

ISSN 2348 3490



JAMIA JOURNAL OF EDUCATION

Theme:
**Education, Nationhood and Global
Citizenship**

Peer Reviewed

REFEREED INTERNATIONAL BIANNUAL PUBLICATION

Volume 10 Number 01 & 02 October 2023 & March 2024

ISSN 2348 3490

JAMIA JOURNAL OF EDUCATION

A Peer Reviewed Refereed International Biannual Publication

Volume 10

Number 1 & 2

October 2023 & March 2024



**FACULTY OF EDUCATION
JAMIA MILLIA ISLAMIA
NEW DELHI – 110025
INDIA**

JAMIA JOURNAL OF EDUCATION

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Volume 10

Number 1 & 2

October 2023 & March 2024

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ISSN 2348-3490

Jamia Journal of Education

A Peer Reviewed Refereed International Biannual Publication

Vol. 10 No. 1 & 2 October 2023 and March 2024

Published by:

Faculty of Education
Jamia Millia Islamia
New Delhi, INDIA.

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Jamia Millia Islamia

jamiajournalofeducation2019@gmail.com

Composed, Editing & Corresponding by:

Mr. Mumtaz Ali & Ms. Shahin Parveen
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	Content	i-iii	
	V C Message	iv	
	Dean's Message	v	
	Editorial	vi	
Sr. No	Author Name	Page	Title
1.	Shabnam & Savita Kaushal	1	Integrating Democratic Values in School Practices
2.	Md Ashique Husain Jasim Ahmad & Aerum Khan	12	Awareness and Perception towards the uses of E-Resources among University Students
3.	Veera Gupta, Preeti Sharma & Banashree Mondal	27	Review of Centrally Sponsored Scheme (CSS) 'Inclusive Education' under Samagra Shiksha Abhiyan for students with Disability
4.	Savita Kaushal & Anam Fatima	41	The Impact of Schooling Years on Child Development: A Meta-Analysis with Insights from India's National Education Policy 2020
5.	Kiranpreet Kaur & Kirandeep Singh	49	Program Commitment and Career Maturity as Predictors of Psychological Well-Being: A Study on Undergraduate Students of Panjab University, Chandigarh
6.	Romila Bhatnagar & Patil Pooja	56	Preschool Teacher as a Nation Builder from Classrooms to Communities: Preschool Teachers as Pillars of Progress
7.	Priya Johry	65	Role of a Teacher in Nation Building
8.	Mohsin Ali Khan	74	Globalization of Education and Teacher Education within Vision of NEP 2020
9.	Radhika Chaturvedi	83	Diversity and Education- A Case of Inclusion and Resistance in a Government School in New Delhi
10.	Najma Chaudhary & Sushil Kumar	91	Empowering Teachers as Catalysts for National Development and Nation-Building: Current Perspectives and

			Strategies
11.	Janardan Paudel	97	Shared Cultural Integration between Nepal and India: Advancing Knowledge Society and Sustainable Development
12.	Tarique Anwar & Arshad Ikram Ahmad	109	History Education and Nation-Building: A Critical Assessment of NCERT Textbooks
13.	Rajni Bala	126	Transforming Teaching and Learning with Open Educational Resources
14.	Kotra Balayogi	134	Sustainable Technology in Education
15.	Manisha Prakash	143	How to Flip the Traditional Lecture for AI powered Digital Natives with Micro-Attention Spans?
16.	Arshina Muhammed	153	Assessing the Psychological Impact of Online Education and the Role of Mental Health Support in Enhancing Education Quality and Global Citizenship Post-COVID"
17.	Kamna Sagar	162	ICT-Based Transformation of Teaching and Learning
18.	Badri Sankar Das	172	Digital Education Model Revitalizes Our Society: Review
19.	Tasneem Ahmad & Rasheed Ahmad	178	National Education Policy 2020 and Inclusive Idea of Ancient India
20.	Jayanta Majumder & Parimal Sarkar	186	A critical analysis of the Current Social and Educational Status of the Namasudra Community of Raiganj Block under Uttar Dinajpur District, West Bengal
21.	Mehmood Ahmed & Mohd Tariq	199	Empowering Teachers for Effective Reform: Implementing NEP-2020
22.	Noureen	208	Ethical Issues in Elementary Schools of India for Adopting Coding as a Subject
23.	Mohd Aquib Shah & Saubia Neyazi	215	The Evolving Role of the Educator in the Digital Age: Embracing Technology as a Catalyst for Innovation
24.	Vaishali Garg & Amrita Katyayni	227	Critical analysis of NCERT English textbook "Beehive" class 9 th on Integration of Constitutional Values as Reflected in NEP 2020
25.	Anchal Aggarwal	237	Empowering Teachers as Innovators: Navigating Digital Transformation in Education under NEP 2020
26.	Pinki Gupta	246	New Trends in Educational Technology: Shaping the Future of Learning

27.	Debanjali Ghosh & Vijay Kumar Yadav	255	Metacognitive Awareness among Prospective Teachers of Ranchi District in Jharkhand
28.	Kavita Jeetendra Gaikwad	265	Constitutional Values and Ethics of the Indian Constitution: An Educational Imperative
29.	Parveen Shayma, Bavajan S, A.S. Jalandharachari & G. Bhuvanewara Lakshmi	274	P ₃ of Effective Teaching - learning: ICT Integration, Gagne's Events of Instruction, and Kirkpatrick's Model of Evaluation

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دفتر شیخ الجامعہ



Vice Chancellor's Message

The current volume of *Jamia Journal of Education* on the theme “*Education, Nationhood and Global Citizenship*” clearly brings to light the issues, central and core to the field of education. We are living in global times, where every citizen must be concerned with areas pertaining to environment, peace, ecology and global harmony. But all of these can be achieved through the role of education as a social responsibility. The mantra of “Sabka Saath, Sabka Vikas, Sabka Vishwas and Sabka Prayas” are the foundational values upon which rests the concept of nationhood. Putting all this together is a mammoth task and my best wishes to all members of the editorial board who have been instrumental in putting this together and weaved in a constructive narrative of education -in action, by linking the articles under the theme.

I understand that the *Jamia Journal of Education* is a prestigious publication of the Faculty of Education, Jamia Millia Islamia. The editorial board who not only meticulously selects articles for their contemporary essence but also for their academic rigour and relevance. The articles reflect a wide spectrum of issues, challenges, opportunities and concerns pertaining to the discipline of Education and its wider place in socio-political context of education.

I deeply appreciate and congratulate the Dean, Faculty of Education and all who have been a part in shaping the *Jamia Journal of Education*.

I hope the articles published herein will push forward the boundaries of knowledge and support researchers in advancing knowledge.

Best wishes,

(Prof. Mazhar Asif)
Vice-Chancellor

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Prof. Sara Begum

Dean



From the Desk of Editor-in-Chief

I am indeed, elated to share with you all, yet another issue of *Jamia Journal of Education*.

This issue of the journal focuses on the theme, "*Education, Nationhood and Global Citizenship*". *National Education Policy (NEP) -2020* highlights the crucial social role of education in facilitating the holistic development of personality. In today's global, yet polarized world, global citizenship is the answer or the way forward to build bridges for a meaningful, peaceful, collaborative world to usher in global harmony and inclusive growth. No Nation can rise above its human resources, and a country's growth is possible, only if it is based on sustainable principles. The UN Sustainable Development Goals (2015), focuses on critical thinking, cultural awareness, empathy and social responsibility to be the foundational basis of global citizenship.

The Journal is an attempt, through the scholarship of Faculty of Education, to bring to the academic community, locally and globally, through its array of articles - original research articles, case studies and review articles etc., and generate discussions on such themes to harness scholars critical thinking skills, build empathy, learn from best practices, develop reflection etc and promote a knowledge society.

I wish to congratulate all the authors who have contributed to this issue of *Jamia Journal of Education* and for their knowledge production for the wider scientific community. To all the reviewers of the articles, who have meticulously sifted through each article for their relevance to the theme "Education, Nationhood and Global Citizenship" to the language editing team, the publication team and all staff who have been a part in shaping this journal. My deep appreciation and congratulations for this commendable scholarly work. Their tireless dedication and commitment has made it possible to produce this volume well within the deadline.

With best wishes,


Prof. Sara Begum
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EDITORIAL

"Education, Nationhood, and Global Citizenship", the theme of this edition is interdisciplinary in nature, hence had to be looked at from multiple perspectives viz. Teacher as Nation Builder, Constitutional values and curriculum, Diversity and Inclusion, and Transforming Education through Technology. All the papers focus on the role of Education in shaping national identity and global citizenship which helps to reduce the tensions between national loyalty and global responsibility and prepare students for complex, interconnected world issues. Empowered global citizens will increase cultural understanding and exchange, enhance national pride and global responsibility, and will be better equipped to address global challenges. Nationhood means building national identity and pride that promotes values and cultural heritage and develops responsibility, balances national interests along with international understanding. Global citizenship recognizes shared humanity and global interconnectedness thereby developing empathy, tolerance, and cultural competence. It encourages active participation in global communities to understand global issues like climate change, inequality, and human rights.

New Education policy 2020 emphasises on making India's education system more globally competitive by internationalizing it. Globalization leads to Cosmopolitanism which recognises shared human experience, Multiculturalism, which values diversity and promotes inclusivity, civic education prepares citizens for active participation and understanding economic, cultural, and technological interconnectedness.

To attain global education system, it is imperative to Integrate global perspectives into curricula, encourage critical thinking and media literacy, foster empathy, cultural exchange programs, and develop global citizenship education frameworks. This is a challenging task as the curriculum must address nationalist compassion sentiments, manage cultural and linguistic diversity, leverage technology for global collaboration and prepare students for complex, rapidly changing world issues.

The current issue of the journal broadly titled as 'Education, Nationhood, and Global Citizenship', is interdisciplinary in nature and attempts to cover the extensive ground with multiple perspectives. This edition has twenty-eight Articles which differ in their concerns and yet are aligned with the theme.

First Paper by Shabnam & Savita Kaushal raise concerns regarding the Integration of Democratic Values in School Practices through their academic and non-academic activities. Md Ashique Husain· Jasim Ahmad & Aerum Khan have tried to put forward

the Awareness and Perception of University Students towards the uses of E-Resources.

Veera Gupta, Preeti Sharma & Banashree Mondal have reviewed the Centrally Sponsored Scheme (CSS) titled 'Inclusive Education' under Samagra Shiksha Abhiyan for students with disability, Savita Kaushal & Anam Fatima have studied the Impact of Schooling Years on Child Development: A Meta-Analysis with Insights from India's National Education Policy 2020. Kiranpreet Kaur & Kirandeep Singh have delved into Program Commitment and Career Maturity as Predictors of Psychological Well-Being: A Study on Undergraduate Students of Panjab University, Chandigarh. Romila Bhatnagar & Patil Pooja have discussed Preschool Teachers as Pillars of progress, as Nation Builders from Classrooms to Communities. Priya Johry tries to highlight the Role of a Teacher in Nation Building. Mohsin Ali Khan analyses the Globalization of Education and Teacher Education within Vision of NEP 2020.

Radhika Chaturvedi highlights the Diversity and Education- A Case of Inclusion and Resistance in a Government School in New Delhi. Najma Chaudhary & Sushil Kumar discuss the Current Perspectives and Strategies on Empowering Teachers as Catalysts for National Development and Nation-Building.

Janardan Paudel explores Cultural Integration between Nepal and India for Advancing Knowledge Society and Sustainable Development. Tarique Anwar & Arshad Ikram Ahmad have presented a Critical Assessment of NCERT Textbooks in the light of History Education and Nation-Building. Rajni Bala explores the use of Open Educational Resources to Transform Teaching and Learning. Kotra Balayogi discusses the sustainable Technology in Education. Manisha Prakash discusses how technology can help people with micro-attention spans in the traditional lecture for AI powered digital natives. Arshina Muhammed Assess the Psychological Impact of Online Education and the Role of Mental Health Support in Enhancing Education Quality and GlobalCitizenship Post-COVID. Kamna Sagar explores ICT-Based Transformation of Teaching and Learning. Badri Shankar Das reviews how Digital Education Model Revitalizes Our Society. Tasneem Ahmad & Rasheed Ahmad have tried to explore the Inclusive Idea of Ancient India in National Education Policy 2020. Jayanta Majumder & Parimal Sarkar has done a critical analysis of the Current Social and Educational Status of the Namasudra Community of Raiganj Block under Uttar Dinajpur District, West Bengal. Mehmood Ahmed & Mohd Tariq discuss how Implementing NEP-2020 can Empower Teachers for Effective Reform. Noureen explores Ethical Issues in Elementary Schools of India for Adopting Coding as a Subject. Mohd Aquib Shah & Saubia Neyazi discuss the role of technology for Evolving of the Educator in the Digital Age. Vaishali Garg & Amrita Katyayni Critically analyse NCERT English textbook "Beehive" class 9th on Integration of Constitutional Values as Reflected in NEP 2020. Anchal Aggarwal explores how Empowering Teachers as Innovators can help them Navigat3e

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We hope that this issue highlights the concerns pertaining to "Education, Nationhood, and Global Citizenship", which will initiate further deliberation.

Editors

Integrating Democratic Values in School Practices

Shabnam¹ & Savita Kausahl²

“Democracy means the belief that humanistic culture should prevail.”

John Dewey

Abstract

Schools serve as vital spaces for imparting democratic ideals to students, and teachers play a crucial role in shaping responsible and informed citizens. Teachers' dedication to fostering democratic virtues—such as tolerance, critical thinking, acceptance, global awareness, and a commitment to equality, justice, and freedom—is essential. To achieve this, teacher education programmes must prioritize the cultivation of these values in educators. This paper underscores the importance of democratic values, democratic teachers, democratic teaching, democratic classrooms, and democratic pedagogy. Through a descriptive study based on a review of secondary sources and qualitative methodology, this paper explores strategies for cultivating democratic teachers, implementing democratic teaching practices, and fostering democratic classrooms. Additionally, it critically examines the role of schools in inculcating democratic ideals in students and highlights the responsibility of teachers in integrating these values into both theoretical and practical aspects of education.

Keywords: Democracy, Democratic Values, Pedagogy, Education, Democratic Teacher, Democratic Teaching.

Introduction

Children cannot thrive and grow in isolation; thus, education that neglects to cultivate the qualities essential for meaningful and effective interaction with others remains incomplete (Mudaliar et al., 1952). This principle resonates with the National Curriculum Framework (2005), which emphasizes that democratic values—such as equality, justice, human rights, tolerance, diversity, responsible citizenship, and peaceful conflict resolution—are crucial in addressing national and global challenges. Building on this foundation, the National Education Policy (2020) and the National Curriculum

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Framework for School Education (2023) strongly advocate for integrating these democratic values into school curricula and practices.

To achieve these goals, teacher education programmes must actively promote these values, as the success of an educational system is deeply influenced by the values embraced by both teachers and students. Teachers' effectiveness is directly linked to the democratic principles and convictions they internalize (Shechtman, 2002). As the role of teachers has evolved, so must teacher education, which now serves as a crucial gatekeeper to the profession, and significantly shaping classroom practices (Coladarci, 1992; Swars, 2005). To effectively meet the educational needs of all students in diverse classrooms—teachers must be equipped to make informed, and professional decisions (Varvus et al., 1999). This underscores the importance of teacher preparation in fostering academic competence and a commitment to the democratic values essential for a harmonious and inclusive society.

Objectives of the Study

- To investigate the key strategies for incorporating democratic values into school practices.
- To analyze the behaviours, gestures, and interactions that characterize a teacher as democratic.
- To identify and analyze the key characteristics of democratic teaching.

Methodology of the Study

The study is based primarily on secondary data sources, including books, academic journals, research articles, and policy documents. The research also draws upon official reports and guidelines from educational institutions and government bodies that emphasize democratic education, such as the National Curriculum Framework (NCF) and the National Education Policy (NEP). The existing literature and data were analyzed to explore the various strategies for cultivating democratic teachers, implementing democratic teaching practices, and fostering democratic classrooms. The study employs a qualitative methodology, focusing on a descriptive analysis of the current knowledge and practices related to democratic education. The findings were examined in light of the key objectives.

Democratic Values

Values are fundamental guidelines that reflect an individual's understanding of appropriate conduct and are essential for adapting and navigating reality effectively (Schwartz, 1994, 1996). Democracy is often considered a "way of life" that emphasizes the importance of coexistence (Dewey, 2016). The ethical foundation of democracy rests on three core values—equality, freedom, and justice (Greene, 1988; Kelly, 1994). Democratic values encompass cooperation, autonomy, a sense of community, and shared decision-making (Winfield & Manning, 1992). Other essential values include

respect for life, honesty, self-esteem, tolerance, acceptance of diversity, and responsibility (Kincal& Isik, 2003).

Integrating Democratic Values in School Practices

Integrating democratic values into school practices involves embedding principles such as equality, justice, freedom, participation, and respect throughout the educational experience. In *Democracy and Education* (1916), John Dewey posits that education is intrinsically linked to the functioning of a democratic society, emphasizing the role of schools in promoting critical thinking and participatory democracy. Similarly, Howe and Covell (2010) underscore the importance of embedding democratic values within the formal, explicit, and hidden curricula and teaching methodologies, codes of conduct, and classroom interactions to cultivate a democratic culture. Beyond merely understanding democratic processes, Pal (2005) argues that students must internalize these principles as fundamental to their daily lives. In the Indian context, the National Curriculum Framework (NCF) 2005, the National Education Policy (NEP) 2020, and the NCF 2023 highlight the centrality of democratic values in education. These frameworks emphasize the need for education to foster the holistic development of students, equipping them to navigate the complexities of life in a democracy.

Objective 1: To Investigate the Key Strategies for Incorporating Democratic Values into School Practices.

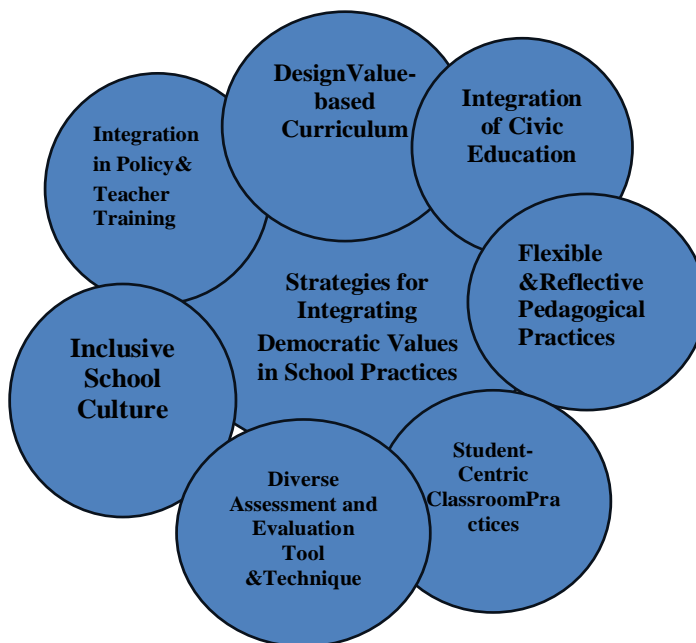


Figure-1 Key Strategies for Incorporating Democratic Values into School Practices.

(Sources: Created by Author)

DesignValue-based Curriculum

It is crucial to create and execute a curriculum that embraces diversity, integrates democratic ideas, and includes contributions from diverse historical, social, and cultural backgrounds (Pokhrel, 2023). Furthermore, it is vital to incorporate assignments and exercises that foster critical thinking, motivating learners to inquire, scrutinize, and interact with intricate subjects (Graça, 2022). This approach ensures that the experiences and opinions of the students are fairly represented.

Civic Education

Incorporating civic education into the curriculum is essential for educating kids about their, rights, responsibilities and political awareness. Rahima (2024) also highlighted in her research about the significance of civic education in fostering democratic principles in students.

Innovative Teaching Methods and Pedagogical Practices

To effectively integrate democratic values into educational practices, Instructional Strategies that prioritize student autonomy and active engagement must be employed. Students can take an active part in their education by using such strategies including project-based learning, peer learning, cooperative group activities, and self-guided study programs. Facilitating talks in the classroom that promote the exchange of different viewpoints, civil discourse, and careful thinking is also crucial (Hanafiah, 2024).

Reflective Practices

Encouraging students to critically think about problems they face in their everyday lives, their experiences, and the democratic values they learn about in the classroom is essential for promoting democratic practices. This can be effectively facilitated through methods such as structured discussions, journal writing, project-based activities, healthy discussions and debates (Huber-Warring & Warring, 2006).

Student-Centric Classroom Practices

Engaging students in the classroom process and activities greatly increases their sense of responsibility and accountability. Furthermore, it is crucial to establish equitable and uniform disciplinary procedures to ensure that every student is accorded dignity and that their rights are upheld. Additionally, Sarker et al. (2024) stressed that fostering democratic principles in students requires their active involvement in classroom administration.

Diverse Assessment and Evaluation Methods

Transparent assessment criteria, coupled with student involvement in evaluation processes, are essential for democratic practices. In order to integrate democratic practices, it is essential to use diverse assessment techniques that accommodate different learning styles and abilities which enable all students to effectively showcase their learning (Rahima, 2024).

Inclusive School Culture

By addressing and reducing bias, discrimination, intolerance, and hatred, and promoting an atmosphere where diversity is welcomed and every student is valued, appreciated and respected schools may build an inclusive culture. It is also crucial to give students a voice, involve them in school governance, and allow them to participate in decision-making processes through student councils and other mechanisms.

Teacher Training

Schools should provide opportunities for teachers to pursue professional development that centres on democratic teaching methods, inclusive teaching approaches, and techniques that boost student involvement. To integrate democratic values into the classroom teacher should be urged to evaluate their educational strategies and look for healthy criticism and constructive feedback.

Community Involvement

For the integration of democratic values in the school practices active involvement of community members is vital. Schools should promote collaboration between home and school. Additionally, incorporating service-learning projects that connect classroom instruction with real-world issues can facilitate meaningful application of knowledge and encourage students to make a difference in their communities.

Policy Integration

Policies that support democratic principles, such as non-discriminatory practices, fair resource access, and diverse student needs, should be developed and implemented in the schools and ensure that different perspectives and view points are taken into account and incorporated.

Objective 2: To Analyze the Behaviours, Gestures, and Interactions that

Characterize a Teacher as a Democratic

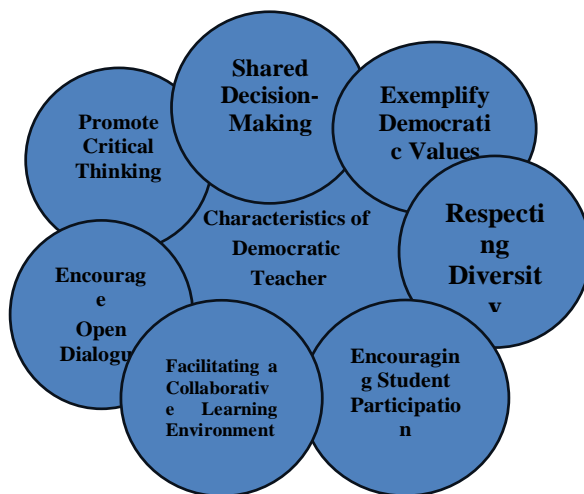


Figure 2: Key Characteristics of Democratic Teacher into School Practices.

Sources: Created by Author

Democratic Teacher

A democratic teacher engages in behaviours and practices that reflect democratic values such as fairness, respect, equity, and inclusivity. This teacher actively involves students in decision-making processes related to classroom rules, learning objectives, and assessment methods, fostering a sense of ownership and responsibility in students and encouraging them to become active participants in their education (Apple & Beane, 2007; Dewey, 1916).

For instance, a democratic teacher might start a class by discussing and agreeing upon the ground rules with students, ensuring everyone's voice is heard. They might use open-ended questions to prompt discussion and critical thinking, allowing students to explore different perspectives (Parker, 2006). Furthermore, a democratic teacher models respectful interactions listens actively to students' concerns, and adapts their teaching strategies to meet diverse learning needs (Freire, 1970).

For instance: A democratic teacher remains fair by consistently enforcing rules and considering students' explanations for misbehaviour before making decisions (Selvi, 2006). In the context of Indian education, the National Curriculum Framework (NCF) 2005, the National Education Policy (NEP) 2020, and the NCF 2023 reinforce these democratic values as central to the educational experience.

Key Characteristics of Democratic Teacher into School Practices.

Shared Decision-Making

A democratic teacher involves students in decision-making about the classroom rules and learning goals, fosters a sense of responsibility for their educational environment, engages students in discussions and allows them to vote on activities that enhance their sense of collective responsibility (Nomi, 2022).

Exemplify Democratic Values

A democratic teacher is a role model and illustrates the practical application of democratic values by ensuring equal participation, fairness and respect in interactions, and addressing conflicts through mediation teacher fosters an equitable learning environment (Febriani et al., 2024).

Respecting Diversity

A democratic teacher values the diverse backgrounds and perspectives of all students by demonstrating sensitivity to cultural differences and adapting teaching strategies accordingly, teacher creates an inclusive environment (Magwa&Mohangi, 2022). This approach not only enhances learning but also promotes social cohesion by ensuring that every student's identity is recognized and valued.

Encouraging Student Participation

A democratic teacher actively solicits student's feedback and fosters an environment where students feel empowered to express their ideas and preferences by employing

open-ended questions and inviting student-led discussions. Teacher creates meaningful opportunities for engagement, and treat students as co-creators of knowledge rather than passive recipients (Morrison, 2024). This partnership reinforces a sense of a collaborative learning atmosphere.

Facilitating Collaborative Learning

A democratic teacher promotes collaboration by encouraging teamwork, group projects, and discussions and utilizes inclusive body language such as maintaining eye contact and moving among groups which helps reinforce students' participation (Fredriksen et al., 2023). This approach creates mutual respect and comfort in sharing ideas, allowing students to develop essential social and academic skills.

