaa reading series. These practices aim to reduce barriers, create accessible learning environments, and promote self-regulated learning among all students. The integration of these practices within UDL frameworks demonstrates how inclusive instructional designs can empower students by enhancing accessibility and supporting autonomy in learning.

Results and Discussion

Recent Trends in UDL Implementation

Adoption and integration of UDL in school curricula: In recent years, there has been a growing recognition of the importance of UDL in curriculum development. Schools and educational institutions worldwide have started adopting UDL principles to create curricula that cater to diverse learning needs (Lohmann et al., 2023). Preschool teachers, for example, can utilise UDL to make sure that the curriculum is matched to the needs of every student, hence lowering the need for some individualised interventions (Lohmann et al., 2023). However, the adoption and integration of UDL in teaching and learning have been limited due to various barriers, including lack of teacher ICT skills, confidence, and pedagogical training, lack of suitable educational software, limited access to ICT, and restrictive curricula (Buabeng-Andoh, 2012). Despite these challenges, UDL has been shown to be effective in addressing learning barriers through curricula and lessons that provide multiple means of engagement, representation, and action and expression (Dickinson, 2018).

Strategies and techniques for implementing UDL in classrooms: Educators are employing various strategies and techniques to implement Universal Design for Learning (UDL) effectively in classrooms. These strategies include the use of emerging technology, action research, and leadership support. A study discusses the opportunities and challenges of using new technology, such as robotization, automation, artificial intelligence, and immersive learning, to create inclusive educational experiences. It emphasizes the importance of making informed implementation

decisions around these new tools and presents practice recommendations (McMahon & Walker, 2019).

A different article explains how faculty in a program for preparing teachers created a distinctive pedagogy that was based on the UDL framework and involved teacher candidates in action research projects and research-based teaching techniques. This approach provided teacher candidates with the necessary skills for the development of teaching practice (Reinhardt et al., 2021). Additionally, a study explores the use of video-based reflection to engage novice special education teachers in reflecting on the implementation of UDL, differentiated instruction, and culturally responsive pedagogy, highlighting the potential of this approach to impact teachers' ability to implement pedagogical theory into practice (Davis et al., 2022). These sources provide insights into the diverse strategies and techniques being used to implement UDL in classrooms, including the use of technology, action research, and leadership support.

Challenges and barriers to UDL implementation: Despite the positive trends, UDL implementation is not without its challenges. Several common challenges faced by educators when implementing Universal Design for Learning (UDL) include:

1. **Distance Learning and Social-Emotional Learning (SEL):** The sudden move to distance learning during the COVID-19 pandemic posed significant challenges for educators in implementing SEL. Higher levels of school/district guidance were linked to higher SEL implementation with students and more educator usage of SE methods for themselves. Support for educators' SEL needs by the school/district was found to predict lower levels of struggle in implementing SEL during distant learning (Zieher et al., 2021).
2. **Personalized Learning School Models:** The implementation of technology-mediated personalized learning models has encountered challenges, disruptions, and contradictions in the dynamic context of schools. Structural and contextual factors have been identified as sources of these challenges, calling for recommendations for policymakers and practitioners engaged in implementing personalized learning models (Bingham et al., 2016).
3. **Co-Teaching Knowledge and Skills:** Educators, especially special educators, have highlighted the importance of co-planning, communication skills, and shared instruction as critical factors in effective co-teaching. Professional development has been identified as the most common way for educators to gain co-teaching knowledge and skills, suggesting the need for supportive pre-service and in-service programs and initiatives related to co-teaching (Shamberger et al., 2014).

These challenges reflect the diverse contexts in which educators work and the need for targeted support, professional development, and systemic strategies to address the barriers to effective UDL implementation.

Success stories and case studies of effective UDL practices: Several success stories and case studies have demonstrated UDL's effectiveness in practices in various educational settings. A literature review presented evidence that UDL-based

curriculum alleviates learning barriers for students and minimizes the need for special accommodations for students with disabilities (La et al., 2018). Additionally, a case study examined the impact of implementing UDL principles in a first-year undergraduate class, showing that UDL maximized the design and delivery of course instruction, benefiting a diverse student population, including those requiring disability services (La et al., 2018).

Furthermore, a study discussed the design and implementation of a Massive Open Online Course (MOOC) developed on UDL principles, focusing on Tangible User Interfaces (TUIs) and their potential in enhancing storytelling for inclusive education. The MOOC sought to increase educators' awareness of TUIs as instruments for producing accessible and captivating narrative experiences for all learners by providing them with the information and abilities required to build and implement TUIs in educational contexts (Pagliara et al., 2023). Another case study examined the use of UDL in small teacher education preparation programs, demonstrating how UDL framework components, such as case studies, role playing, and mentoring, contributed to the design of effective and efficient teacher preparation programs with a spiraled curriculum (Walker et al., 2022). Additionally, a multi-case study of undergraduate pre-service teachers investigated the possible connection between Teaching for Social Justice (TSJ) frameworks and UDL, illustrating how the latter might be used to address diversity in the classroom using UDL as a framework for social justice (Venkatesh, 2015). These studies collectively illustrate the positive impact of UDL practices in promoting inclusive education and addressing the diverse needs of learners.