Open Dialogue and Critical Thinking

A democratic teacher encourages critical questioning, and reflective practices, creates a space for open dialogue, and pushes students to engage deeply with complex issues. A democratic teacher listens to students actively and provides a non-judgmental environment that facilitates their intellectual exploration and empowers them to develop analytical skills (Che, 2023).

Democratic Teaching

In linking democratic teaching with the nature of knowledge, relationships with learners, and pedagogy, Paulo Freire’s contributions are the key. According to Freire, knowledge is not a static commodity to be deposited in students but a dynamic process of co-creation through dialogue and critical reflection (Freire, 1970). This contrasts with the traditional “banking model” of education, where students passively receive information from the teacher. Democratic teaching transcends traditional knowledge transmission by fostering a participatory and inclusive learning environment that actively engages students with democratic principles. The NCF 2005 emphasizes a shift from rote learning to experiential learning, encouraging critical thinking and meaningful discussions, in line with Dewey’s (1916) advocacy for participatory democracy. Building on this, the NEP (2020) and NCF (2023) highlighted the importance of critical thinking, creativity, and ethical reasoning. These policies promote democratic practices in schools.

Objective 3: To Identify and Analyze the Key Characteristics of Democratic

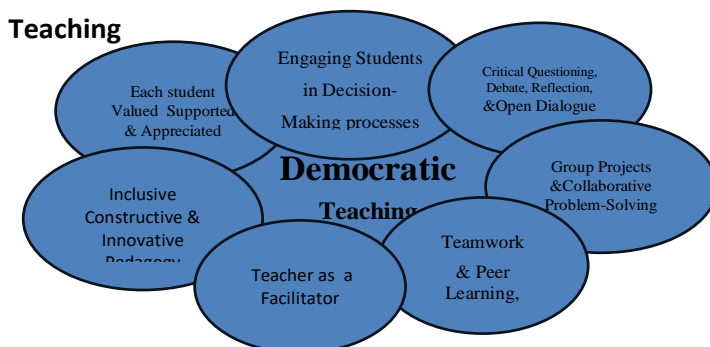


Figure 3: Key Characteristics of Democratic Teaching
 Source: Created by Author

Democratic teaching involves engaging students in decision-making processes concerning classroom rules, learning objectives, and assessment methods. Teachers facilitate teamwork and peer learning through group projects and collaborative problem-solving, thereby helping students develop critical social skills and benefit from diverse perspectives. This approach also values and respects the varied backgrounds, perspectives, and abilities of all students, creating an inclusive environment where each student feels valued and supported. Moreover, democratic teaching encourages critical questioning, debate, and reflection, promoting deeper understanding and independent thinking by enabling students to explore complex issues and engage in open dialogue. Finally, by exemplifying fairness, justice, and respect in classroom interactions, teachers model democratic values, encouraging students to apply these principles in their social contexts.

In terms of knowledge, democratic teaching views it as something co-constructed with students. For example, instead of a teacher solely delivering facts, students contribute their perspectives and experiences, which enrich the learning process. A democratic teacher, in this context, facilitates knowledge production rather than controlling it (Freire, 1970).

Implications

Teacher education programs must prioritize democratic values to effectively prepare teachers for embedding these principles in their classrooms. This necessitates a shift toward collaborative, student-centred practices that foster active participation and critical thinking, emphasizing mutual respect and equity in teacher-student relationships. Educators should develop skills in facilitating dialogue and creating inclusive learning experiences that connect with real-world issues. Furthermore, schools must encourage student engagement in decision-making processes, promoting a sense of responsibility and readiness for democratic participation. It is essential to create inclusive environments that provide marginalized groups opportunities for meaningful engagement and to re-evaluate educational policies to ensure the explicit incorporation of democratic values in teaching practices and institutional governance. By integrating these principles, we can cultivate a generation of socially and politically engaged citizens committed to strengthening democratic institutions.

Conclusion

After the above long deliberation on the Integration of Democratic Values in school practices, we can conclude that the commitment to these values not only enhances the academic development of students but also prepares them to be responsible, engaged citizens who contribute positively to society. As schools continue to evolve, maintaining a focus on democratic practices will ensure that educational institutions remain vibrant, equitable spaces that nurture the principles of democracy and prepare students for active and informed participation in their communities.

As discussed by Westheimer and Kahne (2004), the nature of the education students receive profoundly impacts the type of citizens they become. Therefore, educators must critically examine their behaviours, decisions, and actions to ensure that schools function as genuine democratic spaces that effectively prepare students for active and participatory citizenship.

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Awareness and Perception towards the uses of E-Resources among University Students

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& Aerum Khan³

Abstract

This study examines the level of awareness and perception towards the uses of e-resources among university students. The purpose of the study was to know the advantages and challenges while accessing e-resources, as perceived by respondents and another purpose was to find out the level of satisfaction using E-Resources. Descriptive survey method was applied and random sampling technique was adopted. A self prepared mixed questionnaire (Open & Close ended) was used to collect data, which had two sections, Section-A dealt with demographic information while section-B contained 15 items related to awareness, perception, advantages, challenges and satisfaction. Total 1016 responses were received from the targeted population. The result of the study revealed that 98.4% among the respondents were generally aware about e-resources. They gain information through different sources. A large number of the students are using both (Printed & e-resources) and a huge number of respondents are using both types (Open & Subscribed) e-resources. 81.5% respondents were satisfied with using e-resources.

Key words: Academic writing, Awareness, E-resources, Perception, University students

Introduction

“Students should be encouraged to access and engage with relevant and meaningful digital material that complements and supplements the content in their curriculum, syllabus, textbooks, and other materials they are typically unable to access in their physical environment (NCFSE-2023, PP-196)”. Due to digitization of education, the nature of the education system has changed. The process of teaching and learning are going to reform nowadays. Now the learners want to learn at their convenience, they want independence and autonomy in the learning process. Today information and

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communication technology has made everything so easy, it's a need of the 21st century. The nature of libraries are also going to change from libraries to e-libraries or digital libraries and virtual libraries and the books, journals, magazines and all other resources are also being changed into electronic forms. The digitization of information in print media has carried a new perception overall in all fields of human life and henceforth the formation and use of e-resources are generally recognized e-resources (Chanda, 2021). Now the e resources have become very much useful for every type of user (Pratap, & Ranga, 2021). There are many types of e-resources. The landscape of higher education has witnessed a significant transformation in recent years with the emergence of e-resources. "ICT has made it possible for content to be created and presented in various forms. Videos, audio clippings, graphic simulations, animated presentations all these forms of content can now be easily created by a motivated and capable Teacher with the use of simple tools in ICT. These different forms allow for a variety in the content used in the teaching-learning process (NCFSE-2023, PP-197)". The digital revolution and the democratization of knowledge have given rise to a new era of learning, offering students and learners worldwide the opportunity to access high-quality content and material in a flexible and affordable manner. The increasing use of e-resources is witnessing a tremendous change in education. This new way of learning has started especially with the corona pandemic. E resources are becoming popular nowadays, and a large number of institutions are working on creating e-resources. E-resources have increased the global disseminations of information (Abinew & Vuda, 2013). Johnson et al. (2021) has defined electronic forms of information which can be accessed via the internet and computer networks. Higher education is being reformed with respect to e-resources. This is not only due to the convenience and easy communication with the learners, but also due to the fact that e-resources enable learners to prepare for lessons in advance and motivates them to revise the material learned according to their pace and convenience. NCF-2005 and NCFSE-2023 claim that learning should not be limited to what is presented in textbooks and classrooms. They should be holistic and comprehensive.

Review of related literature

Across different institutions and regions, students are generally aware of and they are using e-resources for many purposes particularly academic purposes. A number of studies have been conducted on perception, awareness and uses of e-resources from diverse populations over a period of time. A systematic review of a few of these studies is made hereinafter:

Adenariwo (2022) has worked on the titled "Awareness and Usage of E-Resources among Undergraduate in Fountain University, Osun State, Nigeria". The nature of the study was that a descriptive survey method and random sampling technique was used to select 1000 undergraduate students. The result of the study showed that undergraduate students of Fountain University are quite aware and highly use e-resources. The findings also showed that undergraduate students in Fountain University are skilled in the use of e-resources.

Partap & Ranga, (2021) has studied on the titled “Awareness and Use of e-Resources at Chandigarh College of Architecture, Chandigarh, India: A Study”. The nature of the study was descriptive survey method and purposive sampling technique was used. The study found that nearly 90% respondents were aware about the uses of e-resources and they are using them in their academic work. Approximately 31% among the respondents preferred using online e-resources and 93% among the respondents were using e-resources to collect information regarding Paper publication and 95% among the respondents were satisfied with the use of e-resources in their academic work.

Chanda (2021) has studied the title “Awareness of E-resources among the College Students in Assam: A Study”. The objective of the study was to explore the level of awareness with respect to the uses of e resources and also to study the perception and how frequently used e-resources in their academic work. The findings of the study revealed that 52.81% among the respondents were highly aware of the e-resources and E-books are the highly used e-resources. Findings also found that mobile phones were the highly and frequently used device for accessing e-resources as responded by 87.29% respondents. 53.49% respondents responded that they are highly satisfied by using e-resources.

Singh, (2019) has worked on the title “Awareness and Use of E-Resources among the Users of Library of Punjabi University Patiala: A Case Study”. The purpose of the study was to assess the awareness and uses of e resources by the students and also identify the challenges & opportunities of e resources. Findings of the study showed that the majority of the students were aware about the e-resources and their uses. The usage of e-resources was frequent among Research scholars, Undergraduate and postgraduate students. Study suggested that there should be a personal database for libraries, internet connectivity should be improved, and adequate availability of e-resources should be available.

Baruah & Devi, (2018) has conducted a study titled “Users’ Perception of Electronic Resources of Assam Agricultural University (A.A.U), Jorhat: A Survey”. Study has emphasis on the use of e-resources among students of Assam Agriculture University. The study showed that 16.35% among respondents were not aware about the e-resources, 29.8% of the respondents were frequently using e-resources 2 to 3 times in a week. 77.8% among the respondents were accessing a-resource from the library and 31.73% of the respondents were facing internet connection in accessing e-resources. 54.8% respondents responded as the e-resources are very useful to them for their different types of purposes.

Ruzegea & Msonde, (2021) has conducted a study titled “University Students’ E-Resource Usage: Predictors, Problems and Practical Implications”. The study showed that the undergraduate students demonstrated higher usage levels of e-resources than postgraduates and the level of education, information literacy, skill and competencies, and individual experiences were factors that contributed to effective e-resources.

Kalsoom et al., (2021) has studied titled “An exploration of Student’s Perceptions regarding Use of e resources and its impact on their academic performance”. The objective of the study was to assess the students' perceptions with regard to e resources and its impact on academic achievement. The nature of the study was a descriptive survey in nature and Cluster sampling technique was used to select the sample. The result of the study revealed that the large numbers of the respondents used e-resources frequently. The findings also showed that students facing some challenges while accessing e-resources like, insufficient skill, poor internet connectivity and difficulty in identifying relevant e-resources.

Overall glance through of the studies reveal that students are frequently using e-resources for the fulfillment of their objectives. Findings also reflect that there are some challenges for effective implementation and application of e-resources: issues such as internet connectivity, relevant resource identification, and varying levels of awareness still pose challenges. The studies also underscore the importance of information literacy and skill development to enhance the effective use of e-resources. Among different types of e-resources e-books have proved to be among the highly usable e-resources.

Objectives of the study:

1. To find out the level of awareness about e-resources among university students.
2. To find out the perception regarding uses of e-resources among university students.
3. To know the ways in which the e-resources are used by the university students.
4. To explore the advantages of using e-resources by the university students.
5. To explore the challenges of using e-resources by the university students.
6. To find out the level of satisfaction with using the e-resources.

Research Methodology:

Design of the study: The descriptive survey method was used in this study.

Population: The population of the study constituted the students of undergraduate, postgraduate and Research scholars from 6 states (Refer Table 1).

Sample: The sample of the study constituted the students of undergraduate, postgraduate and Research scholars and response received 384 from undergraduate, 319 from postgraduate, 257 from a research scholar and 56 from diploma students. Total 1016 responses were received.

Sampling technique: Simple random sampling technique was used in this study.

Tools: A self-prepared mixed questionnaire was used for the data collection. The tool consisted of two sections, section A, which contain demographic information and section-B contain 15 items related to awareness, perception, and uses of e-resources. In which item Numbers: 1, 3, 4, 5, 8, 9, 11, 12 & 14 were close ended and item Numbers: 2, 6, 7, 10, 13 were multiple options allowed and item No: 15 was an open ended.

Method of data collection: The data was collected through Google form from above samples the form link was shared through Email and WhatsApp.

Result and discussion:

Section-A: Representation of demographic information is made through the tables 1, 2, 3 and 4. Table-1 Shows state wise number of responses received from the participants. Whereas Table- 2 shows programme wise responses received from the participants. The Table-3 shows gender wise responses received and Table-4 shows types of institutes from where responses were received from the participants.

Table 1: State wise responses

Sl.No.	State	Responses received
1	Bihar	217
2	Delhi	300
3	Jharkhand	57
4	Odisha	69
5	Uttar Pradesh	256
6	West Bengal	117
Total responses received		1016

Table 2: Programme wise responses

Sl. No.	Programmes	No. of responses received
1	Research scholars	257
2	PG students	319
3	UG students	384
4	Diploma students	56
Total responses received		1016

Table 3: Gender wise response

Sl. No	Gender	No. of responses received
1	Male	499
2	Female	517
Total responses received		1016

Table 4: Types of institutes

Sl. No.	Types of institute	No. of responses received
1	Central universities	336
2	Deemed universities	29
3	State universities	577
4	Private universities	74
Total responses received		1016

Section-B: Item wise result and discussion.

Item 1: How much you are aware about e-resources

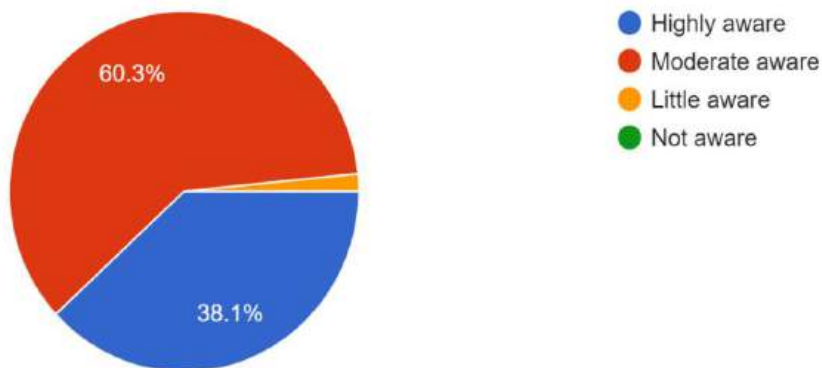


Fig:1 Percentage of responses with regard to the awareness about e-resources

In response to the item 1 regarding the awareness of e-resources, 38.1% respondents were highly aware about the e-resources whereas 60.3% of the respondents were moderately aware about e-resources and only 1.6% of the respondents were little aware about e-resources (Figure 1). One thing that is very interesting to know is that no one among the respondents was not aware about the e-resources. This may be because of the popularization and integration of e-resources into education.

Item 2: From which sources you are gaining information about e resources (Multiple answer were allowed)

Table 5: Sources of information

Sl. No.	Sources of information	Percentage of respondents
1	Through self search	76.6%
2	Through workshops, seminars and conferences	51.6%
3	Through institute website	25%
4	Through notice board of the institute	9.4%
5	Through my friends	40.6%
6	Through librarian	28.1%
7	Through social media	50%
8	Through my teachers	54.7%

Table 5 shows the percentage of sources from which respondents gained information about the e-resources.

In response to item 2 related to sources of information from where he/she gained information, 76.6% among the respondents gained information through self search whereas 51.6% of the respondents gained information through workshops, seminars and conferences. 54.7% among the respondents gained information through their teachers followed by 40.6% of the respondents gained information through their friends or peers. 50% respondents gained information through different types of social media which are playing an important role in dissemination of information nowadays. 28.1% among the respondents gained information through librarians whereas 25% among the respondents were gaining information through their institutional website. Only 9.4% of the respondents gained information from the notice board. It means students are gaining information from different sources according to the appropriateness of context. Self searching and teachers happen to be the main sources of information. Whereas the notice board of the institute happens to be the least used source for gaining information, this may be due to the popularity and ease of use of the e-Resources, which is making the conventional sources of information like notice boards less popular day by day.

Item 3: What types of resources are you using?

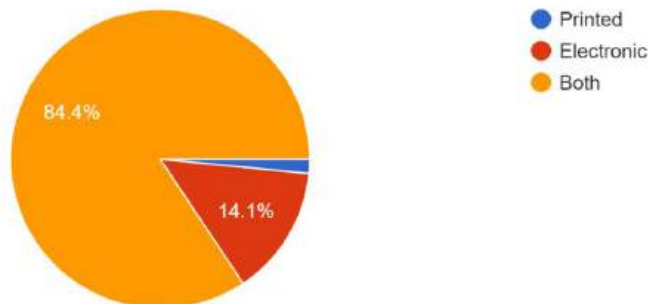


Fig 2: Responses regarding the types of resources used by the respondents

In response to the Item 3 related to types of resources used by the respondents, 84.4% respondents informed that they were using both types (Printed & Electronic) of resources and 14.1% among the respondents informed of using only electronic resources in contrast to only 1.5% respondents who were using printed resources. This may be due to the ample availability of smartphone /tab/ laptop and the comfortability of using e-resources by the present generation.

Item 4: Which types of e-resources are you using?

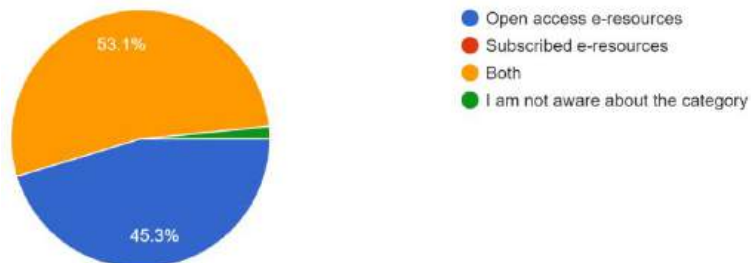


Fig 3: Responses regarding the types of e resources are used by the respondents

In response to item 4 regarding the types of e resources used by the students, 45.3% of the respondents were informed of using open access e resources. 53.1% among the respondents informed of using both (Open access & Subscribed e resources) and 1.6% of the respondents were using e-resources and they were not aware about the category of e-resources and no one among the students were using only subscribed e-resources. This may be due to the fact that free of cost, open access and qualitative materials are available now on the internet.

Item 5: from which place you are accessing e-resources?

Table 6: Place of accessing e-resources

Sl. No	Place of accessing e-resources	Percentage of respondent
1.	Home	68.8%
2.	Library of the department / College	18.8%
3.	Department/ College	9.4%
4.	Cyber cafe	1.6%
5.	Others	1.4%
Total percentage of responses		100%

Table 6 shows the responses about places where the students are accessing e resources. The analysis of the data reflects that a huge number of respondents were accessing e-resources from home i.e. 68.8% followed by 18.8% from libraries of the department/college. Only 9.4% among the respondents were accessing e-resources from department/college followed by 1.6% from cyber cafes and 1.4% respondents accessing e-resources from other places. The data reveals that the students are accessing e-resources from home maybe they can pay more attention and concentrate on the content matter at home due to the uninterrupted internet availability, which is difficult anywhere else.

Item 6: Which of the following e-resources are you using? (Multiple answers were allowed)

Table 7: Types of e-resources

Sl. No	Types of e-resources	Percentage of respondents
1	Dissertations	59.4%
2	Theses	40.6%
3	E-news papers	54.7%
4	E-Magazines	35.9%
5	E-Journals	62.5%
6	E-Books	70.3%

Table 7 shows the responses about the types of e-resources used by the respondents. The analysis of data reveals that 59.4% among the respondents were using dissertation followed by 40.6% theses. 54.7% of the respondents using E-news papers followed by 35.9% of the respondents using E-Magazines. 70.3% among the respondents were using E-books which is very considerable followed by E-Journals which 62.5% of the respondents were using. E-books are highly usable e-resources because of their low cost and sometimes free availability, quality and standard material, on demand availability and diverse content.

Item 7: Which of the following devices are you using for accessing e-resources? (Multiple option were allowed)

Table 8: Types of devices used

Sl. No	Types of devices used	Percentage of respondents
1	Smartphone	92.2%
2	PC/Desktop	21.9%
3	Laptop	59.4%
4	Tablet	18.8%

Table 8 shows the types of devices used by respondents. It was observed that 92.2% among the respondents were using smartphones to access e-resources followed by 59.4% respondents accessing e-resources from laptops. Only 21.9% of the respondents were using PC/Desktop followed by 18.8% from tablets. Smartphones are highly used devices for accessing e-resources, it may be because of the availability of smartphones in every hand and its lesser cost with respect to PC/Desktop, laptop, Tablet. And the fact that smartphones are very handy and can be used anywhere any time.

Item 8: How often do you use available library e-resources?

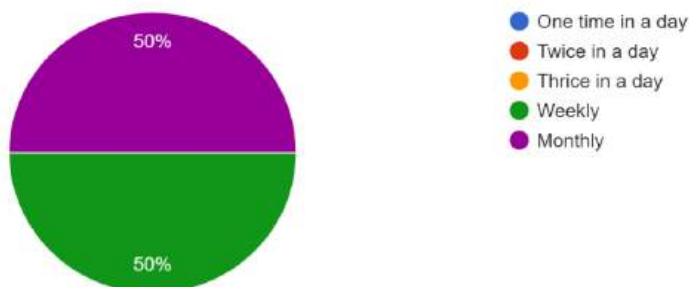


Fig 4: Responses regarding the use of available library e-resources

In response to the use of available library e-resources it was observed that 50% of the respondents used available library e-resources weekly and 50% among the respondents

were using available library e-resources monthly. The reason behind this may be that library e-resources may not be accessible on demand and needs. Today's learners want the study material, content according to their convenience may be library e-resources may not provide these facilities that why students are using library e-resources weekly and monthly.

Item-9 : What's your frequency of using e-resources?

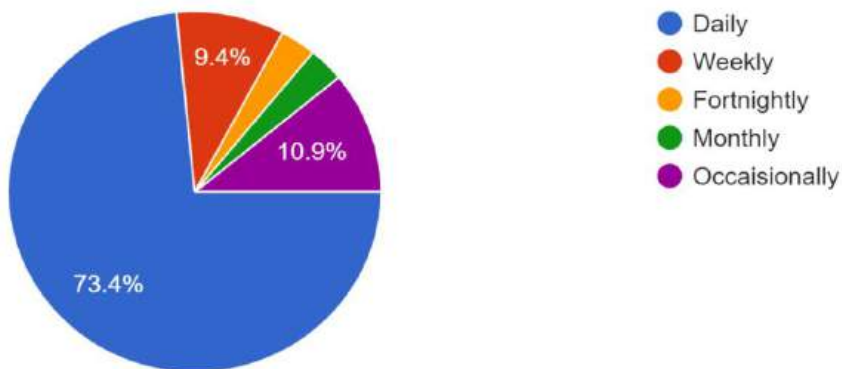


Fig 5: Responses on the frequency of using e-resources

In response to the item related to frequency of using e-resources it was observed that the 73.4% among the respondents were using e-resources on a daily basis followed by 10.9% who were using e-resources occasionally and 9.4% of the respondents were using e-resources weekly. Only 3.1 % used e-resources monthly and fortnightly respectively (Figure 5). It indicates the popularity of e-resources among diploma, undergraduate, postgraduate and research scholars.

Item 10: According to you, what are the advantages of using e-resources? (Multiple options were allowed)

Table 9: Advantages of using e-resources

Sl. No	Responses related to the advantages of eResources	Percentage of respondents
1	It can be easily download	65.6%
2	It can be shared to many	56.3%
3	It is cost effective	60.9%
4	Easy to access	76.6%
5	Diverse content can be found at one place	70.3%
6	It saves lots of time	66.8%

7	Many e-resources can be freely accessed	68.8%
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Table 9 shows the responses regarding the advantages of using e-resources by the respondents, 65.6% of them said that e-resources can be easily downloaded, 56.3% among the respondents said that they can be shared to many and 60.9% of the respondents said that the e-resources were cost effective. 76.6% of the respondents said e-resources were easy to access. 70.3% of respondents said that diverse content can be found at one place, 66.8% among the respondents said that they save lots of time and 68.8% respondents responded that many e-resources can be freely accessed. Probably the reason behind these types of responses roots to the popularization of e-resources.

Item 11: What is the purpose for which you use e-resources?



Fig 6: Purpose of using e-resources

In response to the item regarding the purpose of using e-resources 100% respondents were using e resources for the purpose of doing their research work (Figure 6). This may be because there are too many e resources available on the website and we can access them on demand whenever and wherever required.

Item 12: How useful electronic resources are in accomplishing your task?

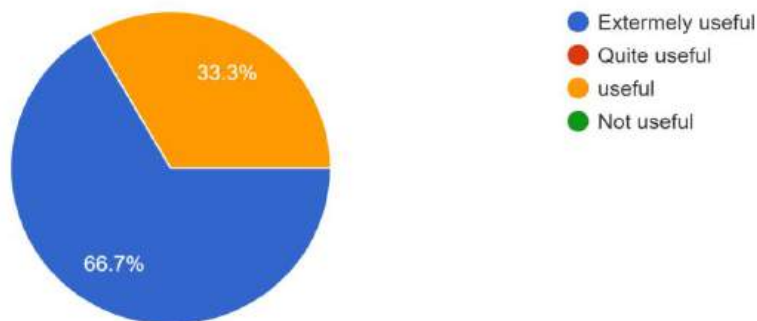


Fig 7: Responses with regard to usefulness of e resources

In response to the item regarding usefulness of Resources 66.7% respondents responded that they were extremely useful followed by 33.3% among the respondents who responded as useful. This may be because of the characteristics of e-resources. Anyone, from anywhere and anytime with internet connectivity can access e-resources according to their need and convenient basis.

Item 13: What's problems are you facing whenever you are accessing e-resources? (Multiple option were allowed)

Table 10: Problems faced by the respondents during accessing e-resources

Sl. No	Problems faced by the respondents during accessing e-resources	Percentage of respondents
1	Bad internet connectivity / Network issue	50.8%
2	Irregular power supply	4.6%
3	Lack of knowledge about reliable and valid sources	32.3%
4	Pop-Up notifications	23.1%
5	Overload of information on the internet	46.2%
6	Lack of computer knowledge to handle	7.7%
7	Unavailability of gadget	6.2%
8	Problems in searching	2.8%

Table 10 Show the responses received on item No-13. In response to the item related to problems faced by the respondents during accessing e-resources 50.8% of the respondents were facing network issues followed by 46.2 % among the respondents were facing overloaded information on the website they were not able to identify which one was good and which one bad. 32.3% of respondents had a lack of knowledge, understanding and management skill about reliable and valid sources. 23.1% of the respondents were facing challenges with Pop-Up notification during study from e-resources. 7.7% of respondents had lack of computer skills to handle them. 6.2% respondents reported unavailability of gadgets followed by 2.8% among the respondents who faced challenges in searching information over the internet. This may be because of major issues of the time as we are converting 4G to 5G but approximately everywhere we are facing bad internet connection and varieties of content are available on the internet, students are not able to identify what material has good quality and what hasn't.

Item 14: How satisfied are you with using e-resources?

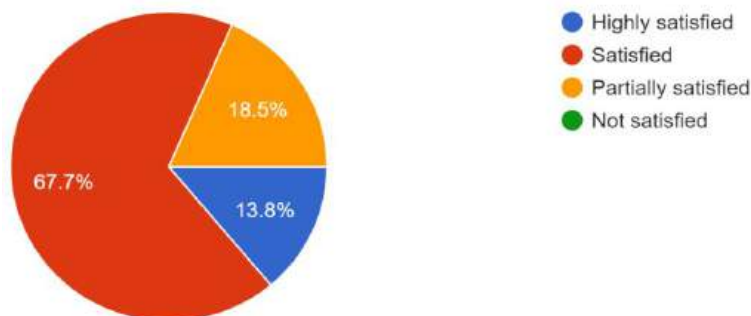


Fig 8: Satisfaction regarding the use of e-Resources

In response to the item regarding satisfaction while using e-Resources, 13.8% students were highly satisfied with using e-resources followed by 67.7% respondents were satisfied with using e-resources and 18.5% among respondents were partially satisfied but one thing is very considerable that no one is dissatisfied with using e-resources. This may be because of some average level experience over the internet and sometimes not getting those types of material we are searching for.

Item 15: Any other opinion / suggestion about e-resources, not covered above.

In response to the item related to any other opinion or suggestion related to e-Resources it was reflected by many of the respondents that e-Resources are the best way to access information, but the only concern is the right platforms should be known to fetch data. There should be awareness programmes about e-resources among teachers as well as students. E-resources have revolutionized the way we access and utilize information, making it more convenient and accessible. E-resources should be easily available for students. It is observed that many of the sites ask for subscriptions. Institutions and universities can release a list of authentic and safe sites for students to access e- learning resources. E-resources are helpful but it's a little bit difficult to decide which one is wrong and which one is right. They offer comprehensive and a wide range of benefits, including remote access, flexibility, and cost-effectiveness. The advertisements that come during the study disturb the students and also cause problems in concentration, these need to be checked.

Conclusion: *The awareness and perception of e-resources among university students are crucial determinants of their academic success and happens to be the need of the hour. The present study reveals that there is a high level of awareness of e-resources among university students, the depth of understanding and the frequency of usage were significantly high among the students. Universities should make substantial investments in providing access to a wide range of e-resources. Addressing technical barriers and ensuring user-friendly interfaces are essential for fostering a positive perception and encouraging consistent use. By creating a supportive environment that encourages the*

effective use of e-resources, universities can empower students to harness these tools for their academic advancement enabling them to excel in their future endeavors.. The challenges and concerns are to be addressed to facilitate better learning environments of the educational institutions across the levels throughout the country.

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Review of Centrally Sponsored Scheme (CSS) titled ‘Inclusive Education’ under Samagra Shiksha Abhiyan for students with Disability

Veera Gupta¹, Preeti Sharma² & Banashree Mondal³

Abstract

The primary objective of this paper is to assess the implementation and progress achieved by the states in the area of inclusive education under the three key tasks outlined by SARTHAQ. The tasks which were reviewed related to Indian Sign Language, comprehensive and innovative school wise plans for resourcing all school adequately for children with disabilities and development of curriculum materials in standardised Indian Sign Language (ISL) across the country (66, 91 and 185). This article is based on primary data collected from state officials, as well as secondary data sourced from U-DISE and PAB meeting minutes. The difficulties and the problems faced by states to implement these tasks were highlighted here. In concluding part various suggestions were given as a suitable strategy for making inclusive education better. A format of data collection on required and available physical infrastructure and aids and appliances for children with disability was suggested as a tentative format.

Keywords: children with disability, inclusive education, sign language, SARTHAQ, comprehensive and innovative school wise plans

Introduction

Special Education to Inclusive Education

Many children with disability remained excluded from the mainstream of education for a long time. Presently, in the era of “Education for All”, the term ‘inclusive education’ is confusing to educational functionaries because in common parlance, many of us understand it consisting of all marginalized section such as gender, SC and any other groups. Special education has been a practice for more than two decades and this

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practice was also supported by law (PWD ACT 1995). The education of children with disabilities was managed central and state ministries, various departments, and schools. Meanwhile, a paradigm shift took place at international level at both philosophical and policy level. As a result, a revolution started in educational philosophy, policy and practices to include students with disability not only in the field of education as a deviant but as a customary practice in regular schools at par with all other students in admission, in learning and also in outcome. Therefore the word inclusive education comes from the literature of disability.

Equality to Equity

The shift was the outcome of many changes in educational paradigms. The major shift can be mentioned in terms of definition of disability itself. Earlier disability was seen as a medical condition and a condition associated to an individual. The shift came with theoretical pronouncements of capability approach (1979) by Nobel Laureate Amartya Sen. A new paradigm in thinking about human development took place. The capability approach suggests that disability can arise from a combination of various factors, including (a) the nature of the impairment and other personal attributes (such as genetic, accidental, racial, or regional characteristics), (b) the resources accessible to the individual, and (c) the surrounding environment, including societal attitudes (Mitra, 2006). The capability approach acknowledged John Rawls' theory of distributive justice, introduced in 1971, leading to a shift from the idea of equality to the concept of equity.

Policies and Programmes of IE

With the uprising of the concepts of equity, at the international level UNCRPD of 2006, and its ratification by 206 nations, it acted as a great lever of change. It promoted the social model of disability and the development of new national legal frameworks aligned with the UNCRPD. Pursuant to that, Special Education and Integrated Education for students with disability got transformed into Inclusive Education by enactment of national act in 2016, titled the Rights of Persons with Disabilities Act (RPwD). It also replaced many programmes and schemes and launched Inclusive Education as one of the components of Centrally Sponsored Scheme titled '*Samagra Shiksha Scheme*'. The legal RPwD Act provided the foundation to the New Educational Policy of 2020 and Inclusive Education component of the Centrally Sponsored Scheme of Samagra Shiksha Scheme. The implementation plan of the school education under the NEP 2020, known as 'SARTHAQ' has described the tasks to be carried out by different agencies to support inclusive education. The tasks that are to be completed by 2023 are available and are given in the SARTHAQ part1 and 2 (https://dsei.education.gov.in/sites/default/files/SARTHAQ_Part_2.pdf).

Objective

The implementation plan of SARTHAQ outlines the strategy and direction for executing NEP 2020. Its primary emphasis is on detailing activities that connect recommendations with 297 tasks, including designated agencies, timelines, and 304 expected outputs. This plan serves as a guiding framework for enacting transformative reforms in the school

education sector. SARTHAQ is designed to be interactive, flexible, and inclusive. It is an evolving working document that is broadly suggestive and will be periodically updated based on stakeholder feedback. The main objective of this paper is to review the SARTHAQ tasks across various states, assess the status of implementation, analyze existing gaps, identify underlying reasons, and propose actionable steps for improvement.

Methodology: The variables related to NEP implementation were derived from the SARTHAQ document developed by the Ministry of Education (MoE). Appropriately, SARTHAQ tracker and implementation of one year and two years report prepared by MOE were studied as reference point for examining further progress for reporting and analysis of status of implementation. To get latest information, state officials were contacted simultaneously through online and offline in a workshop mode. As secondary data sources PAB and U-DISE were used.

In the following section, task wise report is presented for understanding the task, status, gaps and recommendations to help overcome these. A few tasks are selected for the detailed report as all the tasks have not reached the reporting level of implementation.

Task 66-Comprehensive and innovative school wise plans for resourcing all school adequately for children with disabilities

Understanding the Task

In the realm of inclusive education, there has been a significant transition from an input-based approach to an outcome-based approach. Inclusive education means not only offering CwDs for taking admission in mainstream schools but also confirm to give them quality education. 'Functional outcome' is the major goal of inclusive education. In this context, to enhance capability of CwDs, they need facilitation in terms of various resources. As per RPWD act 2016, appropriate measures should be taken by the various officials in the 'system' to provide facilitation to CwDs. In the case of children with disabilities (CwDs) provisions should be made available as per the needs of the child to achieve objective. So, it is not just access to education but access to outcome of education. In this backdrop it is very necessary to make comprehensive and innovative school wise plans for resourcing all school adequately for children with disabilities.

Mapping of resource in school means a detailed information/plan of available resources in the school as per the needs of the CwDs, identifying existing gaps in this area and accordingly listing the required facilities. The origin of disability is not individual per se but the interaction of the individual with the environment both physical and attitudinal. These attitudinal and environmental barriers need to be eradicated to educate the CwDs. To remove these barriers both medical as well as physical resources are required. An

Two main pillars of resourcing:

1. Reasonable accommodation
2. Universal Design: of learning and Building

UDB's objective is to make the physical environment and products barriers free, whereas UDL's objective is to eliminate barriers from the learning environment and make it accessible to a wider possible range of learners.

individual may need medical devices like wheelchair, hearing aids, clippers etc. as a measure of accessibility. On the other hand, an individual may also need ramps, lifts, tactile path, audio or embossed signage as a measure of physical accessibility.

Facilitation of infrastructure again varies as per the requirements of disability. For example, a student with visual impairment would require alternative support of information in Braille to access the various part of school building on the other hand a person with locomotors disability who uses wheelchair may not need this information in Braille rather ramps are enough for him to access the whole building.

Progress Made

All the officials gave mixed responses in the progress status of task 66. Some of the state officials responded that they took initiative to make a comprehensive plan for resourcing all the schools adequately for CwDs. In Jammu and Kashmir, Nagaland, Arunachal Pradesh a comprehensive plan has been formulated in this regard. In Jharkhand school wise school development plans are being made with the help of School Management Committee; in which school-based analysis/ surveys with regard to hindrances to physical access for CwDs are being covered.

In this report the progress status of States/ UTs are discussed based on the following indicators (mentioned in the box below).

Progress made

1. Identification of CwDs
2. Provide medical devices to CwDs as per the requirement
3. Disability wise and class wise enrolment data
4. Availability of physical infrastructure in the school
5. Availability and usability of teachings aids
6. Developing Individualised Education Plan
7. Availability of skilled teachers for inclusive classroom

Identification of CwDs

Various states/UTs have reported that identification of CwDs was done as per the Samagra Shiksha Scheme. Assam developed a software APP called 'SANDHAN' for early identifications of CwDs.

Disability wise and Class wise Enrolment Data

No States/ UTs reported that disability and class wise enrolment data is available at school level. The only data which is available is in U-DISE only. After the RPwD Act came into light the data related to *21 types of disability is captured in U-DISE.* (this data need cross-checking)

Provide Medical Devices to CwDs as per the requirement

Almost all the states have reported that medical aids and appliances were provided. Andhra Pradesh is providing aids and appliances to the identified students as per ADIP scheme. However, child wise reporting is not available.

Availability of physical infrastructure in the School

As per the data given by the officer from Rajasthan, ramps are available in almost all Government Schools. In Uttar Pradesh ‘accessibility audit guidelines’ is framed in this regard.

Table 1-Percentage distribution of schools with ramp facilities by management and school category, all India

	Govt	GA	PvtU	Others
2016-2017	69.83	49.65	39.04	26.15
2017-2018	71.57	52.02	39.55	23.56
2018-2019	73.71	54.14	39.6	25.31
2019-2020	77.81	58.73	45.44	25.64
2020-2021	81.73	60.55	46.87	25.98

Source- U-DISE 2016-2018, U-DISE plus 2019-2021

If we investigate the secondary data from U-DISE data (Table-1) the schools having ramps is increasing in last five years but how much it is functional that is matter of probing. If a person is not able to reach to the principal’s room or other spaces in the schools while needed, then it is meaningless to build a ramp in one corner of the school. Also, it defeats the purpose and falls deficient in terms of achievement of universal design of building. The data needs to be understood for total coverage of schools as well as total coverage of all the spaces in the school. The table-1 & 2 given below present coverage of schools in terms of ramps and toilets only:

Table -3 Percentage of schools with functional CWSN friendly toilet in India					
	All management	Govt.	Govt. aided	Pvt. unaided	Others
2018-2019	16.64	16.31	17.65	18.18	12.46
2019-20220	20.66	19.79	20.2	24.52	13.81
2020-2021	24.25	23.73	23.8	27.39	14.64
Source: Source- U-DISE 2016-2018, U-DISE plus 2019-2021					

The last three years of U-DISE data showed that in India, schools having CWSN-friendly toilets are very few, and the functional CWSN-friendly toilets range between 19 and 25 percent only. It is evident from the data that many schools are yet to report hundred percent coverage. And the focus on hundred percent coverage within the school is yet to be achieved.

Availability and usability of Teachings Aids

Though aids and appliances are provided by the Government to CwDs, but those aids are mainly related to the medical condition of CwDs (Gupta, 2019). From the analysis of PAB minutes, very few aids and appliances are related to their teaching-learning process disability wise. Medical aids are necessary. These can help in accessing education but to provide quality education it is also important to provide educational aids. Focus on disability wise, subject wise and class wise availability of teaching aids is required.

Developing Individualised Education plan

Teachers were not preparing Individualized Education Plans (IEP) for the children with disability in school. While resource personnel were developing IEPs for children in resource rooms, individualized IEPs for each child were lacking, highlighting a significant gap in this area (Mondal, 2019). Similarly, focus on Individualised Resource Planning (IRP) is also required for UDL.

Availability of skilled Teachers for Inclusive Classroom

Some of the states reported that teachers training are done as per the inclusive education program though detailed data on number of teachers trained, how they are using pedagogy in the inclusive classroom is missing. According to the literature, the primary challenge now is the development of sufficiently skilled human resources to address the diverse needs of children with disabilities (CwDs) (UNESCO, 2019). Teachers are struggling to cater to the varied requirements of students in inclusive classrooms (Malik, 2020; Singal, 2019).

Table -4 Percentage of number of teachers trained for teaching CWSN to the total number of teachers trained for teaching CWSN

	Govt. aided	% of number of teachers trained for teaching CWSN to the total number of teachers trained for teaching CWSN	Pvt. unaided	% of number of teachers trained for teaching CWSN to the total number of teachers trained for teaching CWSN	Total
2019-2020	61455	9.22	218807	32.81	666853
2020-2021	59251	8.94	211315	31.90	662303
2018-2019	36378	5.67	144581	22.53	641624
2017-2018	38533	10.9	66141	18.84	350935
2016-2017	37845	11.83	45109	14.11	319776

Source- U-DISE 2016-2018, U-DISE plus 2019-2021

In India, the percentage of teachers trained to educate children with special needs (CWSN) compared to the total number of trained teachers ranges from 5-10% in government schools and 14-32% in private unaided schools (Table-4). This indicates a limited number of teachers equipped to teach CWSN, which negatively impacts the teaching-learning process.

Progress Report of SARTHAQ Task no. 91 & 185 Indian Sign Language

What is Sign Language?

Sign language is considered a language to communicate. The researches and advocacy groups for hearing impaired have provided evidence in favour of use of sign language to educate a child with hearing impairment. It is considered equal to mother tongue.

91. Development of Curriculum in ISL
185. Modules to teach ISL

As initial education in mother tongue is recommended similarly use of sign language is also recommended. As the name is suggestive sign language is based on signs made by hands and body. It also uses gesture, and facial expressions for concepts and as well as for spellings of new words. Unlike other languages, it is not standardized. It varies from country to country as per their culture. Further, these variations are observed to be significant in nature and at times contradicting. Therefore, a need was felt to document sign language as per Indian culture. It is a mammoth task due to variety available in India itself in languages and culture.

Why Indian Sign Language?

Communication is a crucial element of the teaching and learning process. Sign language serves as an effective means of communication with individuals who have hearing impairment. The hearing impairment is an invisible condition and is not diagnosed till the child has attained the age of speech in most of the cases. As a result, a child suffers life time impairment. Though, if identified early, many may get medically treated to gain hearing power. The Ministry of Health is working on identification of this condition at birth to eliminate or reduce the number of hearing impairment in future. At present, in India, there are around 50 lakh deaf people according to the Census 2011 but only 31% get enrolled in school, and only 1% complete higher education (RCI 2007). The latest data on 1 to 18 years of age population having HI is yet to be made public by the Census Authority of India for accurate estimation. However, the available UDISE data on hearing impairment suggests that they are often getting dropped out from the school. Besides the unavailability of current data (UDISE+) to learn about the current enrolment of students with hearing impairments in schools, there has been scant enrolment data for the CWSN in schools prior to 2018. The existing data reveals that the students with HI dropped out more in the transition stage of education.

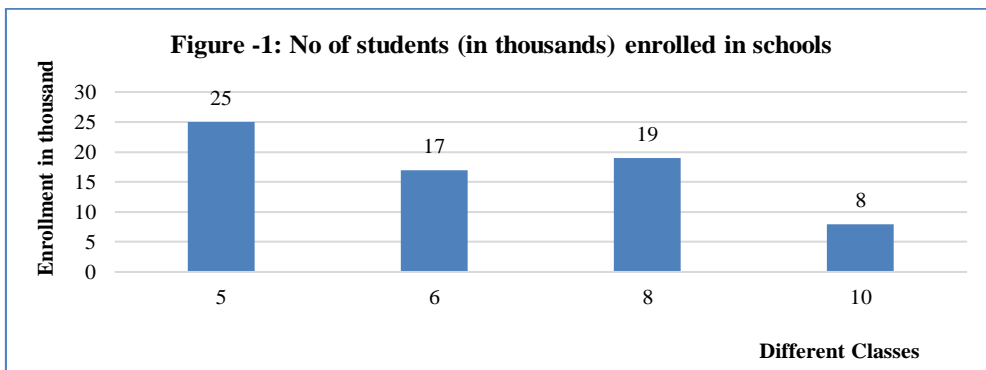


Figure-1 shows that the enrolment of students with HI is decreasing as they progress to the next year (UDISE+ Report 2020-21).

The government report also expounds that the amount sanctioned for (elementary education) aids and appliances is completely delivered, but without mentioning how it is deciphered to meet the different needs of CWSN (especially hearing devices and Cochlear implants). Therefore, it is laborious to identify how much children with HI have benefited from the scheme and how many remains. The exact number of HI children and children with cochlear implants is still unknown. It is essential not only to secure funding to address the needs of children with hearing impairments but also to ensure that these funds are utilized effectively for their maximum benefit. The research studies suggest that it is because of non-availability of suitable learning environment. The child with hearing impairment is being given hearing aids and medical treatment of cochlear implant also to remove the barrier yet results are not satisfactory. Therefore, the use of sign language is recommended to teach the children with hearing impairments to retain them in the system but it is not being practiced. Further, only 3 schools out of 431 schools use ISL (AYJNIHH 2000). It is due to lack of non-availability of Indian sign language, trained teacher in sign language and material in sign language.

According to the NCF 2005, a teacher's role resembles that of a potter, shaping a child according to the student's abilities and interests. To evaluate these capabilities effectively, teachers must be well-trained, qualified, and experienced to nurture students' potential. Thus, recruiting trained teachers in schools is essential to meet the needs of children with hearing impairments. However, according to reports, the JNV and Social Welfare Department schools have no teachers for HI students.

Sign learn Mobile App

- Launched by Ministry of State for Social Justice and empowerment on Sep23,2022
- To make the ISL dictionary easily available to all
- Sign Learn app can be searched through Hindi or English medium

The research study reveals that only a small percentage (fourteen percent) of teachers exhibit minimal adaptability to using sign language for classroom communication, although they have some understanding of conveying messages through gestures. Conversely, eighty-six percent of

teachers lack any knowledge of sign language, and none possess expertise in this area.

The research study also revealed that "eighty-six percent of the teachers in the sample lack knowledge about the degree of hearing loss." It is essential for teachers to understand the level of hearing impairment among their students; without this understanding, true inclusivity in the classroom cannot be achieved, rendering the concept of inclusion an illusion. Recognizing the degree of hearing loss is a fundamental step in developing effective strategies for students with hearing impairments. Teachers' lack of awareness regarding the basic concepts of disability negatively impacts the teaching methods employed for these students.

To attain the goal of universalization of education and address the needs of students with hearing impairments, the NEP has outlined specific objectives, which SARTHAQ has expanded into actionable tasks.

Task at hand:

1. Standardized Indian sign language
2. Translate curriculum and Learning material in ISL
3. Train teachers in the ISL

Progress made:

1. Development of Indian Sign Language

Knowing the importance of ISL, the Indian Sign Language (ISL) Dictionary has been developed by Indian Sign Language Research & Training Centre (ISLRTC) under the Department of Empowerment of Persons with Disabilities (DEPwD), M/o Social Justice & Empowerment, Govt. of India. This dictionary has 10,000 video terms divided into five categories -Academic, Agricultural, Everyday life situations, Technical and Legal. ISL dictionary provides vocabulary for the development of curriculum and modules for training.

0. Development of Curriculum and Material

- NCERT and ISLRTC have signed Memorandum of Understanding (MoU) and are working in close collaboration for developing NCERT textbook based videos in Indian Sign language. Till date about 550 ISL videos from classes 1-5 has been developed.
- NCERT in collaboration with ISLRTC have created metadata for ISL dictionary and the dictionary words are uploaded on DIKSHA portal in alphabetical order (diksha.gov.in) for wider access and dissemination among all the stakeholders.
- **Karnataka** already has a curriculum and resources in ISL and the addition of more resources is initiated.
- The state of Uttar Pradesh has developed training modules and handbooks for students with hearing impairments
- Maharashtra develops e-content in sign language.

- In **Assam**, the Assamese alphabet is written in sign language.
- **Gujarat** is developing additional features such as audio files, e-publications, subtitles, ISL, etc. The G-Shala App provides access for students with hearing impairments.
- Jammu and Kashmir have taken the initiative to develop high-quality modules for ISL in the TEP for SCERT 2022-23.

0. Training of Teachers.

Teachers are being trained in the states on ISL:

- In **Uttarakhand**, Bajaj Institute of Learning has trained 229 teachers in the session 2021-22 and training of 324 teachers is scheduled for the session 2022-23.

Gaps 66

There are certain gaps for implementing task 66 regarding the identification of CwDs the data regarding the total number of CwDs identified, among them and children required devices in the initial stage of their schooling, how many of them required facilities in later stage that part is also missing in the report by the states. For example, if a student with hearing impairment use cochlear implant and s/he can hear everything by using it then other educational devices are not required for that student in the later stage of his/her learning. The data regarding the functionality of the ramps to access the whole campus is missing. Again, data related to disability wise accessible toilet is missing. There is a gap regarding the data on 100 percent coverage of providing aids and appliances to the identified students. Gap also exists regarding how many times these devices are changed when it is not functioning. No data is available on the number of teachers with required qualification for teaching in inclusive classroom. Basically, to teach in inclusive classroom a teacher must have knowledge of subject, pedagogy and of disability. It is evident from the data and discussion that such manpower is not yet available in the schools.

Gaps Identified Task 91 and 185

There is gap in identification of accurate number of children in the school going age in the population. The data on student population will help in planning education for them. Another gap is how many students with HI will benefit with medical intervention? In case, it is not possible then how long the use of ISL will proved beneficial? Is it for elementary classes or also for senior classes? Signing spelling is better or print material is better for senior classes when ISL vocabulary falls short. Will visual and tactile input will facilitate learning? How many teachers and peers will learn sign language to provide exclusive environment? Learning material such as videos in Indian sign language for elementary classes for all subjects can be made available at national level or does it need state intervention? How can the fund be disbursed to meet the needs of children with hearing impairments? No data on retention rate of CWSN.it may be concluded that scant data is available on these issues.