Impact of UDL on Student Learning Outcomes: Academic achievement and performance of students with diverse learning needs. Research has consistently shown that UDL positively influences academic achievement for students with diverse learning needs. UDL's impact upon student learning outcomes, particularly academic achievement and performance of students with diverse learning needs, has been the subject of several studies. Recent studies have shown that UDL implementation improves academic outcomes for students with diverse learning needs (Wells, 2022; Thomas et al. 2023). Here are some key findings from the available sources, A study on the use of UDL in virtual formats in higher education revealed positive student perspectives on its implementation (Wells, 2022). Another study found that students with disabilities demonstrated increased interest, engagement, and better academic achievement when a UDT approach was used, compared to other approaches (Scott et al., 2011).

Engagement and motivation in UDL-based classrooms. Engagement and motivation are critical factors in student success. UDL fosters increased engagement and motivation by providing students with varied and meaningful learning experiences (Thomas et al., 2023). A study that focused on the advantages of Universal Design for Learning (UDL) and its adaptability to improve motivation during anatomy classes found a shift in the students' self-reported motivation levels (Dempsey et al., 2023).

Social-emotional development and well-being of students. Beyond academic outcomes, UDL has implications for the social-emotional development and overall well-being of

students. UDL contributes to creating supportive and inclusive learning environments that nurture students' emotional and social growth (Wells, 2022; Davies et al., 2013). The UDL lens informs the Recognising, Embracing, and Advocating for Diversity (READ) framework, which encourages perspective-taking and concentrates on guaranteeing that every child has an equitable learning experience, strengthening students' social-emotional growth and overall wellbeing (Franks et al., 2021).

Long-term benefits and implications for inclusive education. By analyzing long-term benefits and implications, it is evident that UDL has a sustained impact on inclusive education. For instance, a study found that a 6-hour professional development seminar on UDL resulted in higher scores for preservice general and special education teachers' overall performance in lesson design to reduce barriers (Lowrey et al., 2023). In order to support UDL's ongoing adoption and expansion, it is imperative to comprehend its long-term impacts. A longitudinal study on community-based art education among college students suggests that it may yield short- and long-term educational benefits, deepening student learning through the development of social connectedness. This study expands the possibilities for collaboration as a pedagogical model for inclusive postsecondary education (Blatt-Gross, 2023).

Policy and Advocacy for UDL:

Government initiatives and policies promoting UDL in education: Governments and educational authorities play a crucial role in shaping the educational landscape. India has been actively promoting the integration of UDL in schools to ensure equitable and inclusive education for all students through its policies and mandates. The importance of gender equality and women's empowerment as a priority for human development is recognized by the Indian government (S.K, 2016). This focus aligns with UDL principles, which emphasize the need to address individual differences and reduce barriers to learning. The Right of Children to Free and Compulsory Education Act (RTE) of 2009, for instance, mandates inclusive education and aims to provide quality education to all children, including those with disabilities (Kumar, 2012). The National Education Policy (NEP) 2020, a comprehensive policy framework for the Indian education system, also emphasizes the importance of UDL. The NEP advocates for a learner-centered approach, personalized learning, and the use of technology to enhance accessibility and inclusion. The National Policy for Persons with Disabilities (2016) and the NEP 2020 also highlight the need for UDL to ensure equitable learning opportunities for all students (Goldbart & Sen, 2012; S.K, 2016)

Advocacy efforts by stakeholders and organizations

Various stakeholders, including advocacy groups and educational organizations, actively promote UDL. Civil society organizations and advocacy groups have played a significant role in promoting UDL in the Indian context. Organizations like the National Association for the Blind (NAB) and the National Institute for Empowerment of Persons with Multiple Disabilities (NIEPMD) have been advocating for the rights of people with disabilities and promoting UDL in education (Goldbart & Sen, 2012).

Future Directions

Emerging trends and developments in UDL research and practice

The field of UDL is dynamic, with ongoing research and innovations. Advancements in Technology - The field of Universal Design for Learning (UDL) is witnessing advancements in technology, which play a crucial role in catering to diverse learning needs (Shivannavar, 2022). Pedagogical Approaches - Ongoing research is focusing on innovative pedagogical approaches to enhance UDL practices (Nagpal et al., 2023).

Areas for further exploration and improvement in UDL implementation

Identifying areas that require further exploration and improvement is crucial for advancing UDL in school education. There is a need to identify and address gaps in current UDL practices to advance school education. Research suggests that understanding the challenges in adoption of UDL is crucial for its effective implementation (Nagpal et al., 2023).