Recommendation for Task 66

It is very important to develop a comprehensive plan with the collaboration of different officials in the school level so that a complete picture can come out. Still there are many children with disability who are not identified and data regarding in this aspect is vital. Besides that, specific child-wise resource planning is to be achieved. It should be the concern of appropriate government to collect data in an appropriate format on available universal design of building. It may include variables such as ramps, tactile paths and signage among other variables while doing the comprehensive plan for resourcing the schools. A sample format is suggested below:

Sample format of collecting data to resourcing the Universal Design of Building:

Number available in the schools	Location of the ramp	Functionality of the ramps (whether it is accessible for the students who required)	Accessibility of the ramp in the whole building (inside and outside the campus)
Tactile path			
Signage			
Ramp			
Any other			

Every year child wise composite data is required to plan for adequate resourcing to educate the CwDs. The data should further bifurcate in elementary, secondary and senior secondary stage. Disability wise mapping of medical as well as teaching devices is important for school wise resource plan. A sample format is given below:

Sample format of collecting data on required and available aids and appliances for children with disability

Types of disability	Number of children enrolled in school	Class	Required medical devices	Required teaching Resources
Visual impairment			Eye transplant	Braille paper
			Eyeglasses	Braille writer
			Or cam eye	Talking aids and tape recorder
			ICT enabled chip in Brain to see	Reading machine
Hearing impairment				Magnified glass
			Ear operation	Digital hearing aids
			Hearing aids	ISL material
Autism			medicines	Portable word processor
			therapies	Talking ward processor
Orthopedically			Crutches	

impairment				
			Tricycles	
			Callipers	

Source- IDC Survey Data, 2016-2017 (cited in Sekhri, 2017)

Sometime providing assistive devices in the early stage of disability may help to remove the degree of disability in the later stage. See the box in the right side, OrCam My Eye is a great initiative which helps people with visual impairment to understand and read the text. This type of resources may eliminate the need for extra help.

OrCam MyEye, is a portable, artificial vision device that allows the visually impaired to understand text and identify objects through audio feedback describing what such people are unable to see. It is one of the important assistive technologies to improve the life of the people with visual impairment.

Link for details-
https://mobile.twitter.com/Ananth_IRAS/status/1602308354973790208

Recommendations for Tasks 91 and 185

When a child is born, it is the duty of health worker to screen for hearing ability and diagnose any deviation at the earliest to start intervention. Once child is enrolled in the school at the age of six, medical condition should be certified. Also, the census department in collaboration with the medical department should make it clear how many students may require special intervention on account of being hearing impairment. The educational functionaries may provide special teacher, teaching learning material to every student at school level or cluster level. It will help in better planning of resources for the benefit of the child. At present interventions are happening but may get slipped in the system and may not reach the child. For example, teacher may be trained in ISL but that teacher is not available to the child. Similarly, videos are prepared by NCERT subject wise for elementary classes but are not available to the child. In addition, a few activities may not be required to be duplicated by all states as ISL is applicable to all. In brief, better planning of coordination among agencies is required, correct estimation of needs of students is required to achieve universal learning. To meet the needs of children with HI, the funds should be accurately mentioned as per the different aids and appliances to meet the different needs of CWSN (as the exact amount sanctioned for hearing devices and braille books). As disability is an evolving concept, it is essential to track the progress and enrolment of children with HI annually.

Conclusion

In this paper analysis of the SARTHAQ tasks for several states, implementation status, gap, and causes behind this is discussed in detail. Medical devices and aids are crucial for gaining access to school, educational aids are also equally important for high-quality education. Such instructional tools should be suitable according to the class, subject, and impairment. While individual education plans (IEPs) are being created, child-centered IEPs are still lacking. Only a very tiny percentage of teachers have received

training to teach CWSN, which has a negative impact on teaching learning. School dropout rate of students with hearing impairment is very high. Government report states that all the money designated for educational aids and appliances has been given, but it makes no reference of how the amount is calculated to meet various needs of CWSN especially for hearing devices and Cochlea implants. Therefore, it is difficult to determine how many children with HI are beneficiaries and how many are left out. Cochlear implant and hearing aids are not sufficient for the hearing-impaired children to overcome the barrier. Therefore, using sign language to teach deaf children is advised in order to keep them in the system, but it is not actually done. Only very few schools use Indian sign language. The paucity of materials in sign language, teachers who are trained in sign language, and availability of Indian sign language are to blame for this. Most of the teachers are not only completely ignorant about sign language but also do not know the severity of hearing loss. So, we cannot expect an inclusive classroom and the idea of inclusion itself remains a myth if teachers are unable to recognize the severity of hearing impairment of the HI children in their classes. The first step towards inclusive education for HI children is that teachers have knowledge of the severity of their hearing loss. Apart from that, teaching methods used for these students are adversely affected due to the ignorance of teachers about the fundamentals of disability. A teacher needs to be aware about the subject, pedagogy, and disabilities in order to teach in an inclusive classroom.

Infrastructure compatible with the needs of the CWSN is also very important for an inclusive system of education. Appropriate government should be responsible for gathering information on the available universal building designs in a suitable format. While creating the comprehensive plan for resourcing the schools, it may consider factors like ramps, tactile routes, and signage among others. For this, a sample format is developed in this paper. Additionally, child wise composite data must be collected annually in order to arrange for enough resources to teach CwDs. Further division of the data into elementary, secondary, and senior secondary levels is required. It is crucial for a school's resource plan to map medical and teaching tools according to the disability of each CWSN. A sample format is proposed in this paper for this purpose.

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The Impact of Schooling Years on Child Development: A Meta-Analysis with Insights from India's National Education Policy 2020

Savita Kaushal¹ & Anam Fatima²

Abstract

The schooling system plays a pivotal role in shaping children's development, providing educational experiences that nurture individual personalities and prepare them for meaningful lives. This article examines the critical role of early educational foundations in long-term development, focusing on the impact of schooling years on various domains of child development, including physical, cognitive, social, emotional, moral, and language growth. By analysing existing literature and documents, with special reference to the National Education Policy (NEP) 2020, this article 'The Impact of Schooling Years on Child Development: A Meta-Analysis with Insights from India's National Education Policy 2020' attempts to reflect on the influence of school environment and teachers on child development to emphasize the importance of high-quality education and supportive school environments in fostering holistic child development. The findings underscore the role of schools and teachers in enhancing cognitive skills, social competencies, problem-solving abilities, and emotional resilience, ultimately contributing to children's overall growth and preparedness for adult life.

Keywords: Influence, School, Teachers, Child Development, Early Foundations, National Education Policy (NEP) 2020

Introduction

Education is fundamental to children's development, shaping not only their intellectual capabilities but also their social and emotional well-being. Schools are not merely institutions for academic instruction; they are environments where children experience and interact with various elements that significantly impact their growth. Bronfenbrenner's ecological systems theory and Erikson's theory of psychosocial development offer valuable frameworks for understanding these impacts. According to

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Bronfenbrenner (2024), the microsystem (direct interactions such as with family and teachers) and the mesosystem (interactions between microsystems) are vital for a child's development. Schools, as part of these systems, influence physical, cognitive, and psychological growth. Erikson's theory emphasizes the importance of resolving developmental crises at each stage, which affects personality and behaviour (McLeod, 2024).

The National Education Policy (NEP) 2020 reinforces the importance of early childhood care and education (ECCE), recognizing it as the foundation for a child's overall development. The policy advocates for a holistic approach to education, integrating academic learning with cognitive, social, and emotional development from the earliest years. This article explores the role of schools in addressing developmental crises and supporting children's holistic development, in alignment with the principles outlined in NEP 2020. By reviewing relevant literature and documents, including studies from India, we will examine how schooling influences various aspects of child development and highlight the critical factors contributing to effective educational experiences.

Theoretical Frameworks: Bronfenbrenner and Erikson

Bronfenbrenner's ecological systems theory divides the environment into several levels, including the microsystem (immediate surroundings like family and school), mesosystem (interactions between microsystems), exosystem (indirect influences like parental work), and macrosystem (cultural and societal influences). Schools are situated within the microsystem and mesosystem, directly impacting children's development through daily interactions and the integration of family and educational experiences (Evans, 2024).

Erikson's theory of psychosocial development outlines eight stages, each characterized by a specific conflict that must be resolved for healthy personality development. In the early years, children face crises such as trust versus mistrust and initiative versus guilt. These early experiences are crucial for shaping personality traits and behaviours (McLeod, 2024). Schools play a significant role in resolving these crises by providing a supportive environment where children can develop essential traits like trust, initiative, and competence.

NEP 2020 emphasizes the need for developmentally appropriate practices in schools, which aligns with both Bronfenbrenner's and Erikson's theories. The policy advocates for flexible, multi-level, play-based learning and emphasizes the importance of a supportive school environment in addressing the psychosocial needs of children at each stage of their development. By fostering trust, initiative, and competence, schools can help children navigate developmental challenges effectively.

Influence of School Environment on Development

Schools contribute to children's development through structured curricula and social interactions that impact physical, cognitive, socio-emotional, and language development. Eccles and Roeser (2012) emphasize that schools serve as multi-level

social organizations influencing various developmental domains. The physical environment of a school, including well-maintained facilities, clean classrooms, and adequate resources, is crucial for creating a conducive learning atmosphere. Research by Levy et al. (2018) highlights that schools with better-maintained facilities report higher student attendance and improved academic performance.

In the Indian context, Jain and Prasad (2018) conducted a study examining the impact of school infrastructure on student learning in India. Their findings align with global research, revealing that inadequate facilities, such as lack of proper classrooms, sanitation, and drinking water, negatively affect student attendance and learning outcomes. The National Education Policy (NEP) 2020 addresses this issue by advocating for significant investments in building and upgrading school facilities across the country. The policy emphasizes the need for safe and inclusive learning environments, particularly in rural and underserved areas, recognizing that improving infrastructure is crucial for better learning outcomes and overall child development.

In addition to physical infrastructure, the emotional and social environment of a school significantly affects development. Positive relationships with teachers and peers, along with a supportive school climate, foster students' emotional well-being and social skills. Studies have shown that schools with strong social-emotional learning (SEL) programs produce students with better emotional regulation, social skills, and academic performance (Durlak et al., 2011). SEL programs teach students how to manage emotions, set goals, and establish positive relationships, contributing to overall development.

NEP 2020 emphasizes the importance of creating a joyful, engaging, and stress-free environment for students. The policy advocates for the integration of SEL into the curriculum to support the holistic development of children. By promoting emotional well-being and social skills, schools can help students become more resilient and better prepared to face life's challenges.

Curriculum and Instructional Practices

The curriculum and instructional practices within schools play a vital role in shaping children's cognitive and social development. Schools provide structured learning experiences that promote intellectual growth and the acquisition of essential life skills. For instance, a well-designed curriculum integrates academic subjects with practical applications, helping students develop problem-solving abilities and critical thinking skills (Eccles & Roeser, 2012).

In India, the Annual Status of Education Report (ASER, 2021) has highlighted disparities in learning outcomes, particularly in rural schools, where foundational literacy and numeracy skills often lag behind. NEP 2020 addresses these challenges by emphasizing foundational literacy and numeracy as top priorities, introducing the National Mission on Foundational Literacy and Numeracy, which aims to ensure that every child in Grade 3 and above has foundational literacy and numeracy skills by 2025. This initiative aligns

with ASER's findings, underscoring the importance of early intervention in improving educational quality and student performance.

Extracurricular activities, such as sports, arts, and debates, further enhance children's development by providing opportunities to explore interests and develop leadership, time management, and teamwork skills. Fredricks and Eccles (2006) found that participation in extracurricular activities is associated with higher academic achievement, better social skills, and lower rates of school dropout. These activities offer students a platform to apply and expand their learning beyond the classroom, contributing to holistic development.

NEP 2020 also highlights the importance of integrating co-curricular activities with the academic curriculum. The policy suggests that arts, sports, and vocational skills should be given equal importance to academic subjects, ensuring a balanced approach to education that promotes both intellectual and personal growth.

Social and Emotional Development

Schools play a crucial role in fostering social and emotional development. Positive teacher-student relationships are essential for students' emotional well-being and academic success. Hattie (2009) found that teacher-student relationships are among the most significant determinants of student achievement. Teachers who provide support, encouragement, and constructive feedback contribute to higher levels of student engagement and self-esteem.

In India, the mental health and well-being of students have gained increasing attention, with studies showing that academic pressure, societal expectations, and bullying contribute to stress and anxiety among students (Pathak, 2018). The growing recognition of mental health challenges in schools has led to increased calls for integrating mental health education and support systems within the educational framework. NEP 2020 acknowledges the importance of mental health and well-being in education, proposing the inclusion of counsellors and mental health professionals in schools. The policy also recommends the integration of well-being modules into the curriculum, aiming to foster a supportive environment where students can develop resilience and emotional intelligence.

A supportive school environment helps students navigate social challenges and build resilience. Schools that address issues such as bullying and academic pressure create a safe and inclusive atmosphere where students can thrive. Research by Olweus (1993) indicates that comprehensive anti-bullying programs lead to lower rates of bullying and better mental health outcomes for students. Additionally, balancing academic rigor with recreational activities is crucial for preventing stress and burnout (Luthar, 2015).

Teacher Influence and Professional Development

Teachers play a pivotal role in shaping students' development through their interactions, behaviours, and teaching practices. Effective teaching practices include fostering curiosity, encouraging exploration, and providing constructive feedback.

Teachers should create an environment where students feel valued and motivated to learn.

A study by Banerjee et al. (2016) on teacher effectiveness in Indian schools highlights the need for ongoing professional development to improve teaching practices. The study found that teachers who received regular training and support were more effective in the classroom, leading to better student outcomes. NEP 2020 recognizes the critical role of teachers in achieving the policy's vision for holistic education. The policy proposes continuous professional development (CPD) for teachers, emphasizing the need for regular training and upskilling to keep teachers abreast of the latest pedagogical approaches. By enhancing their skills in areas such as experiential learning, technology integration, and inclusive education, teachers can better support students' diverse needs and contribute to their overall development.

Professional development for teachers is essential for enhancing teaching practices and improving student outcomes. Ongoing training helps teachers stay updated with the latest educational strategies and research, enabling them to implement best practices in the classroom. By investing in teachers' professional growth, schools can ensure that students receive high-quality education that supports their holistic development.

Future Vision

The futuristic vision emerging from this article is one of a transformative and holistic educational system that fully embraces the principles outlined in India's National Education Policy (NEP) 2020. This vision sees schools as dynamic ecosystems that not only impart academic knowledge but also nurture the comprehensive development of children, preparing them for the complex challenges and opportunities of the 21st century. Here are the key elements of this futuristic vision:

- **Holistic Child Development:**The future of education, as envisioned in the article, prioritizes the holistic development of children, integrating cognitive, social, emotional, and physical growth. Schools will be environments where children are supported in every aspect of their development, fostering not just academic success but also emotional resilience, social competence, and physical well-being.
- **Child-Centred Education:**The above discussions advocate for a shift towards a child-centred approach, where educational practices and curricula are tailored to the diverse needs and developmental stages of children. This vision aligns with the NEP 2020's emphasis on flexibility, inclusivity, and personalized learning pathways that respect each child's unique potential and learning style.
- **Integration of Social-Emotional Learning (SEL):**The future of education will see a seamless integration of social-emotional learning into the curriculum, ensuring that children develop critical life skills such as emotional regulation, empathy, collaboration, and decision-making. This approach will prepare students not just for

academic challenges but for life beyond the classroom, equipping them with the tools to navigate personal and professional relationships effectively.

- **Strengthened School Infrastructure:** The vision includes a significant improvement in school infrastructure, particularly in rural and underserved areas, ensuring that all students have access to safe, inclusive, and well-equipped learning environments. This focus on infrastructure will help bridge educational disparities, allowing every child to benefit from high-quality education regardless of their geographical location or socio-economic background.
- **Empowered and Skilled Teachers:** Teachers will be at the forefront of this educational transformation, with ongoing professional development and support enabling them to adopt innovative teaching practices. The article envisions a future where teachers are not just educators but mentors who inspire curiosity, creativity, and critical thinking in their students.
- **Inclusive and Equitable Education:** The futuristic vision emphasizes the importance of creating an inclusive and equitable educational system where every child, regardless of background, has the opportunity to thrive. NEP 2020's focus on equity and inclusion will guide the development of policies and practices that address the needs of marginalized and underserved communities, ensuring that education becomes a powerful tool for social mobility and justice.
- **Global Competence:** Finally, the article envisions an education system that prepares students for the globalized world. Schools will foster global competence, helping students understand and engage with global issues, appreciate cultural diversity, and develop the skills needed to collaborate across borders in an increasingly interconnected world.

In other words, the future vision is one of a reimagined educational landscape where schools are not just places of learning but nurturing environments that contribute to the full spectrum of a child's development, equipping them to become well-rounded, resilient, and responsible global citizens.

Implications

The findings of this meta-analysis have significant implications for educational policy and practice in India. First, the integration of NEP 2020's principles into school curricula and instructional practices can enhance the quality of education and support the holistic development of children. By emphasizing foundational literacy and numeracy, promoting socio-emotional learning, and integrating co-curricular activities, schools can create environments that foster cognitive, social, emotional, and physical growth.

Second, improving school infrastructure and creating safe, inclusive learning environments are essential for ensuring equitable access to quality education. Investments in school facilities, particularly in rural and underserved areas, can help

bridge the gap in educational outcomes and provide all children with the opportunities they need to succeed.

Third, the focus on teacher training and professional development is critical for enhancing teaching practices and improving student outcomes. By providing teachers with ongoing support and access to the latest pedagogical tools, schools can ensure that educators are equipped to meet the diverse needs of their students and contribute to their overall development.

Conclusion

The school system, which includes the school environment, curriculum, and teachers, is important for children as it greatly influences their development, shapes their personality, and affects their behaviour, which is crucial for human development. The influence of schooling years on child development is profound, impacting various domains of growth, including cognitive, social, emotional, and physical development. Schools serve as crucial environments where children not only acquire academic knowledge but also develop essential life skills and social competencies. The National Education Policy (NEP) 2020, with its focus on holistic education, provides a comprehensive framework for addressing the diverse needs of students and enhancing the quality of education in India.

By integrating the principles of NEP 2020 with existing research and literature, this article underscores the importance of a supportive school environment, effective teaching practices, and a well-rounded curriculum in fostering holistic child development. The findings suggest that a child-centred approach to education, as advocated by NEP 2020, can significantly contribute to the overall growth and well-being of children, preparing them for the challenges and opportunities of the future. Therefore, it is the responsibility of the school and teachers to provide such an environment and experiences so that children will develop their personalities and behaviour, which will help them adjust in the later phases.

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Program Commitment and Career Maturity as Predictors of Psychological Well-Being: A Study on Undergraduate Students of Panjab University, Chandigarh

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Abstract

Along with a healthy lifestyle, psychological well-being is an important objective for both physical and mental health. To encourage holistic development, the National Education Policy 2020 prioritizes mental health and well-being of students. It also stressed developing educational qualities and practical skills that encourage their growth, self-preservation, and sustainable development (NCERT, 2022). The current study investigated psychological well-being in university students as it related to career maturity and program commitment. The results showed a significant relationship between career maturity, program commitment, and psychological well-being among university students. Additionally, it was found that program commitment and career maturity have a significant contribution in predicting psychological well-being of university students. It implies that departmental career counselling and guidance sessions are crucial for providing students with access to professional information and support, and that these sessions will eventually contribute to the students' psychological wellbeing.

Keywords: Psychological Well-being, Career Maturity, Program Commitment, University Students.

Introduction

Being contented is one of the important things that individuals want to achieve. Good physical and mental health inevitably lead to a great sense of well-being. It affects how we see the outside world, making it possible for us to see things more optimistically and handle day-to-day difficulties more skilfully. Thus, maintaining our psychological well-being in addition to leading a productive life is essential for maintaining both our physical and mental health. But maintaining this feeling of well-being throughout life is not simple especially when you're a student, particularly in higher education.

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The National Policy on Education (2020) stressed the development of each child's potential in school in order to maximise the nation's tremendous human resources for growth. It also emphasised the significance of developing calculated favourable attitude about all types of work. There is a growing awareness and acceptance of the importance of well-planned guidance programmes directed toward this goal. The NEP 2020 offers a complete revamp of current teaching and learning processes, with a focus on improving students' academic and vocational abilities. In the same context, CBSE has taken on the challenge of effectively implementing an online platform for Career Guidance and Counselling of class IX-XII students in all affiliated schools.

The National Education Policy 2020 also places considerable emphasis on students' mental health and wellbeing in order to support holistic development. It also placed emphasis on developing the students practical skills and educational attributes that support their growth, self-preservation, and sustainable development (NCERT, 2022). But the concept of holistic development applies to more than just education. Students attending colleges and universities after completing their secondary education successfully face a multitude of challenges pertaining to their academic performance, career-related decisions, and a host of other issues that could potentially affect their psychological well-being.

As adolescents go from a safe atmosphere in school to a different world of college or university, they often find it difficult to adjust there. For many students, the first year of university is difficult; new obligations and expectations can be overwhelming. In today's tough world, these young university and college students are exposed to a variety of pressures that might negatively impact their well-being (Cvetkovski, Jorm & Mackinnon, 2019; Duffy et.al, 2020; Kumari, 2020; Medlicott et. al., 2021). For these young students, their first year in college brings a slew of new hard situational demands, requiring significant adjustments. These college students strive not just to achieve and retain good marks at the institution, but also to live a fulfilling life (Eisenberg, Hunt & Spear, 2013). It is important to understand that because of the wide variety of career-related opportunities, financial constraints, and relatively different demands of academia at the school level, students from higher education are more likely to make poor career-related decisions, low self-esteem, and low academic performance. This is the time in their lives when these young people require robust mental health in order to deal with life effectively.

Numerous studies have explored various aspects of students' university experience and negative adjustment on a methodological level (e.g., Cvetkovski, Jorm & Mackinnon, 2019, Duffy, et.al, 2020). Some studies have looked at students' university experiences and psychological well-being (e.g., Arnold, 1989; Strauss & Volkvein, 2004; McNally & Irving, 2010; Eisenberg, Hunt & Spear, 2013; Cho & Yu, 2015, Parry, Dicks & Stepchange, 2020), but they typically used measures that do not reflect recent theoretical, conceptual, and empirical advances in psychological well-being measurement. Several studies have linked career decision-making to the life-satisfaction component of psychological well-being (e.g., Uthayakumar, Schimmack, Hartung & Rogers, 2010; Ghosh,

2016; Kumari, 2019; Santilli et al., 2020; Tian et al., 2020; Magnano, 2021). However, several studies have linked career-decision-making attitudes and competencies to university programme commitment (e.g., Nevill & Super, 1988; Savickas, 1990). Although earlier research has looked at the effects of university experience on career decision-making, this study will look at both of these factors, career maturity and program commitment. The study was carried out taking into cognizance following research questions:

1. Is there any relationship between career maturity, program commitment and psychological well-being?
2. Do career maturity and university program commitment predict significantly the psychological well-being of university students?

Following **objectives** were formulated to conduct the present study:

1. To study the relationship of psychological well-being with career maturity and program commitment of university students.
2. To find out the predictors of psychological well-being from among the independent variables of career maturity and program commitment.

Following **hypotheses** were taken into consideration for carrying out this study:

1. There exists no significant relationship between career maturity, and psychological well-being among university students.
2. There exists no significant relationship between program commitment, and psychological well-being among university students.
3. Independent variables of career maturity and program commitment would not contribute significantly in predicting the psychological well-being both independently as well as conjointly among students.

The present study is descriptive, analytical survey research and co-relational in approach. To find the correlates and predictors of criterion variable of psychological well-being of students from among the predictor variables of career maturity, and program commitment, multivariate regression analysis was used.

Out of 78 teaching and research departments, faculty of Science with 12 departments comprised the field of investigation. As the present study is cross-sectional in nature, the investigator used purposive sampling i.e. first and last year of undergraduate students were selected from the various departments of faculty of sciences. 361 students from the undergraduate courses participated in the study.

Following research tools were used to collect the data for the present study:

- Psychological Well-Being scales by Ryff (1995).
- The Career Maturity Inventory – Form C (Revised) by Crites and Savickas (2011)
- University Program Commitment Scale developed by the investigator.

Section I: This section deals with bivariate coefficients of correlations between career maturity, program commitment and psychological well-being. To analyse the data in accordance with this objective, product-moment correlation coefficients were calculated.

Table 1: Correlation matrix for the total sample (N=361) on the variables of Psychological Well-being (PWB), Career Maturity (CM) and Program Commitment (PC)

Correlations		SUM PWB	CM	PC
PWB	Pearson Correlation	1	.562**	.395**
CM	Pearson Correlation	.562**	1	.212**
PC	Pearson Correlation	.395**	.212**	1

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

Discussion Based on Table 1

The correlation between psychological well-being and career maturity was found to be .562 which was more than tabulated value which shows statistically significant correlation at .01 level indicating that students who have competence and positive attitude towards making smart career decisions also set more realistic goals, feel more satisfaction and contentment in their life.

The null hypothesis that there exists no significant relationship between psychological well-being and career maturity was rejected for the present study. Through direct lines, Kumari (2019) discovered similar findings, while Sauter, Murphy and Hurrell (1990), Coertse and Shepers (2004), Kalchik and Oertlie (2010), and Koivisto (2010) identified indirect relationships between career maturity and psychological well-being.

The correlation between psychological well-being and program commitment was found to be .395 which was more than tabulated value which shows statistically significant correlation at .01 level. According to the findings, students who were committed to their studies reported higher levels of well-being, a greater sense of meaning in their lives, more self-assurance, and a stronger desire to further their personal development and build healthy interpersonal relationships.

The null hypothesis that there exists no significant relationship between psychological well-being and program commitment was rejected for the present study. Studies on physicians conducted by Freeborn (2001) back up these findings, which found that those who felt more in control of their workplace, had a reasonable workload, and received support from their co-workers reported higher levels of job satisfaction and commitment, and as a result, a better overall well-being.

Section II: The purpose of this analysis was to determine whether independent variables i.e. career maturity and program commitment taken together or separately have any contribution to make to the prediction of criterion variable i.e. psychological well-being.

Regression analysis was used for this purpose and before applying the statistical technique to analyse the data, the assumptions of multiple regression were tested.