Addressing issues relating to equity and access in UDL

Equity and access are fundamental principles of UDL. Efforts are being made to address equity issues and promote access to quality education for all students, ensuring that UDL remains a tool for promoting social justice in education (Mishra, 2023).

Conclusion

By embracing UDL, educators can help to remove barriers to learning and create a more inclusive learning environment, where every student can participate and engage in the learning process. Creating accessible and engaging learning environments is essential for promoting inclusive education and ensuring that all students have the opportunity to succeed. Through the use of multimedia tools, interactive activities, and group projects, teachers can create engaging learning environments that are personalized to the individual learner's needs and preferences, thus improving motivation and increasing student participation.

Furthermore, this study has highlighted the importance of examining recent trends in UDL research and practice in school education. By analyzing the impact of UDL on student learning outcomes, exploring the adoption and integration of UDL in school curricula, assessing the policy and advocacy efforts surrounding UDL, and identifying future directions and challenges in UDL implementation, we will be able to comprehend how UDL is influencing schooling on a broader scale. Taking into account the potential benefits of UDL educators, policymakers, and stakeholders can create a more inclusive and equitable educational system though utilising UDL in their educational practices and policies.

In conclusion, UDL is a powerful educational framework that can help to create a more equitable and inclusive learning environment for all students. Regardless of a student's background, skills, or traits, educators may guarantee that every student has the chance to learn and achieve by carrying out more study on and implementing UDL.

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Telangana Education Landscape: Challenges and Opportunities

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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 studay 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. This abstract provides a concise overview of the current state of education in Telangana, highlighting key challenges and opportunities. Despite significant strides made since its formation, the state continues to grapple with issues such as infrastructure deficits, teacher shortages, and disparities in educational outcomes.

Key words: 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 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

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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, 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 crore. 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 Economics 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 per cent 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

By 2017, 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 35th position among the 36 states and union territories (UTs) in India, just above Bihar. The female literacy rate is lower than the national average of 65.5 and much lower than the male literacy rate as Table 1 shows. Table 1: Literacy Rates in Telangana, 2011 Total Male Female 66.54% 75.04% 57.99% Rural Urban 57.25% Census 2011.

Table-1: Percentage of Schools by Management Type Management Type Percentage of Schools Telangana India

Managementtype	Percentageof 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
Unrecognised	0.25	1.06
Madarsa recognised	0	0.43
Madarsa unrecognised	0.08	0.20

Source: Compiled from U-DISE Flash statistics

The present day education system in India has come a long way and the age old traditions have undergone a new makeover. Government of India is doing lots of efforts in this field so that the objective of inclusive growth can be achieved very soon by it. A great achievement of the Indian government is a big jump in the literacy rate from 18.3% in 1950-51 to 74.04% in 2010-11. Such an achievement is the result of a lot of 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 like, overcoming the problem of poverty and unemployment, social equality, equal income distribution, etc. Education contributes to the individual's wellbeing as well as the

overall development of the country. Education is not only an instrument of enhancing efficiency but is also an effective tool of 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 boys, but in rural schools, enrolment of boys is higher than 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 7, 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 location	Boys	Girls	Total
State government	92,286	86,910	9,30,468
Private aided	14,746	22,536	7,72,288
Private unaided	4,89,214	4,39,692	17,02,756

Source: Compiled from U-DISE Flash statistics

Table-4: Number of Teachers by Academic Qualification

Qualification	RegularTeachers	ContractualTeachers
Belowgraduate	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 board 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 classes 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 classes 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 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

There are 399 Government Junior Colleges, 4 Government Vocational Junior Colleges and 192 Government Model Schools are 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 in the State. 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 table.

Table-7: Junior colleges functioning Category of Managements

S.No	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

Conventional courses in Science, Arts and Commerce and Vocational Courses are offered. 29 Vocational courses are also offered in 777 Junior colleges in the field of Engineering & Technology, Agriculture, Home Science, Para-medical, Business & Commerce and Humanities. In addition to the 411 Exclusive Private and Government Vocational Junior Colleges, 366 Junior Colleges (both Government and private) are also offering Vocational courses. Enrolment of Students the enrolment of students both in conventional & Vocational Courses are given in Table.

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 monitors the administrative functions and academic quality in 126 Government Degree Colleges and 69 Aided Colleges with an enrolment of 91,966 and 58291 students respectively in the state. Development of Model Degree Colleges Government of India introduced the concept of Model Degree Colleges covering 374 districts in the country through XI Five Year Plan based on low Gross Enrolment Ratio in Higher Education. The assistance from MHRD, Govt. Of India under RUSA is 65% and 35% has to borne by Govt. 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

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., in them. 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

Exploring the education landscape in Telangana reveals a mix of challenges and opportunities:

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:** Programs aimed at improving infrastructure, teacher training, and financial aid can enhance educational quality and accessibility.
2. **Skill Development Programs:** 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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