Table 2.1: Stepwise multiple regression analysis for Psychological Well-being (PWB) and independent variables of Career Maturity (CM) and Program Commitment (PC)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					F	Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. Change		
1	.562 ^a	.316	.314	26.271	.316	167.007	1	361	.000		
2	.629 ^b	.396	.392	24.730	.080	47.401	1	360	.000	1.966	
a. Predictors: (Constant), CM											
b. Predictors: (Constant), CM, PC											
c. Dependent Variable: PWB											

From the Table 2.1, it is clear that the variance in psychological well-being defined by the variable of career maturity was 31.4%.

In Model 2 of table 2.1, with the introduction of the variable of program commitment, there was an increase of .082 units of adjusted R square. Hence, an additional 8.2% of the total variance in the psychological well-being was explained by program commitment.

Table 2.2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	144251.974	2	72125.987	117.937	.000 ^c
	Residual	220163.122	360	611.564		
	Total	364415.096	362			
a. Dependent Variable: PWB						
b. Predictors: (Constant), CM						
c. Predictors: (Constant), CM, PC						

The results indicated in table 2.2 tell whether or not our model (which includes Career Maturity, and Program Commitment) is a significant predictor of the psychological well-being. We may conclude that the regression model significantly predicts psychological well-being as $p < .05$ (significance value).

$$F(2, 360) = 117.937, p < .001$$

Table 2.3: Coefficients Statistics

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	125.071	8.309		15.053	.000

CM	3.460	.289	.501	11.959	.000
PC	.368	.053	.289	6.885	.000
a. Dependent Variable: PWB					

The contribution of each individual predictor variable to the model is shown in Table 2.3. The results show that career maturity ($p < .001$) and program commitment ($p = .001$) significantly contributed to the model.

The final predictive model was:

Psychological Well-being = 125.071 + (3.460*Career Maturity) + (.368*Program Commitment)

So, the null hypothesis that independent variables of career maturity, and program commitment would not contribute significantly in predicting psychological well-being independently as well as conjointly among students was rejected.

Conclusion

In the present study career maturity, and program commitment were all found to be significantly positively related to psychological well-being in university students. These findings highlight the importance of career maturity, and program commitment in influencing students' psychological well-being throughout their university experience.

The current study may be beneficial to university administrators, academic advisers, and career counsellors as they work to improve students' psychological well-being. It highlights the necessity for career maturity and university program commitment, as well as the establishment of programs that enhance students' psychological wellbeing.

Administrators at universities should put more effort into creating and implementing initiatives that help students grow professionally and become more committed to their studies. It may be more successful to establish programmes that increase students' social competency while also delivering career-related knowledge (which may lead to greater programme commitment). Attrition-prone students with low levels of university program commitment and psychological well-being may benefit from this method as well.

Positive psychology therapies that increase well-being and positive outcomes in life need to be researched. Relevant concepts such as positive emotions, character strengths, and resilience are being examined in regard to their relationship with well-being. Establishing programmes that impart career-related knowledge while simultaneously improving students' career maturity may be more crucial.

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Preschool Teacher as a Nation Builder from Classrooms to Communities: Preschool Teachers as Pillars of Progress

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Abstract

In the Indian context, preschool teachers play a very important role in shaping the nation's future by laying the foundational blocks of early education. These teachers are not merely providing stimulation activities as caregivers but are instrumental in fostering cognitive, linguistic, physical-motor, emotional, and social development for young children. Their influence extends beyond the classroom, impacting community dynamics and promoting inclusive education practices. By integrating cultural values and modern pedagogical techniques, preschool teachers help in nurturing well-rounded individuals who can contribute to the nation's progress. The implementation of policies such as the National Education Policy 2020 (NEP 2020), NCF-FS(2022) and initiatives like Nipun Bharat further emphasise the critical role of teachers in achieving foundational literacy and numeracy especially at the foundational stage. Therefore, recognising and empowering preschool teachers as nation builders is crucial for India's holistic development, ensuring that every child receives a strong educational foundation, irrespective of their socio-economic background.

Key words: Foundational years of learning, ECE, Preschool teachers, NCFFS.

1.0 Introduction

Importance of Early Childhood Education in India

Early childhood education (ECE) holds significant importance in India, serving as the foundation for lifelong learning and development. The formative years are crucial for children's holistic development. ECE helps in fostering skills such as critical thinking, problem-solving, and social interaction, which are fundamental for future academics and life success. In the Indian context, where diverse socio-economic backgrounds present unique challenges, ECE acts as an equaliser, offering every child a fair start. By providing quality early education, India aims to bridge the educational divide, promote

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gender equality, and reduce dropout rates, ultimately contributing to the nation's socio-economic development.

1.1 Role of Preschool Teachers in Nation-Building

Preschool teachers play an important role in shaping young brains during their most impressionable years i.e., during their first five years. They are not only responsible for teaching foundational literacy and numeracy but also for instilling age appropriate values, social skills, and a love for learning because these are also habit formation years. The teachers act as role models, fostering a stimulating environment that encourages children to explore and express themselves. By nurturing well-rounded, confident, and curious learners, they lay the groundwork for a knowledgeable and skilled population, very much required for the country's progress and innovation.

1.2 Overview of Relevant Policies and Initiatives

India has recognised the critical importance of ECE through various policies and initiatives aimed at enhancing the quality and accessibility. The NEP 2020 marks a significant shift, emphasising the foundational stage as an important component of the education system. NEP 2020 advocates for a play-based, activity-driven curriculum and underscores the need for trained and motivated teachers. The policy for the first time focused on continuum from preschool to class-2 and calling it as a foundational unit comprising of PS-1, PS-2, PS-3 and classes 1 and 2. Another notable initiative is Nipun Bharat, which focuses on ensuring that every child in India attains foundational literacy and numeracy by the end of Grade 2. This mission highlights the importance of ECE in achieving these foundational skills. Additionally, programmes like Integrated Child Development Services (ICDS) and the Mid-Day Meal Scheme complement these efforts by addressing nutritional and health needs, thereby supporting the overall well-being and development of children.

The National Curriculum Framework (NCF-FS), 2022 emphasises on providing a strong educational foundation for children aged 3 to 8 years. The document talks about experiential learning where children learn through active engagement using toys and concrete play that encourages curiosity and creativity. The framework promotes inclusive education, ensuring that all children, regardless of their background or abilities, have access to quality early education and supports the use of mother tongue or local language as the medium of instruction, while also encouraging multilingualism. Taking the vision of NEP, 2020 further, it stresses the importance of continuous professional development for all the teachers to effectively implement the developmentally appropriate curriculum across the foundational stage.

2.0 Setting the Stage for Foundational Years Learning

Preschool teachers are responsible to set the stage for all children so that they get prepared for future learning in a playful and joyful manner. They are instrumental in nurturing cognitive development, language and literacy development, physical well-

being& motor development, emotional and social and ethical development, and fostering creativity and curiosity through play and activity based learning.

Let's explore each of these roles in detail, including pedagogical practices and in-built assessment methods.

Mrs. Malik, a preschool teacher, noticed that one of her children, Ria, struggled with counting during foundational numeracy activities. Ria often hesitated and looked to her peers for guidance. To address this, Mrs. Malik incorporated counting games into their daily routine. She introduced a "Counting Treasure Hunt," where children had to find and count hidden objects around the classroom. Over time, Ria became more confident with numbers, proudly showing her ability to count to ten without assistance. Mrs. Malik used several methods. She observed how children interacted with counting games and noted their progress. She engaged children in activities that required counting, pattern recognition, and problem-solving. Mrs. Malik kept a portfolio for each child, recording their progress and any challenges they faced. During the "Counting Treasure Hunt," Mrs. Malik used a checklist to track each child's ability to count objects correctly. She also noted their engagement and enthusiasm, which provided insights into their confidence and interest in learning.

2.1. Preschool Teachers as Community Influencers

The teachers at the foundational stage particularly at the preschool and Balvatika level are not only educators but also the most important influencers within their communities. Their roles extend beyond the classroom, impacting community dynamics, promoting inclusive education practices, and engaging parents and families in the early educational journey. **They are the ones who also** document the children's progress in FLN, and note the significant improvements linked to parental involvement. They are responsible for offering inclusive education practices—where every child matters!

2.2. Promoting Inclusive Education Practices

Inclusive education fosters a sense of belonging among all children by ensuring that each child's unique needs and abilities are recognised and supported. This not only enhances their learning experience but also promotes empathy, cooperation, and respect among peers.

Children who learn in an inclusive environment are more likely to develop positive attitudes towards diversity, which can significantly reduce the likelihood of prejudice and discrimination later in life. Inclusive settings prepare children for the real world, where they will interact with people from various backgrounds and with different abilities. The teachers are responsible for creating a classroom environment that accommodates all children, including those with disabilities, language barriers, or from different cultural backgrounds. This involves adapting pedagogical practices, learning-teaching materials/ toys, and the play activities to meet the diverse needs of all children. Effective inclusive practices include using differentiated instruction, where teachers provide different pathways for children to learn the same content based on

their individual needs. Collaborating with special education professionals, speech therapists, and other specialists ensures that all children receive the appropriate interventions to support their development.

2.3 Engaging Parents and Families in the Foundational Education

A strong partnership between the preschool teacher and families ensures that children receive consistent support both at home and in the classroom. Some of the strategies for engaging parents and families are :-

1. Teachers can establish regular communication with parents and families through school newsletters, emails, and regular parent-teacher meetings. Sharing updates about the child's progress, classroom activities, and upcoming events helps keep parents informed and involved in their child's education.
2. Organising activities such as storytelling, craft days, or classroom volunteering opportunities can strengthen the bond between home and school. These activities not only allow parents to engage in their child's learning experience but also provide them with ideas on how to support learning at home.
3. Offering workshops or informational sessions on ECE, FLN and parenting strategies can empower parents with knowledge and tools to support their child's learning journey.
4. Involving parents in sharing their cultural traditions, languages, and values within the classroom fosters an inclusive environment and enriches the learning experience for all children.
5. The teachers can provide parents with simple, engaging activities that can be done at home to reinforce classroom learning. This might include sending home reading materials, suggesting simple games, or providing tips on how to incorporate FLN learning into everyday routines.

3.0. Integrating Cultural Values and Age Appropriate Pedagogical Practices

As India is a land of rich cultural diversity, embedding cultural values at the foundational stage of education ensures that children develop a strong connection to their heritage while also being prepared for the today's 21st century skills. The age appropriate values at this stage, such as respect for elders, sharing and caring, friendship, working in groups, waiting for one's own turn, kindness towards living beings are integral to the Indian way of life.

Stories from Indian epics like the Ramayana and Mahabharata, or folk tales from different regions, can teach children moral values, bravery, and the importance of righteousness. Similarly, traditional games like "Kabaddi" and "Kho-Kho" not only promote physical fitness but also teamwork and strategic thinking. At the same time, age and developmentally appropriate pedagogy refers to such practices that are mapped to the developmental stages and learning needs of young children. This involves

recognising the unique needs of children at different ages and adapting pedagogical practices accordingly. For children in the foundational stages (ages 3-8), learning through play and exploration is crucial. Pedagogical practices should focus on experiential learning, where children learn by doing, experimenting, and interacting with their surroundings.

Let's see some of the Examples:

1. In an Indian context, stories from regional folklore where teachers can create short story episodes according to the age level of the young children and values and FLN activities can be a part of it. These stories can also be told in the child's mother tongue, which supports language development and ensures that the child feels connected to their linguistic heritage.
2. Festivals are an integral part of Indian culture and offer a unique opportunity to introduce children to cultural values in a joyous and participatory manner. Celebrating festivals like Diwali, Eid, Christmas, and Pongal in the classroom can help children understand the significance of these events, the values they promote, and the diversity of Indian society.
3. Traditional Indian games like "posham pa bhai posham pa," "hop scotch" "Pithoo" and variety of ball games can be incorporated into physical development activities to promote not just physical-motor development but also cultural awareness.
4. Art and craft activities are excellent for developing creativity and fine motor skills in young children. Helping children create using materials from nature and other low cost/no-cost materials can enhance children's appreciation for art and provide them a platform for self-expression and extend their imagination.

3.1 Blending Traditional and 21st century Skills Right from the beginning

3.1.1 Innovative Storytelling: Modern pedagogy using media and e-stories along with variety of storytelling methods can enhance children's FLN skills. For example, animated versions of traditional stories can be developed and shown in classrooms, making them more engaging. Teachers can use digital platforms to narrate stories with visual and auditory elements, catering to different learning styles of young children. Modern pedagogical tools, such as language learning apps and interactive e-books, can support this approach, ensuring that children are proficient in both their mother tongue and a global language.

3.1.2 Interactive Learning through Festivals: Traditional festivals provide a wealth of learning opportunities. Today's pedagogy can turn these celebrations into interactive learning experiences. For example, during Diwali, teachers can organise activities where children create rangoli collage patterns using digital design tools(age and developmentally appropriate), or during Holi, they can learn about colours through scientific experiments—like colour mixing, how the water flows, water is colourless and

by mixing any colour water that colour and so on. This blend of tradition and technology makes learning fun and meaningful.

3.1.3 Theme based and Project-Based Learning: This is a technique that can easily incorporate traditional knowledge. For example, a project on "animals around us" can involve talking about animals, visiting local farms, and using technology to demonstrate certain activities and presentations. This encourages critical thinking, probing skills where young children research together with teachers and gain good understanding through practical experiences and hands-on, and at the same time it connects children to their cultural roots.

4.0. Recent Policy Frameworks Supporting Preschool Teachers and ECE

The policy emphasises CPD for ECCE teachers, proposing a rigorous teacher education and training program. It further advocates for the use of play-based and activity-based pedagogy in preschool education. This approach aligns with traditional Indian learning methods and modern pedagogical techniques, ensuring an engaging and effective learning environment (NEP 2020, p. 9). The policy introduces formative assessment methods to track children's development and learning progress. It encourages preschool teachers to use observational and developmental assessments rather than rote memorisation (NEP 2020, p. 10).

Launched in 2021, the Nipun Bharat initiative aims to ensure FLN for children by the end of Grade 2. The initiative targets the universal acquisition of FLN skills, emphasising the role of preschool teachers in laying a strong foundation during the early years (Nipun Bharat, p. 3). At the same time, the document outlines a comprehensive monitoring and assessment framework to track children's progress in FLN. Preschool teachers are encouraged to use formative and diagnostic assessments to identify learning gaps and address them promptly (Nipun Bharat, p. 10).

The NCFFS 2022 is a comprehensive guideline designed to shape the ECE programme in India. It emphasises the significance of the foundational years (ages 3-8) and provides a structured approach to early education. NCFFS 2022 offers several key elements that support preschool teachers and others working at the foundational stage. It emphasises the integration of various domains of development and learning, ensuring a balanced approach that nurtures well-rounded individuals. It also provides detailed guidelines on creating a balanced curriculum that includes play, exploration, and experiential learning. As an outcome of NEP 2020 and NCFFS, 2022 there are learning-teaching materials that come in the form of Jaadui Pitara (a box containing resource materials) that help promote holistic development, making it easier for teachers to implement these play

5.0. Challenges Faced by Preschool Teachers

5.1 Challenges Faced by Preschool Teachers and Grade 1 and 2 Teachers in Maintaining Educational Continuity

ECE, encompassing preschool and the early primary grades, is critical for laying a strong foundation for lifelong learning. However, teachers at these levels face numerous

challenges in maintaining a smooth educational continuum from preschool through the early primary grades. Key challenges include socio-economic barriers, resource constraints, and the need for professional development and support.

5.1.1 Socio-Economic Barriers

Teachers often work with children from diverse socio-economic backgrounds, which can lead to disparities in access to learning teaching materials and resources. Children from low-income families may lack access to activity books, educational toys/play materials, and even basic necessities like nutrition and healthcare, which can impact their learning and development.

Language and Cultural Differences: Children may come to school speaking different languages and having varied cultural experiences. This diversity can make it challenging for teachers to create an inclusive classroom environment that respects and integrates all backgrounds while ensuring effective communication and learning for young children.

Parental Involvement: Socio-economic factors such as parents' work schedules, their educational background, and lack of awareness about the importance of early education can limit their participation in their children's schooling.

5.1.2 Resource Constraints

Insufficient Educational Materials: Many preschools, Balvatika and early primary grades especially in underfunded areas, lack adequate educational materials and resources. This includes textbooks, learning aids, technology, and classroom supplies. Resource constraints can limit the variety and quality of educational experiences that teachers can provide.

Inadequate Infrastructure: Poor infrastructure, such as overcrowded classrooms, lack of proper sanitation facilities, and insufficient space for play and physical activities, can affect teaching and learning. Inadequate infrastructure not only affects the physical comfort and safety of children but also limits the opportunities for interactive and experiential learning.

Continuous Training and Development: Early childhood education is such a field that requires ongoing professional development. Teachers need regular training to stay updated with the latest pedagogical strategies, child development research, and classroom management techniques. However, access to high-quality professional development opportunities is often limited, particularly in rural and underserved areas.

Support Systems: Teachers need strong support systems, including mentorship, collaboration with colleagues, and administrative backing, to effectively address the challenges they face. Lack of support can lead to burnout, reduced job satisfaction, and high turnover rates, which negatively impact the continuity and quality of foundational stage education.

Recognition and Compensation: Early childhood teachers often face challenges related to recognition and compensation. Despite the critical role they play, they may receive lower salaries and less recognition compared to their counterparts in higher grades. This disparity can affect their motivation and commitment to the profession.

6.0. Empowering Preschool Teachers

Empowering preschool teachers is crucial and includes providing robust training and development programmes, implementing policy recommendations for better support and recognition, and building a collaborative educational ecosystem. NEP 2020 recognises the importance of CPD for teachers to stay updated with the latest pedagogical approaches and to address the diverse needs of learners. The policy highlights that professional development should be an integral part of a teacher's career trajectory, focusing on practical and on-the-job training. It includes workshops on innovative teaching techniques, use of educational technology, and engaging learning activities. There must be specialised training on inclusive teaching practices to cater to diverse learning needs, including children with disabilities and those from varied socio-economic backgrounds.

6.1 Policy Recommendations for Better Support and Recognition

NEP 2020 stresses the need to improve the status of the teaching profession through better compensation, career progression opportunities, and recognition of their efforts. It must be ensured that preschool teachers receive competitive salaries that reflect their qualifications and experience. There must be some professional recognition by establishing awards and recognition programs at the local level, state level, and national levels to honour exemplary and passionate teachers. Provision for opportunities for career advancement through leadership roles and specialised positions needs to be created across the foundational stage teachers. There should be **supportive work environment where it is ensured** with manageable class sizes and adequate teaching resources to reduce teacher stress and burnout.

6.2 Community and Parental Engagement:

The strategies to involve parents across the FS need a due attention to discuss children's progress and involve parents in their learning journey and also to facilitate better communication and collaboration between the school and families. Community members can be oriented and engaged in school activities, such as storytelling sessions, cultural events, and local theme based projects. There is a need to form **collaborative networks** of schools and teachers to share resources, best practices, and professional development opportunities.

7.0. Conclusion

Preschool teachers play an important and interesting role and their influence extends far beyond the classroom, laying the foundational skills and values that guide young minds. Their efforts directly impact the quality of early education and the overall progress of society. In the evolving field of early childhood education especially after NEP 2020,

preschool teachers serve as essential connectors between classrooms and communities. By creating strong links between the classroom and the community, these teachers foster an environment where children flourish, families actively participate, and communities are strengthened. Their dedication to embracing diversity, integrating cultural values, and supporting holistic development ensures that the next generation grows up with a strong sense of identity and direction.

The future of ECE in India holds immense potential. With a concerted effort to elevate the status and support of preschool teachers, we can create an environment where every child receives high-quality education from the very beginning.

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Role of a Teacher in Nation Building

Priya Johry¹

Abstract

"Guru Brahma, Guru Vishnu, Guru Devo Maheshwara, Guru Sakshat Para Brahma, Tasmai Sri Gurave Namah." This shloka acknowledges the Guru as a divine presence, embodying the roles of the creator, preserver, and destroyer, and as the direct manifestation of the ultimate reality. In the Vedas, the Guru's role is regarded as even higher than that of God.

Today, the importance of teachers remains indispensable for maintaining their respected status in society and preserving the nation's civilization and culture. In the modern era, teaching demands not only educational expertise but also the ability to understand children and adapt to changing circumstances, with the necessary training to do so. Teachers play a vital role in nurturing students' qualities while also refining their intellectual and practical skills. Ultimately, the development of a nation is closely tied to the dignity and status of its teachers.

The Kothari Commission has emphasized that, among the various factors influencing educational standards and national development, the qualities and competencies of teachers are the most significant. This research article examines the role of teachers in nation-building, the evolving responsibilities of educators in contemporary education, the challenges faced by teachers in India, and the future of teacher education in the country. It also highlights recent efforts to uplift and support teachers, ensuring they are well-equipped to meet the demands of modern education.

Keywords: Teacher Education, New Education Policy 2020

Introduction

It is undeniable that education is fundamental to nation-building. The quality of an education system, its policies, and teaching methods shape the development of children, who in turn influence society. The character of a society ultimately defines a nation's identity. Teachers are the backbone of the education system and the architects of society. Their behaviour, values, character, appearance, and knowledge first impact

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their students, then extend to society, and ultimately shape the entire nation, leaving a lasting influence over time.

A teacher is the creator of a civilized and peaceful nation. The role of a teacher extends beyond imparting academic knowledge; it also involves making students aware of their social responsibilities and preparing them to contribute to nation-building. Such students become the foundation for the nation's future development, marking the teacher's greatest contribution to national service.

Teachers play a crucial role in the mental development of students. A skilled teacher can cultivate a sense of nationalism in students through their teaching style. If a teacher is committed, their students can grow to become exemplary citizens. Many great individuals, both in India and around the world, owe their achievements to the education and guidance provided by their mentors.

Teachers have the unique ability to instill a sense of nationalism in students, fostering patriotism and the qualities of ideal citizenship, which in turn strengthen the spirit of national unity. The independent existence of any nation depends on its ideal citizens, as every good citizen contributes to the nation's growth and progress. By shaping young minds into responsible citizens, teachers fulfill their crucial role in nation-building. For the comprehensive development of a nation, the role of teachers in preparing its future citizens is paramount.

The Role of Teachers in Nation Building

Teachers have a vital role in the process of nation-building since they not only provide information but also help students in cultivating their personalities, ethics, character, and social duties. They provide crucial expertise for achieving success in many professional and technological domains, which are vital for a nation's progress. It is imperative for teachers to educate children about the importance of respecting traditional customs and values, since this is essential for maintaining the unity and integrity of the country. Teachers have the capacity to influence societal transformation by comprehending the challenges and obstacles encountered by society and promoting constructive involvement in social restructuring. They are seen as individuals who possess leadership skills and serve as motivators, empowering pupils with the necessary traits and determination to accomplish their objectives. A proficient and motivated generation plays a crucial role in the economic success of the nation. Furthermore, educators encourage students to assume moral and social obligations, equipping them to become conscientious individuals who contribute to the improvement of society as a collective entity. Teachers have a crucial role in shaping the destiny of a country and are not only instructors. Their actions and impact are vital for the progress of society and the whole nation.

Redefining the Teacher's Role in Contemporary Education

The emergence of the Internet and mobile phones has greatly enhanced access to information. This development has expanded the role of teachers beyond simply

conveying knowledge. They are now also responsible for teaching students how to communicate information effectively, understand its context, and develop critical thinking skills. Society is undergoing rapid changes in economic, social, and cultural spheres, and education has had to adapt accordingly. Teachers today must be aware of contemporary societal challenges, technological advancements, and evolving educational standards.

Recognizing the significant role teachers play in shaping India's future, the National Education Policy (NEP) 2020 emphasizes their empowerment as crucial for national development. NEP 2020 acknowledges that teacher preparation requires a multidisciplinary approach, encompassing diverse perspectives, the formation of values and dispositions, and hands-on practice under skilled mentors. Teachers are encouraged to integrate modern educational innovations with India's cultural beliefs, languages, and traditions.

Fostering excellence and creativity in education primarily relies on experienced teachers who combine practical knowledge with effective instructional strategies and evaluation methods. The goal is to build a motivated and competent faculty in higher education institutions (HEIs) to enhance the teaching profession, institutional growth, and student development. Achieving educational objectives requires a supportive environment that includes teacher recruitment, professional development, career advancement, retention, autonomy, and recognition of outstanding teaching and research.

Efforts to Elevate Teacher Quality in New India

The Indian government implemented the following programs to improve the quality of teacher education:

1. Integrated Teacher Education Programme (ITEP)

The four-year Integrated Teacher Education Program (ITEP) aims to produce enthusiastic, motivated, qualified, professionally trained, and well-equipped teachers capable of designing and implementing developmentally appropriate learning experiences for students at various stages of school education. The ITEP seeks to provide the highest quality of instruction in pedagogy, content, values, and practical skills for future teachers. By 2030, the four-year integrated B.Ed. offered by multidisciplinary higher education institutions (HEIs) will become the minimum qualification required for school teachers. This program will be a dual-major, holistic Bachelor's degree, combining education with a specialized subject, such as a language, history, music, mathematics, computer science, chemistry, economics, art, physical education, and more.

2. National Mission for Mentoring (NMM)

The National Mission for Mentoring (NMM) is designed to provide essential support and guidance to dedicated teachers, fostering their professional growth and empowering them to establish a strong educational foundation for students. This mission will operate

through a specialized digital platform, where teachers can access high-quality mentoring sessions led by experienced professionals. These sessions will be tailored to meet the diverse needs of learners with varying abilities.

3. The National Professional Standards for Teachers (NPST)

It focuses on enhancing teachers' personal and professional development by providing them with an understanding of performance expectations and the actions needed to improve. The NPST Guiding Document ensures that all students at various levels and stages of school education are taught by passionate, motivated, highly qualified, professionally trained, and well-equipped teachers. It serves as a statement of quality and defines the competencies required for teachers at different stages and levels. Its implementation requires the collective efforts of the Centre, States, Union Territories (UTs), Higher Education Institutions (HEIs), regulatory agencies, and all other relevant stakeholders. The NPST Guiding Document.

4. Pandit Madan Mohan Malviya National Mission on Teachers and Teaching

The Scheme of the Pandit Madan Mohan Malviya National Mission on Teachers and Teaching is the culmination of the Government of India's efforts to launch a comprehensive umbrella scheme aimed at improving the quality of education at all levels by infusing quality and excellence into our teachers and teaching practices. The Malaviya Mission will align capacity building with the credit system to support educators' career advancement. This comprehensive program will equip teachers with the necessary skills and knowledge to excel in their roles, ultimately benefiting the students they serve.

These efforts reflect a concerted initiative to enhance the quality of education in India by empowering and supporting teachers, ensuring they are prepared to meet the challenges of a rapidly evolving educational landscape.

Major Challenges for Educators in the Indian Setting

Educators in India face numerous challenges that impact their ability to provide quality education. Some of the major challenges include:

- **Inadequate Compensation:** Many educators experience a reduced standard of living because they do not receive compensation and benefits commensurate with their level of education and experience. This financial strain can make it difficult for educators to meet their financial obligations and maintain their standard of living. Consequently, some educators may feel unappreciated, leading to lower job satisfaction and performance in the classroom.
- **Limited Funding:** Insufficient funding often prevents schools from acquiring essential resources such as books and instructional materials, diminishing the quality of education that students receive. This lack of funding also places pressure on teachers to use their own money to supplement classroom resources, further stretching their already limited budgets.

- **Recruitment and Promotion Barriers:** Lengthy and challenging hiring and promotion processes within the educational system impede teachers' professional development. This often results in talented educators becoming frustrated and seeking opportunities elsewhere, leaving schools with a shortage of experienced and qualified staff. Without effective recruitment and promotion processes, it is difficult for schools to attract and retain the best teachers, further exacerbating the quality of education provided to students.
- **Balancing Duties:** Teachers often have to juggle classroom and administrative responsibilities due to their demanding workload. This lack of focus can ultimately impact student learning and achievement, as teachers may not have the time or resources to fully dedicate themselves to their students.
- **Classroom Management:** Maintaining student control and keeping them on task can be challenging, especially in schools with large student populations or a lack of support staff. This can lead to disruptions in the learning process and hinder student progress. Teachers may also struggle to address behavioral issues effectively, impacting the overall classroom environment.
- **Lack of Professional Development:** Many educators fall behind the times due to a lack of ongoing professional development in innovative pedagogical practices. Without this training, teachers may struggle to engage students effectively and adapt to new technologies in the classroom.
- **Inadequate Support:** Insufficient support and resources can leave teachers feeling overwhelmed by the demands of modern education, hindering their ability to cope with classroom challenges.
- **The future of teacher education in developed India**
- The future of teacher education in a developed India may be shaped by the following key factors:
 - **Digital and Technological Integration:** The widespread use of digital technologies, such as e-learning platforms and smart classrooms, will enhance the effectiveness and accessibility of teacher education. Additionally, integrating technological tools like virtual reality and artificial intelligence can enrich the learning experience for both teachers and students. This shift towards digital learning will require educators to adapt and continuously update their skills to remain relevant in the rapidly evolving technological landscape. Overall, embracing digital advancements in teacher education will play a crucial role in shaping the future of education in a developed India.
 - **Targeted Training Programs:** Specific training programs will be established in response to various educational demands and regional needs, improving educators' qualifications and expertise. These programs will focus on equipping teachers with the necessary tools and knowledge to effectively integrate technology into their

teaching methods and utilize artificial intelligence to enhance the learning experience for their students. By continuously updating their skills and staying ahead of the curve, teachers will be better prepared to meet the changing needs of students in a digital age. Ultimately, this shift toward embracing digital advancements in education will create a more dynamic and engaging learning environment for students, leading to improved outcomes and success in the classroom.

- **Global Cooperation:** Collaboration with international standards and experiences will expand, resulting in higher-quality teacher education and the implementation of innovative ideas. This cooperation will also foster a more diverse and inclusive teaching workforce, as educators from different countries share their perspectives and approaches. By working together on a global scale, we can address common challenges in education and develop solutions that benefit all students. Ultimately, global cooperation in teacher education will help create a more interconnected and equitable world.
- **Professional Development:** Regular professional development and training programs will help educators keep their knowledge and skills up to date. This will ensure that teachers are equipped with the necessary tools to effectively integrate technology into their teaching practices, ultimately benefiting students in their learning journey. By fostering global cooperation and providing ongoing professional development opportunities, educators will be better prepared to meet the evolving needs of students in a digital age, leading to improved academic outcomes and success in the classroom. The combination of embracing digital advancements, collaborating on a global scale, and investing in professional development will contribute to creating a more dynamic and engaging learning environment that sets students up for success in the future.
- **High-Quality Trainers:** The certification and quality of teacher training institutes will be prioritized to enhance the quality of trainers. This will ensure that educators possess the necessary skills and knowledge to effectively integrate technology into their teaching practices. By investing in high-quality trainers, teachers will be equipped with the tools they need to adapt to the changing educational landscape and provide students with a more personalized and engaging learning experience. Ultimately, this focus on professional development and trainer certification will lead to better academic outcomes and overall success for both teachers and students.
- **Adaptive Policies and Reforms:** The government and other institutions will develop new policies and plans to enhance the education system, emphasizing the importance of teacher education. These policies will focus on promoting continuous professional development for teachers and implementing innovative teaching methods and technologies in the classroom. By creating a supportive and adaptive environment for educators, the education system can evolve to meet the needs of students in a rapidly changing world. This focus on adaptive policies and reforms will

ultimately lead to a more effective and successful education system that prepares students for future challenges.

- **Inclusive and Diverse Education:** A range of teaching approaches and practices will be employed to meet the needs of diverse students. This includes providing resources and support for students with disabilities, English language learners, and those from varied cultural backgrounds. By embracing inclusivity and diversity in education, schools can create a more equitable and enriching learning environment for all students. This approach not only helps students feel valued and supported but also prepares them to thrive in a global society where diversity is celebrated. Ultimately, an inclusive and diverse education system fosters empathy, understanding, and collaboration among students, paving the way for a more harmonious and interconnected world.

Together, these factors will contribute to significant advancements in teacher education and enhance India's education system. By ensuring that teachers are well-trained and equipped to cater to the diverse needs of students, the education system will become more inclusive and effective. This will ultimately lead to a more skilled workforce and a brighter future for India.

Competencies for a New Indian Teacher in the 21st Century: Implications for National Education Policy (NEP) 2020

The New Education Policy (NEP) 2020 is steering India towards an all-round, multi-dimensional education system. Teachers will be required to provide not only knowledge but also practical and social skills. India needs 21st-century educators who can teach using digital media. They must be well-versed in managing digital classrooms and proficient in various teaching tools and applications. Among these requirements, the most critical is their ability to learn and implement new processes that accompany the shift in online teaching methodologies and assessment systems.

NEP 2020 advocates for project-based and inquiry-based learning, which significantly transforms teaching methodologies. Teachers are expected to actively foster a child-centered learning environment that promotes students' active involvement in the teaching-learning process. These educators will also bear the responsibility for the physical, emotional, and psychological development of children, in line with the principles of holistic education.

The NEP 2020 emphasizes vocational and skill-based education. Teachers will need to equip students with skills such as problem-solving, creative thinking, and innovation, enabling children to work effectively. Additionally, they must adopt inclusive teaching practices aimed at creating equal opportunities for children from diverse cultural and social backgrounds. Teachers should also be trained to support children with special needs, as NEP 2020 emphasizes inclusion and equity, promoting inclusive education for all.

The policy proposes using a mother tongue or regional language for most of the early years of schooling. A suitable pedagogy involves learning in the mother tongue while simultaneously fostering multilingualism. Teachers are expected to update their knowledge and skills in line with changing trends and innovations in education. Flexibility and adaptability are essential to navigate the swift changes and challenges in modern education.

In fact, teachers serve as a bridge between school and society, encouraging cooperation and establishing a stronger link between education and the broader community. Active involvement in the community promotes an integrated learning environment and encourages collaboration. There is a compelling need within NEP 2020 to cultivate an attitude of holistic and inclusive teaching.

Along with all these responsibilities, teachers must also be proficient in digital technologies, ethical education, and skill-based learning while continually contributing to the development of an inclusive learning environment. Today's educators should evolve from being guides and mentors to active facilitators of learning, prepared to meet the diverse needs of students and society, as envisioned in NEP 2020.

Conclusion

All commissions and reports since India's independence have made recommendations for reforms in teacher education; however, many of these recommendations have not been implemented due to various challenges and obstacles, including inadequate funding, a lack of political will, bureaucratic inertia, and a shortage of qualified teacher educators. The future of students in any country hinges on the quality of its teachers, a fact supported by both scientific research and public opinion. Unfortunately, the quality of teachers in both school and higher education in India remains questionable. In such a context, it is imperative that we not only encourage our best students to become teachers but also provide them with appropriate training.

The recently published National Education Policy (NEP) 2020 emphasizes that "Teachers need to be motivated and empowered to ensure the best possible future for our students and our nation." While all the improvements proposed by NEP 2020 in the area of teacher education are positive, history has shown that effective policies often falter during the implementation phase or become stagnant. The future of our nation relies on teacher education; therefore, we cannot allow this to happen.

It is hoped that, in light of the changes proposed in the NEP, policymakers will explicitly articulate the short-, medium-, and long-term objectives for implementing the Teacher Education Policy, along with the means to achieve these goals. The development and publication of this implementation plan will also demonstrate that the government's "policy" and "intention" in the area of teacher education are aligned. It is crucial that this understanding is not overlooked in the execution of NEP 2020. Improving the teacher education system is essential for enhancing any nation's educational system.

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Globalization of Education and Teacher Education within Vision of NEP 2020

Mohsin Ali Khan¹

Abstract

Education is undergoing constant changes at all levels under the effects of technological advancements and globalization. The hope of any country often lies within the teacher's ability to compete in a global market. Teachers can maximize the opportunities to enhance effectiveness of their teaching from local to global by networking through educational technology and innovative curriculum and teaching techniques. Designing curriculum and supportive resources play a significant role in reforming education, training and finally teacher education. National Council of Teacher Education (NCTE 1993) identified teaching competencies for making the teachers professionally competent, but more importantly the present curriculum of teacher education needs to be modernized as per the changing scenario and globalized needs of the society. Digital and online learning with Input of artificial intelligence (AI) have made the teaching learning easy, interesting and also accessible to the world. The UN stresses on the present education, should be based on four pillars of learning viz.; Learning to know, Learning to do, Learning to live together and Learning to be; for achieving the sustainable development goals (UNSGD'S, 2015). The task is big and has many challenges in implementing new ideas and technological inputs in teacher education, but the new education policy NEP-2020, can play a vital role in achieving the desired goals of modern education, keeping in mind the global standards and opportunities in related fields.

Keywords: Globalization, Pillars of Learning, Teaching Competencies, NEP-2020, SGD'S-2015

Introduction

"Education is the most powerful weapon which you can use to change the world." – 'Nelson Mandela'

Mr. Mandela was unquestionably correct with that quote. However, the change of the world can be a weapon to educate the world as well. Education is becoming a lifelong

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learning and training process, developing manageable skills and knowledge that can be applied to competitive markets where knowledge and information are being traded as a product. Our society is changing fast and with the technological advancement of time, there has been an explosion of expectations in every walk of life including education. The role and responsibilities of the teacher are infinite and limitless. In general, teachers does not mean to teach students the specific syllabus and impart knowledge about the specific curriculum but specifically he/she is; a mentor, a psychoanalyst, a sponsor of happiness, and an architect of warm personal relationships among the students or can say overall personality development. Globalization or internationalization is simply the marshaling of different races across the globe to interact with each other, understanding various needs and doing business.

National Education Policy (NEP-2020) recommends excess of reforms at all levels of school education which seek to ensure quality of schools, transformation of the curriculum including pedagogy with 5+3+3+4 design covering children in the age group 3-18 years, reforms in the current exams and assessment system, strengthening of teacher training for quality education to meet the global challenges of 21st century.

Globalization of Education



Education is undergoing constant changes under the effects of globalization or internationalization. Globalization and technological advancements are beneficial for the people, society and country; increasing access to the world and subsequently teacher education should also reflect on this global outlook.

A globalized teacher requires some specialized modern training with extra knowledge and skills of digital technology to meet the global challenges in education. It increases understanding of the economic, cultural, political and environmental influences which shape our lives to cope up new demands of society. Global education helps students to develop the skills, attitudes and values which enable people to work together to bring about change and take control of their own lives.

The globalization of education has become one of the key themes of educational policy and planning in the 1990s and the integration of worldwide capital and labor markets; educators are being forced to respond to a new set of challenges in our education system. The universities are providing a high quality education, in spite of its focus on globalization and cross-cultural communication. The hope of any country often lies within teachers' ability to compete in a global market, where industry based economies are giving way to knowledge based industries.

Global education gives students the opportunity to have an active participation in making the world a better place. According to UNESCO, technology progressed in making the world interconnected but inequality, poverty and human rights violations remain. Students taught through a global education approach and/ or through a global education system who consider themselves as global citizens are equipped with the mindset to help address social issues and will choose careers to find solutions for social issues.

Global Teachers in 21st Century

The globalization of higher education including teacher education can be linked to various changes in the international system of education where; ICT, e-learning, Blended, Cooperative learning, Open and Distance learning are some new trends in education of the present era. Following parameters are mandatory for global education;

Evolving Technology

Over the last few decades, technology has seen the biggest facelift. Computers have been minimized into handheld devices (tablet computers, touch computers) and android technology has changed the ICT world. Zebra TC52 is a mid-range Android-based device released in 2018 and runs on the Android 8.1 operating system. CK65 is a rugged handheld computer that runs on the Android operating system and Honeywell's Mobility Edge platform.

The focus of a 21st century teacher is on students by developing; higher order thinking skills, effective communication, collaboration, leadership, and other life skills. We expect a great deal of new teachers with the increasing interconnectedness of our world. New teachers are being called upon to meet and support the growth of globally minded students. This led us to engage directly with educators and their teachers about what global competence means for them and whether the process for credentialing new teachers is reflective of the realities of today's classrooms. Some prerequisites for a global teacher are as follows;

Global Competence

"Global competence in teachers is a set of essential knowledge, critical dispositions, and performances that help foster development of learners' global competence. A globally competent teacher has knowledge of the world, critical global issues, their local impact, and the cultural backgrounds of learners; manifests intercultural sensitivity and acceptance of difference; incorporates this knowledge and sensitivity into classroom practice; and, develops the skills to foster these dispositions, knowledge, and performances in learners. It is time to associate more deeply with colleges of education and alternative training routes to emphasize this reality as they prepare tomorrow's teachers.

Teachers can maximize the opportunities to enhance effectiveness of their teaching from local and global networking and exposure through internet, web-based teaching,

video-conferencing, cross-cultural sharing, and different types of interactive and multimedia materials.

Global competence plays an important role in the life of a teacher being summarized as follows;

- Understanding one's own cultural identity and its influence on personal dispositions and classroom practice
- Knowing and integrating global dimensions within the disciplines one teaches,
- Engaging students in learning about the world and in exploring their place in it,
- Using real-life global examples, materials, and resources when considering local, national, and human issues,
- Valuing the input of culturally and linguistically diverse learners, families, and colleagues, and modeling cultural sensitivity,
- Creating environments that encourage positive cross-cultural interaction,
- Modeling social responsibility in local and global contexts,
- Helping learners find appropriate actions to improve local and global conditions,
- Assessing learners' global competence and providing growth opportunities based on their levels of development,
- Advocating for global education and social responsibility.

Restructuring Teacher Education as Per Guidelines of NEP2020

National Council for Teacher Education is a statutory body of Indian government set up in national capital Delhi under the NCTE Act, 1993 to control and coordinate all teacher training programs under teacher education.

Teacher Education is categorized into four categories on the basis of the structure and level of education system in our country; pre-primary, primary, secondary, higher secondary; keeping in view the requirements of each stage of education to structure a teacher education programme.

Presently NCTE offers following main courses prepared as per the NCERT and NEP-1986, 2020 requirements for professionalization of the teaching under preservice and in-service teacher's training;

- (a) One year professional Certificate course (NTT) for Pre Primary or Nursery education with minimum qualifications of 10th/12th standard.
- (b) Two years of professional Diploma course (ETE, BTC, JBT.) for Elementary or Primary education with minimum qualifications of 12th / graduation.
- (c) Two years Degree course (B.Ed) four semesters for Secondary education with minimum qualifications of Graduation/ Post Graduation.
- (d) Four years Integrated graduate Degree course (B.El.Ed, B.A.B.Ed, B.Sc.B.EdB.Com.B.Ed) for Secondary education with minimum qualifications of Higher/senior secondary or 12th standard.

- (e) Two years Post graduate degree course (M.A., M.Ed) four semesters for Secondary education of teacher education with minimum qualifications of Graduation/B.Ed degree.

According to the new education policy, the aims of teacher education should be; to develop teachers as leaders and citizens who will creatively contribute to the formation of a global society with multiple developments in technological, economical, social, political, cultural, and learning aspects. The rise of a global society, driven by technology and communication developments are shaping children (the future citizens of the world) into 'global citizens', intelligent people with a broad range of skills and knowledge to apply to a competitive, information based society.

Some key criteria for reforming teacher education in present era are summarized as under;

- ❖ The Regulatory system shall be empowered to take stringent action against substandard and dysfunctional teacher education institutions (TEIs) that do not meet basic educational criteria, after giving one year for remedy of the breaches.
- ❖ In order to improve and reach the levels of integrity and credibility NEP 2020 requires restoring the prestige of the teaching profession.
- ❖ By 2030, only educationally sound, multidisciplinary, and integrated teacher education programmes shall be in strength.
- ❖ All stand-alone teacher education institutions (TEIs) will be required to convert to multidisciplinary institutions within ten years, since they will have to offer the 4-year integrated course in teacher preparation programme.
- ❖ Most of the institutions don't have qualified staff to teach and other basic facilities. Many teacher education institutions do not follow the guidelines regarding the curriculum of teacher education programmes for theory and practical courses.
- ❖ Realizing the need for regulation to insure the quality internal; Internal Quality Assurance Cell (IQAC) and external regulatory bodies like; NCTE, UGC, NAAC, etc. are set up to establish quality affiliation norms and supervisory norms for the teacher education institutions.
- ❖ Strict actions should be taken by de-affiliation along with heavy fines against the institutions that do not follow the norms and standards set by NCTE.

Global Challenges for Teacher Education

The main global challenges in teacher education based on following points;

- ❖ Curriculum design,
- ❖ Professional practice,
- ❖ Privatization in teacher education,

- ❖ ICT facilities in the teacher training colleges,
- ❖ Duration of course,
- ❖ Control and coordination of training colleges
- ❖ Admission criteria and process,
- ❖ Training schedule and duration,
- ❖ Attitude of trainee teacher,
- ❖ Competence of Teacher educator,
- ❖ Curriculum framework of teacher education,
- ❖ Government and private school recruitment procedure.

Reforms in Teacher Education Curriculum

Teacher education in the new millennium must have quality to meet the global standards. Teacher education programmes have the message of UNESCO's Learning (1996) education throughout life is based on the four pillars of learning viz.; Learning to know, Learning to do, Learning to live together and Learning to be, through its curricula at all levels of education. We should enhance various functions and activities of curriculum including-quality of courses, quality of teaching and the quality of curriculum with the following inputs;

- ❖ The curriculum should be relevant to the needs of the society,
- ❖ The curriculum should make pupils employable and self entrepreneurs,
- ❖ The curriculum should be relevant to socio-economic needs and up to date in contents,
- ❖ The curriculum of the teacher trainees should be made interdisciplinary to facilitate the acquisition of skills, competence and abilities,
- ❖ The curriculum should be able to develop competencies among the teachers with respect to classroom management & administration,
- ❖ The curriculum should be related to motivation and values.
- ❖ The curriculum should develop teaching competency by introducing various academic & co-curricular activities such as; seminars, workshops, discussions, brainstorming, symposiums, role playing, etc.
- ❖ The curriculum should be able to develop punctuality and dedication in a pupil teacher to discharge his/her duties efficiently,
- ❖ While constructing the curriculum proper attention has to be paid to; Art & Physical Education, Science & Technology. Art education will develop artistic attitude and aesthetic sensibility,

- ❖ The curriculum should have Yogic education along with health & physical education for improving both physical as well as mental health,
- ❖ The curriculum should have Science & Technology education, since it is the need of the present era.

Proper Selection of Prospective Teachers

It is generally believed that, the remainder of all professional seekers enters into the teaching profession and teaching is considered to be the least attractive, prestigious occupation amongst them all. The candidates should be selected for admission on the basis of their academic qualifications, scores of written tests and interviews. It would generate confidence in teacher trainees that they are not inferior to the candidates who have been selected through entrance test for medical, engineering and other professional courses. But it's unfortunate that most of the TEI'S are following the guidelines of NCTE only on papers rather than on ground, creating a lot of incompetent trained teachers tarnishing the future of the nation.

Integration of ICT

Today is the era of e-education, e-business and e-administration, the computer, T.V, Telephone, Mobile are the media of information and communication (ICT). The world has become interdependent and is turning gradually into a global village. Nowadays one has to think globally & act locally. There is a need to integrate technology in teacher education. ICT is a tool for Communication and presentation, bringing teachers, students & teacher educators on a common counter which will result in effective exchange of views, presentation of ideas and advice.

Each teacher needs to be proficient in the areas of technical competencies required for; chats, websites, databases, audio & video links, electronic conferences, e-mail, cloud computing etc. Learning to use computers & the internet is a relatively simple task, but mastering ICT use as an effective tool to improve teaching & learning is considered a difficult one. Teachers need training in computer literacy & how to use this in improving teaching and learning.

Teacher Education Institutions must introduce Information and Communication Technology (ICT) as one full paper in the B.Edprogramme. Moreover, well qualified and experienced technical staff should be appointed to take care of the ICT labs.

Upgrading in Evaluation System

The evaluation system for the assessment of teachers under training has many feeble features. We are not having a uniform system of evaluation for the whole country. Moreover, the present evaluation system in teachers lays over emphasis on development of scholastic aspects at the cost of non-scholastic aspects. The agencies like NCERT & CBSE have developed some evaluation criteria to make the evaluation more reliable and objective; we can adopt it for future strategy. The process of evaluation should be continuous, comprehensive & participative. This will provide

timely feedback to the student teacher for improving their performance. Thus, providing an opportunity to them for self evaluation and self improvement.

Upgrading In-Service Teacher Education

In-service teacher education fits broadly under the category of teacher professional development. In-service teacher education is usually formal in nature with courses or programs offered by universities or other institutes of learning. Unlike pre-service teacher education, in-service teacher education is specifically catered to practicing teachers with practical experiences in the classrooms. One of the objectives for in-service teacher education is to ensure currency of knowledge that teachers have in their field of practice.

Conclusion

Teachers are the hope of a nation, there are lots of challenges for every teacher in the present technological era; all the teachers have to acquire professional competencies, commitment and empowerment to perform multiple tasks inside and outside the classroom. Teachers can maximize the opportunities to enhance effectiveness of their teaching from local and global networking and exposure through internet, web-based teaching, video-conferencing, cross-cultural sharing, and different types of interactive and multimedia materials. Globalization and technological advancements are beneficial for the people, society and country; increasing access to the world and subsequently teacher education should also reflect on this global outlook. The international commission on education for the 21st century emphasized that; "Reforming teacher education is necessary in order to bring out the future teachers, precisely with those human and intellectual qualities that will facilitate a fresh approach to teaching to produce globalized citizens". Giving up ills and adopting the positives of others and spreading your own positives can abridge the most of globalization. There is an imperative need for a comprehensive framework in teacher training as per the recommendations of NEP-2020, raising the global standard of present teachers to meet the new challenges in the present era.

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Diversity and Education- A Case of Inclusion and Resistance in a Government School in New Delhi

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Abstract

In education, the term 'Inclusion' has transcended the assumption that inclusion is about students with special needs. Factors such as gender, caste, class, language, race, ethnicity, poverty, and other cultural factors, also contribute greatly to the act of marginalisation, stigmatisation and exclusion of children and staff in the school. This paper is an exploration into the processes that lead to segregation, marginalisation and stigmatisation of children within the classroom environment. The study uses two case studies, from a government school in New Delhi, to understand how, why and to what degree, does school design and teacher's role, play in the act of inclusion or exclusion of all students. Despite several policy interventions, the study through classroom observation, and interaction, shows how exclusion has been normalized as an everyday reality of classrooms. And yet, there are attempts to resist such exclusion by students, who see their future in formal education. The paper therefore urges policy makers and educationists to take cognizance of the varying factors, degrees, and levels, in which exclusion continues to happen in the everyday context of the classrooms.

Keywords: Inclusion, Diversity, Segregation, Marginalisation, Stigmatisation, Resistance.

Introduction

In education, inclusion has specifically been used as an 'idea that everyone should be able to use the same facilities, take part in the same activities, and enjoy the same experiences, including people who have a disability or other disadvantage (Cambridge University Press, n.d. In *Cambridge Dictionary*). The Right of Children to Free and Compulsory Education Act, 2009 (RTE ACT 2009), as well as The Right of Persons with

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Disabilities Act, 2016(RPWD ACT 2016), make provision for inclusive education. Yet, the dismal school drop-out rate is telling of the state of inclusion in schools¹.

The paper reflects on my experiences as a researcher in a government school in New Delhi. The paper lays thread bare the 'acts' of marginalisation and stigmatisation in classrooms. These acts lead to exclusion of students from the cohabited space and deeply inform student identity and sense of belongingness. Such acts are therefore met with acts of resistance not just by students who are marginalised, but by teachers who uphold the integrity of their profession and aspire for total inclusion to the effect of 'no child left behind' (Right to Education Act, 2009).

Research Objectives

- To examine two case studies to study the practice of inclusion.
- To explore the 'acts' of marginalisation and stigmatisation in schools, and consequent resistance from students for the same.
- To use classroom observation and interaction with teachers, students and a parent of a child with special needs, in order to bring out first-hand experiences of people engaged with a government school in present day Delhi.
- To study the overarching ideology of the school and argue to foster and nurture inclusivity of both, staff and students.

The Field-Site

The fieldwork site was a government senior-secondary school, managed by the Directorate of Education, Delhi. It was a co-educational school with classes up to the 12th standard. The school was affiliated to the Centre for Board of School Education (CBSE board).

The school, in its design, was inclusive, with three floors, two playgrounds: one big, another comparatively small, an auditorium, separate toilet facilities for boys and girls, a functional library, staffrooms, a computer lab, a separate art-room, and a ramp going all the way up to the third floor. Each class had an approximate student capacity of fifty-sixty children. The classes were well-equipped with desks, and chairs, to suit the needs of the learners, along with a separate desk for teachers.

Segregating Students as per Ability-Grouping

Under the 'Chunauti-2018 Plan', the Delhi government came up with an ability-grouping scheme to improve learning levels in schools. The scheme segregated students into different sections that ranged from A to D, where section A and B followed English as a medium of instruction and section C and D followed Hindi as a medium of instruction.

¹ As per the Unified Digital Information on School Education (UDISE) plus data 2021-22, there are about 265 million students enrolled in schools in India, but estimates suggest more than 3.5 million students to have dropped out after class 10. Reasons cited are non-attendance, challenges in understanding school instructions, lack of interest in studies, difficulty level of question papers, shortage of qualified staff, insufficient support of teachers, parents, school authorities, among others. For more information, refer Patnaik, India Today, Dec 28, 2023. <https://bestcolleges.indiatoday.in/news-detail/understanding-indias-dropout-problem>

Students were categorised on their ability to read, write and comprehend English or Hindi, and solve mathematical problems. These groups were known as, 'Pratibha', 'Nishtha' and 'Neo-Nishtha'; with the former comprising students who possessed grade-appropriate competencies, while the latter group had students who demonstrated only some age-appropriate competencies and reading ability. The reality of the ability-grouping system was, however, slightly different from how it had been conceptualised¹.

Even though the official language for instruction for sections A and B was English, the instructional language used by, almost all the teachers, was Hindi. The only difference between section A, B, and C, D, was the usage of textbooks in English for section A and B, while the Hindi version was used for section C and D. The entire classroom conversation, including discussion and debates, happened in Hindi, but the writing, in notebooks or during an exam, happened in the English language. Teachers claimed that students could better express themselves in Hindi. They themselves claimed to be more comfortable in Hindi. And had therefore taken permission from the principal to teach, even the English medium section, in Hindi. Teachers therefore had adopted a middle-path. In the English medium section, they read verbatim from the English NCERT textbook, and then translated it in Hindi, to help students make meaning. Teaching, therefore, in the English medium class, consisted of a lot of translation from English to Hindi.

The entire point of segregating students on the basis of language abilities was therefore rather ambiguous, and especially exhausting for the teachers². But for students, it instilled a sense of pride, if they belonged to section A and B. Boys notoriously addressed students belonging to section C and D, as ones from the "slow section". Teachers themselves resorted to statements like, "these students are slow, as compared to section A and B". Adjectives such as "slow" and "weak", were therefore continuously attached to students belonging to section C and D also known as Hindi medium section.

While the ability-grouping segregated students into different sections, the case studies below explain the ways students experienced stigmatisation, marginalisation and exclusion, in varying degrees, in classrooms.

Case Study I

Class-VIII-B,

Teacher's beliefs around Caste, Class and Learning Abilities

Mr. Singh was a senior teacher. He walked with the help of a crutch. An instance of my very first meeting with him laid the ground for our future conversations. It also gave a glimpse into the person, his belief systems, and his notions regarding students from

¹For more information on ability-based segregation in Delhi government schools, see, for instance, <https://www.outlookindia.com/magazine/story/india-news-a-for-aaplause-b-for-boos/301297#:~:text=Under%20a%20programme%20called%20Chunauti,of%20instruction%2C%20and%20in%20English.>

² Refer, Santhakumar, V. et. al. (2018). Political Change and Education Reforms: Lessons from Delhi Under Aam Aadmi Party. <https://azimpremjiuniversity.edu.in/lessons-from-practice-series/political-change-and-education-reforms>

“poor backgrounds”. The first day as I entered the class, students were sitting on the dari (carpet). So, I joined them. Mr. Singh was bewildered to know what I, a Chaturvedi¹(my caste name), was doing in the school- "Aap Chaturvedi ho? *Dhanya ho gaye apke darshan pake. Aajkal kahan milte hain? Aap yaha kya kar rahi?* Chaturvedi, Trivedi, Pandey to badi post pe hote hain"

As we conversed, he shared his views on the students. "*Ye Sarkar chahti hai ki in bachchon ko padhao, badhao. Sab ko muft ka khana, uniform, copy, de hai. Jitna input hai, utna output nahi ayega. Ye bachche kaha itna padh payenge?*" (This government wants to teach these children so that they can grow and prosper. Everyone has been given free food, uniform, and note books, output does not match the input. How will these children study so much?)

Mr. Singh also commented on students' carelessness of not being able to carry even their textbooks to class. He would call students to wash his empty tea cup. His belief regarding students, their culture and learning abilities, also reflected in his pedagogy which only followed a didactic approach.

Most of the times students were unmoved by rants made on them. Facing casteist remarks, corporal punishment, insults-were a routinised part of students' life at school. However, there were a few times when they did resist such acts of exclusion. They laughed hard after being hit by Mr. Singh. They even asked me to complain about Mr. Singh to a competent authority for his classlessness. They made faces at the teacher and asked me not to waste my time observing his class. Students would not be interested in the class. They were found arguing with each other, playing, or sharing jokes. At the same time, Mr. Singh would be unbothered and unaffected by the low participation of students in class.

Case Study II

Class- VI- A

Interaction and experience of a Specially-Abled Teacher with a Special Needs Child and his Mother.

Mr. Manish used to teach social science to class VI. He walked with a limp and carried a crutch to balance himself. It was because of his physical condition, that his classes were arranged on the ground floor. In case he needed to use the first floor, he had to climb the stairs. This was a little bewildering as the school had a huge ramp, going upto the third floor. On enquiring as to why he did not make use of the ramp facility in the school campus, Mr. Manish shared how, students, of all age-groups, kept the ramp busy by running up and down all day. Since this caused a lot of chaos leading to a few minor accidents on the ramp, the school authorities, were compelled to make the ramp inaccessible to students. As a result, Mr. Manish and a few other specially-abled

¹Chaturvedi, Pandey, Trivedi are Hindu caste names. While Trivedi denotes, 'knower of the three veda', Chaturvedi surname denotes 'knower of the four vedas', of the Hindu philosophy. Refer, Doniger, W. (2014). *On Hinduism*. Oxford University Press. USA. pp. 30.

students, who were in dire need of the ramp facility, had to bear the brunt of disciplinary measures taken for all students.

However, something that was more bewildering was his relationship with a student with special need. Aman (name changed) was a student who suffered from Spinal Muscular Atrophy¹. His mother used to carry him to school. Mr. Manish was cognizant of the child's needs. He even made special seating arrangement for the boy. He would try to create space for Aman to socialize with his classmates. He would understand Aman's hesitation in adjusting with the school and the classroom space and would often encourage him to speak (loudly) in the class.

Yet, many a times, Mr. Manish would lose patience when dealing with Aman. He would often complain about Aman's absenteeism from school, knowing well about his condition. Being crippled himself, he was often unable to keep up with the needs of the boy. Once, during a chaotic condition in the classroom, Aman was seen mustering up the courage to call the teacher out with all his might, but to no avail. Aman had to wait for a long time to even go to the toilet. The classroom strength just added to his woes. But Mr. Manish had a pragmatic approach to the situation. He felt that the boy and his mother would eventually learn their way around the school, if they had decided to be a part of it. For it was not up to Mr. Manish to spend individual time with anybody.

Unlike other private schools where Aman's mother sought admission but was denied, this government school had opened its door for Aman. The mother was overjoyed to be associated with this school. She was happy to see Aman socialize with his classmates, something she was wary about in the beginning. Her elder daughter went to an international school that attracts the affluent class. The mother associated with that class. But when Aman was denied admission in that same school, the mother tried for a government school, as a last resort. Aman's therapist had recommended that he socialise with his peers. However, the mother was sure that she could not see Aman making any friends in this government school, because of the class divide. However, her statements had undergone some change within a matter of two months. The friendships that Aman had forged in the school were being cherished by his mother, despite her personal beliefs.

Despite gaps in structural settings and cultural mismatch, the case highlights the attempts at including Aman in the classroom processes. Yet, these attempts fail to translate to an overarching understanding of living indiversity. A snippet of classroom discussion would shed more light on this.

Classroom Discussion

Lesson: 'Understanding Diversity'

¹Spinal Muscular Atrophy is a neuromuscular disorder that results in the loss of motor neurons and muscle wasting. The common feature is progressive weakness of voluntary muscles, with arms, legs and respiratory muscles being affected first. Source- https://en.wikipedia.org/wiki/Spinal_muscular_atrophy

Subject-area: Social and Political Life**Class: VI**

The teacher had asked the students to stand on a podium (constructed by students themselves) and to read aloud the chapter word by word. The entire focus of the class was on getting the pronunciation and the diction right. There was no discussion on any part of the chapter, not even the section that had an image of a child in a wheelchair. The chapter mentioned about the differences and diversity around us and how such differences should not be used as a point of discrimination against the other. Aman was sitting next to the teacher, trying to read the chapter by moving his index finger on every word. Students were taking turns to read. But none of them paused to take notice of the reality that surrounded them. The teacher did not initiate a discussion on what diversity meant, what does it feel like to be discriminated against, what does disability mean—all such questions that could naturally flow from the chapter and thus help children reflect on their classroom reality, were missed. All that the teacher tried to do was to scaffold children's pronunciation and diction. His argument was that since most of the children understand and speak only Hindi, it was important for them to be able to read fluently in English as they studied in an English medium section. Hence, for students, reading the chapter on diversity was like reading any other chapter written in English. The words had to be enunciated. It was alarming to see the entire class, including the teacher, be completely oblivious to their immediate social reality. One of the recommendations of the National Curriculum Framework, 2005, states that life inside the school should be connected to life outside. However, in this case, the children were robbed off the opportunity to even reflect on their own life inside these four walls of a classroom. This was an opportunity lost by a teacher, whose misplaced focus was on creating better orators than reflective and sensitive humans.

Analysis

Willis, through his study, *Learning to Labour: How working-class kids get working class jobs*, (1977), showed how “the lads”—a group of working-class boys, who were disruptive, misbehaved and had a negative attitude towards formal education, had formed an “anti-school subculture”, wherein it was “cool” to “fail” and “fall”. “The lads” were only interested in “having a laff”, or “messaging about”—techniques they employed in order to reject the norms and values of the school, as they could not foresee their future through the education being imparted to them in schools (Willis, 1977).

Several years later, the above case studies indicate how exclusion of working-class or lower middle-class students is still deeply entrenched as part of the formal schooling system.

While the *lads* were not interested in formal education and endured school until they could go to work, students as shown through the case studies, make several attempts at being “included”. By participating in classroom discussions, to complaining about lackadaisical attitude of teachers, or internalizing school-based segregation, students are seen resisting all such attempts and practices, that exclude them from a schooling

system that promises them a future. Studies by Kagan, (1990); Osterman (2000); Smith et.al (1986); Silver and Harkins (2007), have shown how labelling impacts a child's self-worth and esteem. Yet, the case studies find students combating labelling- at times through deviant behaviour (being noisy, and rumbunctious), and at other times, by just being present and participating in the acts of schooling (accepting ability-based segregations and identities) that makes them a part of the system.

Interestingly, no part of this entire school system seems to be speaking to each other to ensure the greater good of children. Therefore, regardless of the efforts by teachers, the classroom discussions do not bring about transformation of ideologies. What is therefore witnessed is reinforced dominant masculine and patriarchal, albeit exclusionary ideologies, in children.

The study by Qvortrup, A.&Qvortrup, L. (2017), showed how a child is not entirely included or excluded, but that he/she is included and excluded from the different communities in different degrees. This paper draws from the following argument, to highlight the different degrees, and varying levels in which children get excluded and included from the schooling process. This is done to bring to forefront the issues, that are sublimely hidden, and need addressal, if one were to ensure intrinsic inclusion.

Conclusion

The above instances bring out structural loopholes as well as everyday obstacles that act as hindrances in the path towards ensuring total inclusion in schools. By observing the infrastructural viability to examining the diversity index of the school, the study shows that the schools are making an attempt at inclusivity. But the attempt is half-hearted and is mostly forced upon as an administrative dictum, rather than emerging out of a genuine allegiance with the spirit of inclusivity and equality. Casteist remarks, corporal punishment, ability-grouping segregation, infrastructure unviability, and most importantly ignoring one's immediate social reality-all contribute towards stigmatisation, marginalisation, exclusion and consequent resistance from students in school. The study points out that better infrastructure, diversity in teacher recruitment and admission of student with special needs are only extrinsic factors to ensure inclusion in schools. True inclusion, however, only results through teachers, who are exceptionally trained and can critically reflect on their own ideas and morals, educators who can comprehend the true meaning of the aims of education and the vision of a democratic society, and administrators, who, through their position in the power hierarchy, can alter the discourse of inclusion in school education.

Implication of the study

While the study recognizes the importance of having inclusive infrastructure and recruitment/admission policies in order to ensure inclusivity in schools, the study also suggests ways to ensure inclusivity in the microcosm of the classrooms. Thus, contextualising the curriculum, doing away with labelling students, or reconsidering ability-grouping system, are different ways to affect intrinsic implications for inclusion

and diversity in the classrooms- the daily site of exclusion, marginalisation, stigmatisation and consequent resistance.

The paper is part of the larger study on 'Understanding Social and Political Life Textbooks', by the researcher.

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Empowering Teachers as Catalysts for National Development and Nation-Building: Current Perspectives and Strategies

Najma Chaudhary¹ & Sushil Kumar²

Abstract

Teachers play a pivotal role in shaping societies and fostering national development. This paper investigates how empowered educators through professional development, autonomy, and improved working conditions contribute significantly to nation-building efforts. By examining historical perspectives and contemporary case studies from Finland, Singapore, and Rwanda, the research demonstrates the transformative impact of empowered teachers on educational outcomes, social cohesion, and economic progress.

The paper analyzes the multifaceted influence of teachers on national development, including their contributions to human capital development, character formation, social mobility, and innovation. It argues that teacher empowerment is crucial for addressing complex societal challenges and preparing future generations for an evolving global landscape.

However, realizing the full potential of teachers as agents of national progress requires overcoming significant obstacles. These obstacles include inadequate training programs, low social status of the teaching profession, resource constraints, and the need to balance standardization with autonomy. The paper emphasizes that addressing these challenges is essential for leveraging education as a catalyst for sustainable national growth.

The research concludes that countries aiming for holistic development must prioritize teacher empowerment in their national agendas. By recognizing educators as key stakeholders in the nation-building process and actively involving them in educational policy-making, societies can harness the transformative power of education to create more prosperous, equitable, and cohesive nations.

Keywords: Teacher Empowerment, National Development, Educational Policy, Professional Development, Social Cohesion, Economic Progress

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Introduction: The Intersection of Education, Nation-Building, and National Development

Education has long been recognized as a vital driver of socio-economic and cultural development. Within this context, the concepts of nation-building and national development frequently emerge as focal points in discussions on educational policy. Nation-building refers to constructing a shared national identity and fostering social cohesion, often through the education system (Banks, 2015). National development encompasses broader aspects of socio-economic and political growth essential for raising the standard of living and achieving sustainable progress (Darling-Hammond, 2010). At the heart of both concepts lies the critical role of teachers. Empowered educators—who possess both the autonomy and support to innovate and lead—are instrumental in achieving these goals. By operationalizing the concepts of nation-building and national development, this paper demonstrates that teacher empowerment is not merely an educational concern but a national imperative.

Recent Data on Teacher Empowerment and its Impact

1. Global Reports on Education and Teacher Empowerment (2020-2024):

- The OECD's *2022 Education at a Glance* report emphasizes the direct correlation between teacher autonomy and student outcomes. In countries where teachers afforded greater professional discretion, there is a notable improvement in student literacy and numeracy scores (OECD, 2022).
- UNESCO's *2023 Global Education Monitoring Report* highlights that teachers' shortage and low levels of empowerment, particularly in low-income countries, are major barriers in achieving equitable and inclusive education by 2030 (UNESCO, 2023). The report calls for urgent investments in teacher training, better working conditions, and policies that enhance teacher agency.

2. Digital Pedagogy and Teacher Empowerment:

- A 2021 study by the World Bank found that in education systems where teachers were trained in technological pedagogical content knowledge (TPACK), students demonstrated greater adaptability and resilience during the COVID-19 pandemic (World Bank, 2021). This shift highlights the importance of empowering teachers with the tools and skills needed to navigate the challenges of digital education.

The Role of Teachers in Historical Nation-Building Efforts

Throughout history, educators have played a crucial role in shaping national identities and driving socio-economic progress. From ancient Greece to modern nation-states, the influence of teachers has been recognized in fostering critical thinking, civic responsibility, and social cohesion—key pillars of nation-building.

1. Ancient Greece: Educators as Architects of Civic Virtue

In ancient Greece, philosophers such as Socrates, Plato, and Aristotle laid the foundation for western thought and governance. Their educational philosophies

emphasized cultivating civic virtues, moral integrity, and critical reasoning. These teachings were instrumental in developing democratic ideals that continue to influence modern political systems (Grafton & Jardine, 1986).

2. Confucian Influence in East Asia: Moral Integrity and Social Harmony

In East Asia, Confucian teachings have historically emphasized the role of education in promoting moral integrity, social harmony, and hierarchical respect. The Confucian model places teachers as moral guides, responsible for shaping the character and values of individuals, which in turn foster societal stability (Tan, 2017). This emphasis on character education continues to influence educational systems in countries like China, Japan, and South Korea, where education is viewed as a primary means of achieving social cohesion and national strength.

3. Renaissance Humanism: Educators as Agents of Intellectual and Cultural Revival

The Renaissance period saw resurgence in the importance of education, driven by humanist educators who focused on developing individual potential through the study of the humanities. The humanist movement emphasized the role of education in liberating the mind and promoting civic responsibility. By empowering individuals with knowledge and critical thinking skills, educators during this period contributed significantly to the cultural and intellectual revival that transformed Europe's socio-political landscape (Grafton & Jardine, 1986).

Teacher Empowerment as a Pillar of National Development

In the 21st century, the role of teachers in national development has evolved to encompass not only the transmission of knowledge but also the cultivation of global competencies, critical thinking, and innovation. Teacher empowerment, therefore, is essential to national development strategies aimed at producing a skilled, informed, and cohesive population (Hanushek, 2011).

1. Defining Teacher Empowerment

Teacher empowerment involves granting educators the professional autonomy, resources, and support necessary to carry out their roles effectively. It includes access to continuous professional development, opportunities for leadership, and a supportive policy environment that values the teaching profession (Hargreaves & Shirley, 2009). Empowered teachers are better equipped to foster inclusive and high-quality education, which in turn drives socio-economic progress.

2. The Link between Teacher Empowerment and Economic Development

Empowered teachers play a critical role in human capital development, which is a key driver of economic growth. Educational systems that prioritize teacher autonomy, professional development, and well-being tend to produce better educational outcomes, as seen in countries like Finland and Singapore (Sahlberg, 2015). The ripple effects of these educational outcomes include higher productivity, innovation, and global competitiveness (OECD, 2019).

Case Studies: Empowering Teachers for Nation-Building and National Development

1. Finland: Autonomy and Professional Respect as Catalysts for National Success

Finland's education system is often cited as a global model for its emphasis on teacher autonomy and professional respect. Finnish teachers are required to have advanced degrees and are given significant control over curriculum design and instructional methods. This professional freedom allows educators to tailor their teaching to the needs of their students while promoting creativity and critical thinking. The result is a highly cohesive society with strong educational outcomes, low inequality, and high levels of social trust—key indicators of successful nation-building (Sahlberg, 2015).

2. Singapore: Teacher Empowerment in the Service of Economic Development

Singapore's rapid transformation from a developing country to a global economic hub has been closely linked to its education system. Teachers in Singapore are viewed as nation-builders essential to the country's economic strategy. The government provides comprehensive training and support, ensuring that educators are well-prepared to nurture both academic excellence and character development. By focusing on values such as discipline, resilience, and collaboration, Singaporean teachers contribute to the creation of a skilled workforce that drives national competitiveness (Ng, 2017).

3. Rwanda: Education for Reconciliation and Unity in Post-Conflict Nation-Building

Rwanda's post-genocide recovery offers a compelling example of how teacher empowerment can be a tool for nation-building. In the aftermath of the 1994 genocide, Rwanda placed education at the centre of its reconciliation and unity efforts. Teachers were empowered to promote peace education, critical thinking, and national unity. The government invested heavily in teacher training and curricular reforms, emphasizing the role of education in healing a divided society. This focus on empowering educators to lead the process of social reconstruction has been instrumental in Rwanda's journey toward national cohesion and development (Rubagiza, Umutoni, & Kaleeba, 2016).

The Multifaceted Impact of Teacher Empowerment on Nation-Building and National Development

Teacher empowerment contributes to several core aspects of nation-building and national development:

1. Human Capital Development

Investing in teacher empowerment is directly linked to the development of human capital, which is essential for economic growth. Quality education, delivered by well-trained and motivated teachers, produces a skilled workforce capable of driving innovation and productivity (Hanushek, 2011). For example, countries with empowered teachers often report higher student achievement, which correlates with increased economic competitiveness and social stability.

2. Social Cohesion and Equity

Teacher empowerment is crucial for promoting social equity and reducing educational disparities. Empowered teachers are better equipped to implement inclusive pedagogical practices that address the diverse needs of students. By providing equitable access to quality education, teachers help bridge socio-economic gaps, fostering social mobility and contributing to a more just and cohesive society (Banks, 2015).

3. Civic Values and National Identity

Empowered educators play a central role in instilling civic virtues and national identity in students. Through curricula that emphasize civic responsibility, democratic values, and cultural heritage, teachers nurture a sense of belonging and collective responsibility. This is essential for nation-building as it cultivates citizens who are engaged, informed, and committed to contributing to the common good (Lickona, 1991; Mandela, 1994).

4. Economic Progress and Innovation

Countries that prioritize teacher empowerment tend to experience greater levels of innovation and economic growth. Teachers who are given the freedom to experiment with pedagogical methods and foster critical thinking prepare students to be adaptive and creative in a rapidly changing world. The ability to think critically and solve complex problems is a key driver of technological advancements and economic development (Zhao, 2012).

Challenges in Implementing Teacher Empowerment and Strategies to Overcome

Despite the clear benefits of teacher empowerment, several challenges impede its implementation:

1. **Policy and Resource Constraints:** In many low- and middle-income countries, limited resources and poorly designed policies hinder efforts to empower teachers. Insufficient funding for teacher training, inadequate salaries, and heavy workloads contribute to low morale and high attrition rates (UNESCO, 2014). To address these issues, governments must prioritize expenditure on education and design policies that support teachers' well-being, and foster environment where educators feel valued and motivated.
2. **Resistance to Change:** Resistance to change within educational institutions can be a barrier to teacher empowerment. Traditional hierarchies and bureaucratic structures often limit teachers' ability to innovate or exercise autonomy. Educational leaders must champion a culture of trust and collaboration, where teachers are seen as partners in decision-making and are encouraged to take initiative (Hargreaves & Shirley, 2009).

Conclusion

Empowering teachers is crucial for achieving the dual goals of nation-building and national development. Teachers are the architects of a nation's future, shaping the

values, skills, and knowledge of the next generation. By investing in their professional development, autonomy, and well-being, nations can create educational systems that not only drive academic excellence but also contribute to social cohesion, economic prosperity, and civic engagement. The examples of Finland, Singapore, and Rwanda demonstrate that empowered teachers are key agents in fostering both nation-building and sustainable national development. As global challenges evolve, the need for empowered educators who can adapt and lead is more pressing than ever. The call to action is clear: governments, policymakers, and educational institutions must place teacher empowerment at the centre of their strategies for national growth and global competitiveness.

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Shared Cultural Integration between Nepal and India: Advancing Knowledge Society and Sustainable Development

Janardan Paudel¹

Abstract

This study aims to investigate the profound cultural fusion between India and Nepal, with particular attention to their common holidays, traditions, languages, and educational frameworks. For the economic and social benefit of both countries, it looks at how these cultural ties might be used to advance sustainable development, create a knowledge society, increase ecotourism, and safeguard cultural heritage sites. Through diplomatic ties between the two nations, the research also takes into account different approaches to assistance management that will improve sustainable development and the knowledge society. Document analysis and the author's own experiences are among the secondary materials used in this study, which uses a qualitative narrative research technique. The Nepal-India Friendship Library and the Indian Embassy in Nepal are the sources of the data, together with books, research papers, treaties, and documents. There is no use of statistical techniques; the analysis is descriptive. The study emphasises Nepal and India's close relationship, which is sometimes compared to that of older and younger sisters and is marked by open borders and active cooperation on bilateral initiatives in the areas of infrastructure, education, disaster relief, and general development. Nepal has benefited greatly from the assistance of the Indian government and its consulate in Nepal. This study purposefully excludes other nations and statistical methods in favour of concentrating on the bilateral connection between Nepal and India utilising both domestic and international data. It highlights the study's distinctiveness and important addition to the area and suggests more research to improve our knowledge of these two countries' connection.

Keywords: Cultural Integration, Knowledge Society, Sustainable development, Bilateral Cooperation, Diplomatic Relations

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Introduction

India and Nepal are nearby nations whose border crossings do not require a passport or visa. Since the beginning of time, these nations have maintained diplomatic links as well as shared geographical and cultural characteristics, and they both work to respect and protect one another's identities. The Indian states of Bihar, Uttar Pradesh, Uttarakhand, and West Bengal border Nepal to the east, south, and west.

King Prithvi Narayan Shah of the Gorkha principality started annexation and cession operations in the late 18th century, which led to the current limits of Nepal, according to Muni (2016). His goal was to bring the lesser nations that surrounded the Gorkha monarchy together to form what is today Nepal. His son, Bahadur Shah, carried on these advances after his death, extending Nepal's frontiers eastward to Sikkim and westward to Kumaon (in modern-day Uttarakhand, India).

In addition, Prime Minister Bhimsen Thapa increased Nepal's land area southward until British intervention in 1816 stopped it. The Segouli Treaty, which British diplomats signed that year, established the current boundary between India and Nepal and set the stage for future Anglo-Nepalese ties, according to Muni (2016). Notwithstanding their geographical separation, the people of India and Nepal share cultural traditions that have encouraged the establishment of knowledge societies and sustained ongoing human advancement in both countries.

Methodology

This qualitative study uses document analysis to collect data using a narrative research technique. Works by SD Muni, Ranjit Rae, and Birendra Prasad Mishra are the main sources of data, as are supplementary materials from the Indian Embassy in Kathmandu and the Nepalese Ministry of Foreign Affairs.

Objectives

The study intends to demonstrate how Nepal and India have a close diplomatic connection and how that relationship has evolved over time in the global setting.

Cultural and Historical Ties between Nepal and India

A rich cultural legacy that dates back thousands of years and was influenced by Buddhism and Hinduism unites Nepal and India. In order to preserve and promote this common legacy, educational exchanges between the two nations have been crucial. Being the birthplace of Siddhartha Gautama, Nepal has been a major hub for Buddhist research, drawing professors and students from India and other countries. The Indian religion of Hinduism has greatly influenced Nepalese religious and educational customs. Historical accounts demonstrate that Indian dynasties and Nepalese royal families had close political relations and intermarried. India's Navratri and Nepal's Dashain are two festivals, customs, and rituals that are widely celebrated in both countries and honour their shared cultural heritage.

It's crucial to consider the historical background when analyzing Nepal's connection to India. According to Mishra (2019), gaining a fair understanding of the Nepalese perspective requires knowledge of Nepal's political and developmental history. Mishra (2019) identifies three key periods in the relationship between Nepal and India: (1) 1769 to 1864, (2) 1846 to 1947, and (3) 1947 to the present. These eras, spanning unification of Nepal to its current political challenges, illustrate how the relationship has evolved over time.

In the past, individuals from Nepal and India were able to travel freely between the two nations; this custom is still in place today. This historical openness is noteworthy even in light of the current passport and visa landscape. An open border and continuous family and cultural contacts are hallmarks of the special affinity that exists between India and Nepal, according to the Indian Embassy in Nepal (2024). Five Indian states share a 1,850-kilometer border, making unfettered movement conceivable for a long time.

Their comparable cultural and religious traditions, open borders, common history, and continuing interactions all demonstrate the two countries' close ties. The enormous number of Nepalese students studying in India serves as more evidence of this unique link and the close ties that exist between the two nations.

Shared Hindu Heritage and Pilgrimage Sites

The important religious rituals, celebrations, and holy locations in India and Nepal are quite remarkable. Hinduism has a significant impact on both nations due to their common veneration of deities like Lord Shiva and Goddess Parvati as well as significant pilgrimage destinations like Varanasi in India and Pashupatinath in Nepal. An important part is also played by the Ganges River, which is revered in both countries.

Indian pilgrims visiting places like Pashupatinath Temple, Janaki Temple, and Lumbini, the birthplace of Buddha, demonstrate the strong religious and cultural ties between Nepal and India. In spite of COVID-19, 40,336 Indians travelled to Nepal, according to the country's 2020 tourism report, making them the top foreign visitor group. In a same vein, Nepalese pilgrims honour Lord Vishwanath by travelling to holy locations including Bodh Gaya, Badrinath, Kedarnath, Haridwar, Rishikesh, Amarnath, Vaishnodevi, Rameswaram, Parasuram Kunda, Ganga Sagar, and Varanasi. The friendship of these two nations is strengthened by this pilgrimage custom.

The strong cultural and religious ties between Nepal and India have contributed to greater sustainability and the development of a shared knowledge society. Mishra (2019) emphasizes the unique and sensitive nature of the Nepal-India relationship in South Asia, pointing to shared ethnicities, unrestricted movement, a blend of affection and conflict, and similar intellectual outlooks.

The connection between the two nations stretches back thousands of years. According to Sharma (2005), notable interactions occurred during the Ramayana and Mahabharata eras, such as Lord Ram's journey to Janakpur to marry Sita and the Pandavas' visit to Nepal. Matrimonial alliances were also established between the Indian Gupta dynasty

and the Nepalese monarchy during Emperor Ashoka's visit to Nepal in 250 BC. These long-standing ties are reflected in the shared traditions, festivals, and religious practices of both nations.

In the past, India and Nepal have engaged in extensive intellectual and cultural interactions that have influenced both countries. The Ramayana and Mahabharata eras are among the ancient times when the areas interacted, as Sharma (2005) points out. Nepalese intellectuals made significant contributions to a common intellectual legacy by travelling to Indian places such as Varanasi to pursue further studies. These ties were further cemented by marriage pacts between the Nepalese monarchy and the Indian Gupta dynasty during Emperor Ashoka's visit. The civilizations of both nations have been shaped by these historical linkages, resulting in a complex tapestry of shared customs and knowledge (Sharma, 2005; Sharma & Singh, 2010).

Enhancing Economic Growth through Sustainable Infrastructure Development

India and Nepal have a solid alliance that is marked by a shared dedication to collaboration and progress. Initiated in 1951, their policy of economic cooperation was intended to aid Nepal's national development initiatives. By guaranteeing that economic gains—especially in the areas of infrastructure, healthcare, and education—are efficiently dispersed to the populace, India's assistance program advances political advancement. The Embassy of India in Nepal (2023) reports that India has made significant contributions to Nepal in a number of areas, including drinking water, cross-border connections, infrastructure (roads, bridges, and electrification), education, health, telecommunications, cultural projects, training, and security. As a major development partner, India is currently funding 510 different initiatives in Nepal.

Through its embassy, India has also supplied buses to educational institutions and helped build school and college facilities, according to the Ministry of External Affairs of India (2023). According to the Nepal Ministry of Health (2024), India has also played a significant role in the establishment of several healthcare facilities and provides the majority of Nepal's medicines, food, and equipment. India and Nepal's historical relationship has social, political, economic, geographic, cultural, religious, and educational facets. Tilouine (2013) points out that although internal reasons are the main cause of political violence in Nepal, outside influences—particularly those from India—also have a big impact. Similar cultural, social, and religious aspects may be seen in Nepalese society, especially in the Terai area, where social trends are frequently reflected from India.

Sharma (2019) notes that Prime Minister Jawaharlal Nehru opposed the repression of democracy and was critical of King Mahendra's 1960 coup in relation to India's role in Nepalese politics. India's concern for Nepal's political stability is shown in Nehru's backing for King Tribhuvan's reinstatement. India has always expressed interest in Nepal's political developments due to its near proximity as a neighbour, aiming for a solid and intimate bilateral relationship that promotes security and progress for both parties.

Rae (2021) adds that Nehru denounced the 1960 repeal of multiparty democracy by King Mahendra as a betrayal of democratic principles. This viewpoint aided Nepal's transition to a federal democratic government and backed political parties in the country's fight against monarchy. Thus, Nepal and India's diplomatic ties continue to be closely linked.

Globalization, International Relations, and Sustainability

A world where people, ideas, and technology are exchanged more freely than ever before has been made possible by globalization. As borders become less restrictive, people may engage and influence one another via technologies, economics, and cultures. Global trade is improved, international collaboration is encouraged, and the dissemination of information and technical innovations is accelerated by this greater connectedness. Globalization is a difficult topic to properly comprehend, analyse, and evaluate, according to Ghosh (2006). Geographical borders are becoming less important, and actual and possible conflicts between industrialised and developing nations are becoming more prevalent. The effects of globalization are frequently misinterpreted rather than appropriately acknowledged.

Globalization is complicated, as evidenced by the unfettered movement of people, ideas, goods, and technology. This process has weakened national borders, creating a borderless world where international disputes are more frequent and conventional geography is less significant. In the modern world, attaining sustainability requires forging solid international ties. Sustainability is currently mostly linked to personal and family economic progress, frequently ignoring natural calamities. The desire for financial gain at any costs has grown more prevalent. Nguyen, Huynh, and Zhang (2016) characterise sustainability as the intricate and dynamic fusion of social advancement, environmental preservation, and economic growth. This concept emphasises the characteristics of sustainable development as well as its use. Sustainability indicators encompass social, environmental, and economic aspects that are difficult to regulate because of problems including unchecked migration, trade liberalisation, deforestation, water pollution, and population expansion brought on by globalization.

One factor contributing to a lack of comprehension of sustainable development is the absence of a cohesive management and international relations strategy. To achieve sustainability, pollution and people migration must be addressed. Furthermore, problems like the necessity for global economic growth and the standard of education make the road to sustainable development even more difficult.

It is more crucial than ever to have solid international ties. It is challenging for countries to regularly collaborate in the current state of global chaos. In order to manage international systems and institutions in a way that fosters productive international relations and sustainable development, Brown and Ainley (2005) emphasise the significance of domestic politics, social theories, international law, economic development, liberal internationalism, and the adoption of broadly liberal political

principles. In addition, educational systems need to change in order to preserve the environment and provide employment stability in the global economy.

Perspectives of SD Muni on Relation between Nepal and India

Nepal is located between China and India, with India to the east, south, and west and the huge Tibetan Plateau to the north. It is more difficult to get to Tibet than India, even if it is geographically close. This is due to the ease of crossing the border between India and Nepal, which does not need a passport or visa. Muni (2016) reflection on Nepal's geopolitical position is that the late King Prithvi Narayan Shah's renowned description of Nepal as "a tarul (a root vegetable) between two stones," signifying Nepal's precarious location between its powerful neighbours, is highlighted.

The comparison of Nepal to a "tarul" between two stones highlights the nation's precarious geopolitical location between China and India. In order to protect its sovereignty and control its relations with these powerful neighbours, China and India, Nepal must maintain a careful balance, as King Prithvi Narayan Shah's contrast highlights. Unrestricted travel over the Nepal-India border represents long-standing historical and cultural ties, whereas Tibet's more restricted access draws attention to Nepal's difficulties with its northern border. Muni's (2016) reference to this metaphor reaffirms its ongoing importance in comprehending Nepal's current situation.

According to Muni (2016), Jawaharlal Nehru highlighted the strategic importance of Nepal for the security of India in a speech delivered on 6th December, 1950. He explained that India's concerns about Nepal's internal stability had grown due to developments in China and Tibet. Nehru viewed Nepal as a crucial geographical barrier separating India from China. He stressed that India could not tolerate instability in Nepal while maintaining its independence, as such instability would weaken this protective barrier and endanger the security of India.

Nehru's address emphasises the geopolitical concerns of India regarding Nepal, particularly in light of China's growing role in Tibet. He struck a balance in his comments between preserving national security of Nepal and respecting its sovereignty. The focus on Nepal as a "barrier" against China underscores the strategic importance of Nepal in defence strategy of India, a topic that continues to shape India-Nepal relations. Nehru's depiction of Nepal as a strategic "barrier" against China highlighted the country's essential role in India's military policy, which still affects the dynamics of India-Nepal relations today. The social and cultural integration that forms the foundation of the knowledge society between Nepal and India is thus closely linked.

Nehru, cited by Muni (2016), describes Nepal's democratic movement in the context of larger regional shifts and Indian political ambitions. India looked for a more forward-thinking, security-aware administration in Nepal after 1950 that would fit in with its geopolitical plans. Because of its authoritarian nature, the Rana administration, which has ruled Nepal since the 19th century, opposed reforms and was viewed as unsuitable by Indian authorities. India's position in Nepal is emphasised, both as a neighbouring state and as an idealistic ally of democracy. This effect shows India's wider interest in

maintaining subcontinental stability and promoting progressive political systems consistent with its own post-independence ideals. India wanted Nepal to have a stable, forward-thinking government that would support its security objectives.

Muni (2016) also emphasises Nehru's resolute stance against foreign meddling in Nepal, highlighting the two countries' distinct geographic and cultural connections. While acknowledging Nepal's independence, Nehru emphasised that India and Nepal had a unique connection that no other nation could match due to their close proximity and connectivity. He emphasised that India's security was dependent on Nepal's stability and expressed the hope that other countries would respect this tight connection.

According to Muni (2016), Nehru's viewpoint illustrates India's delicate balancing act in its attitude to Nepal. Nehru made it apparent that India did not desire direct intervention, even if the country felt compelled to keep an eye on events in Nepal because of their strategic and geographical connections. He wished for armed involvement to be avoided in favour of a peaceful settlement of Nepal's disputes. Nehru's plan sought to keep outside forces from influencing Nepal while preserving India's position in determining the country's destiny. India avoided getting too involved in Nepal's internal issues by not offering weapons or full diplomatic recognition, but it did so to protect its geopolitical interests. Through Nehru's strategy, India was able to preserve its sway over Nepal and establish a solid, mutually beneficial partnership.

Nehru's strategy demonstrates a sophisticated foreign policy meant to uphold Nepal's sovereignty while preserving India's security and regional clout. His focus on the close links between the two nations underscores India's wish to steer Nepal's political course without inciting conflict or enlisting the help of other powers. Nehru maintained India's influence while avoiding the dangers of becoming deeply involved in Nepal's internal issues by refraining from direct intervention and encouraging peaceful solutions. India's attitude to Nepal is still influenced by this cautious diplomacy. Overall, every circumstance demonstrates the strong cultural, social, political, and geographic ties between India and Nepal.

Social Integration and Knowledge Society between Nepal and India

Social integration and the growth of a knowledge-based society have been greatly impacted by the shared cultural, historical, and physical connections between India and Nepal. Strong interpersonal ties have been cultivated by open borders and the unrestricted mobility of persons, which has encouraged the sharing of cultural customs, values, and social conventions. With many Nepalese students pursuing higher education in India, educational partnerships—especially through university exchanges—have been crucial in fostering a transnational knowledge society (Adhikari, 2018).

A knowledge-based society and improved social integration have been made possible via economic cooperation. Increased cross-border interactions between professionals, scholars, and entrepreneurs are made possible by the strengthening of economic ties brought about by trade agreements and bilateral economic policies. Innovation, skill development, and knowledge transfer have all accelerated as a result. Furthermore, the

development of a knowledge economy in both nations has been largely facilitated by cooperative technology and information exchange programs backed by both governments (Shrestha & Sijapati, 2019).

Both governmental and non-governmental organizations play an equally important role in fostering information exchange and social integration. Social cohesiveness and knowledge gaps have been filled by initiatives including capacity-building workshops, collaborative research, and cultural exchanges. These initiatives, which are backed by regional cooperation policies in research, technology, and education, guarantee that Nepal and India share fairly in the advantages of a knowledge society (Pandey, 2020; Bhattarai, 2021).

Transformation of societies into a knowledge society between Nepal and India

In Nepal and India, the shift to a knowledge society has been fuelled by expanded educational opportunities, technological advancements, and cooperative projects. Both countries have made educational reforms a top priority in recent years, which has increased literacy rates and increased access to higher education. The expansion of educational institutions in Nepal and collaborations with Indian universities have greatly facilitated the development of skills and intellectual interactions. Because of this cooperation, information and skills have been able to move freely across national boundaries, making education a crucial component of societal progress (Sharma & Dhungel, 2019).

According to Rae (2021), India reacted quickly to the 7.8-magnitude earthquake that struck eastern Nepal, dispatching military planes to Kathmandu with relief and rescue supplies in less than six hours. By delivering thousands of trucks filled with necessary supplies to the fourteen regions most affected, Indian individuals also made a contribution. Strong connections between the two countries are demonstrated by India's help, which totals Rs 450 crore (USD 65 million), and its offer of USD 1 billion for rehabilitation. During the crisis, this timely and significant assistance showed strong bilateral collaboration.

Additionally, technological developments have been essential to this collaboration, especially with the expansion of information and communication technologies (ICTs). Information is now more widely available because to the growth of the internet, mobile devices, and digital platforms, which has improved knowledge sharing between the two nations. In areas like healthcare and education, cooperative research has been fostered and communication has increased thanks to joint projects like India's South Asia Satellite. In order to close information gaps and encourage involvement in the global knowledge economy, these advances have proven crucial (Kumar & Adhikari, 2020).

The shift to a knowledge society has also been further accelerated by regional cooperation and governmental programs. Both India and Nepal have implemented policies to encourage innovation, research, and development because they understand the strategic value of knowledge. By using knowledge as a vehicle for empowerment and advancement, trade, science, technology, and education initiatives have

strengthened bilateral connections and promoted socioeconomic growth between the two countries (Thapa, 2018; Joshi, 2021).

Integration between Nepal and India for Sustainable Development

Because of their strong physical and socioeconomic ties, Nepal and India must work together on sustainable development. Both nations understand how crucial it is to cooperate in fields like commerce, energy, and environmental control. Indian investment and technical assistance in Nepal's hydroelectric projects, for example, demonstrate a win-win situation: India receives a reliable energy supply, and Nepal uses its water resources to generate electricity. In addition to increasing energy security, this collaboration propels economic expansion in both countries (Singh, 2019). Furthermore, the shared Himalayan region's resilience depends on sustainable practices in disaster risk reduction, water management, and agriculture. India and Nepal can improve their collaboration through bilateral agreements and regional programs like the South Asia Subregional Economic collaboration (SASEC) (Chhetri, 2020).

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Globalization affects sustainable development in a variety of ways, offering both advantages and disadvantages. It makes it easier for information, technology, and financial resources to go throughout the world, which supports sustainable development by making cleaner technologies more accessible and encouraging international environmental cooperation. As per Sachs (2015), multinational firms that oversee global supply chains have the ability to promote sustainable practices and elevate environmental standards. But if globalization is not properly controlled, it may exacerbate social injustices and environmental harm by frequently putting economic expansion ahead of social and environmental welfare. Sustainability initiatives may be hampered by the rapid industrialisation and resource extraction brought on by global demand, which can deplete natural resources and raise carbon emissions (Stiglitz, 2017). Using sustainable policies and efficient global governance to mitigate the negative consequences of globalization while maximising its positive aspects requires a balanced approach.

Key Lessons for Achieving Success

Even minor mistakes can have major repercussions in today's linked world. Neglecting geographic closeness can lead to serious security issues. For the sake of their mutual security, Nepal and India must continue to have strong geographic relations. While India should continue to help Nepal's institutions, Nepal must manage its foreign policy cautiously to prevent jeopardising India's diplomatic or territorial interests. For both countries to remain stable, their bilateral cooperation is crucial.

Globalization has made careful management essential. Petras and Veltmeyer (2001) draw attention to the ways in which globalization affects the political and intellectual spheres and provide important queries regarding changing social and economic dynamics. It entails the expanding flow of information, technology, finance, and trade in a global economy. Regulation becomes crucial as individuals travel freely across borders. Despite being situated between China and India, Nepal has closer cultural and geographical links to India. However, Nepal should continue to pursue a non-aligned foreign policy in order to promote positive ties with all nations, as giving preference to one might backfire.

Strong relationships are also necessary for their security since neighbouring nations with deep cultural and geographic ties are like residences within the same community. Those outside the family frequently gain from family disputes. National borders are becoming less inflexible as neoliberalism replaces realism as the dominant global ideology. For Nepal and India to advance together and solve environmental problems, infrastructural development and the adoption of cooperative policies are therefore essential.

The purpose of this study is to emphasise how crucial Nepal and India's close connection is. Allowing individuals to travel freely between the two nations without a passport or visa is a major advantage. They have a shared ancestry, a similar geography, and comparable cultural customs. In order to study in India, many Nepalese students apply for ICCR scholarships every year. Furthermore, Nepal is an important economic hub for Indian traders, with billions of rupees worth of commodities exchanged between them.

Conclusion

The close social and cultural linkages between India and Nepal are evident from Durkheim's point of view. According to Ritzer (2018), p. 634, Durkheim (1897/1951: 315) emphasised the interrelated and dynamic character of communal life, where diverse facets of existence interact and change in different ways. This point of view is consistent with modern globalization, which entails the constant flow of people, concepts, products, and technology. According to the study's results, Nepal and India's long-standing friendship is probably going to persist despite outside forces. Therefore, it is anticipated that the close ties that exist between the citizens of these two countries would continue for some time to come.

Durkheim's sociological paradigm, which emphasises that social integration is a dynamic process of interaction and evolution rather than a static state, helps put the long-

standing connection between Nepal and India into perspective. This is demonstrated by the close historical links between the two countries, which have endured despite changes in the world in their social and cultural interchange. Durkheim's theory of collective existence is consistent with how Nepal-Indian relations adjust to outside influences while preserving essential aspects of their identities. Globalisation may have an impact on some areas, yet enduring cultural and family links guarantee their survival, indicating an enduring continuity in spite of outside influences.

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History Education and Nation-Building: A Critical Assessment of NCERT Textbooks

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Abstract

History education is a vital element of nation-building, as it shapes a society's collective memory, identity, and values. In India, the history textbooks produced by the National Council of Educational Research and Training (NCERT) are central to this process, shaping the historical perspectives of millions of students. This article critically examines the role of NCERT history textbooks in nation-building, with a focus on the narratives they advance, the extent to which they incorporate diverse perspectives, and their portrayal of significant historical events. Additionally, it explores the controversies and debates that have arisen around these textbooks, particularly regarding political influences, regional biases, and the representation of marginalized communities. The article concludes by offering recommendations to strengthen the role of history education in promoting a more inclusive and balanced understanding of India's past, which is crucial for fostering a cohesive and unified nation.

Keywords: History education, nation-building, NCERT textbooks, national identity, inclusive representation

Introduction

The teaching of history in schools is a powerful tool for shaping the national identity and collective memory of a nation. Through history education, students learn about the origins, struggles, and achievements of their country, which helps to foster a sense of belonging and pride in their national identity. In India, the NCERT history textbooks are among the most widely used resources in schools, making them a significant instrument in the formation of national consciousness. These textbooks have been both praised for their comprehensive coverage and criticized for their portrayal of historical events, the inclusion or exclusion of certain narratives, and the potential biases they reflect.

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This article provides a critical assessment of the role of NCERT history textbooks in nation-building. It explores how these textbooks construct national narratives, the extent to which they include diverse perspectives, and the ways in which they represent key historical events. Furthermore, the article addresses the on-going debates and controversies surrounding the content of these textbooks and their impact on students' understanding of history and national identity. The analysis is framed within the broader context of the challenges and responsibilities of history education in a diverse and pluralistic society like India.

Objectives of History Education at the Secondary Stage

Cognitive Objectives: Developing Critical Thinking and Analytical Skills

Understanding Cause and Effect in Historical Events: History allows students to grasp how past events influence contemporary social, political, and economic systems. By understanding the cause-and-effect relationship between historical phenomena, students are encouraged to think critically about the progression of human society.

Mastering Chronology and Timeline: Learning the chronological order of key events, from local to global, helps students develop a coherent sense of history. This enables them to link past events to present circumstances and future possibilities.

Encouraging Inquiry and Research Skills: History education at this stage should introduce students to research methods, enabling them to engage with primary and secondary sources, analyze historical evidence, and develop informed conclusions.

Affective Objectives: Cultivating National Pride and Global Awareness

Fostering a Sense of National Identity: History particularly national history, plays an important role in instilling a sense of pride and belonging. Students learn about the contributions and struggles of their ancestors, which can help them appreciate the values, diversity, and unity of their nation.

Promoting Global Citizenship: While history education emphasizes national history, it also encourages students to see beyond borders. By learning about global civilizations, students become more aware of interconnectedness, fostering empathy and respect for diverse cultures and ideologies.

Ethical Objectives: Instilling Values and Civic Responsibility

Understanding Moral and Ethical Dimensions of History: History education at the secondary stage encourages students to reflect on the moral choices of historical figures and societies. By analysing both triumphs and failures, students can learn valuable lessons about justice, human rights, and ethical leadership.

Inspiring Active Citizenship: History offers examples of resistance against injustice, leadership in crises, and movements for social change. By studying these, students can

be motivated to participate actively in their communities and contribute to national progress.

Curriculum and Syllabus according to NCF

The National Curriculum Framework (NCF) provides guidelines for the curriculum and syllabus at various stages of education in India, including the secondary stage (Classes IX and X). The NCF emphasizes that history education at this stage should go beyond memorizing dates and events, encouraging students to critically engage with the subject and understand historical processes. Below is a brief overview of the curriculum and syllabus for history at the secondary stage as per the NCF.

NCF Guidelines for History Education at the Secondary Stage (Classes IX-X)

The NCF envisions history education as a means to help students develop a deeper understanding of the world and their place within it. At the secondary stage, history is studied as part of the broader Social Science curriculum, along with geography, political science, and economics. History at this level aims to foster critical thinking, an appreciation of cultural diversity, and a sense of national and global citizenship.

Curriculum Structure: Themes and Objectives

Broader Learning Goals:

Developing Critical Thinking: The curriculum encourages students to analyze historical events critically rather than simply recalling facts.

Connecting the Past to the Present: Students are taught to relate historical developments to current social, political, and economic issues.

Encouraging Inquiry-Based Learning: The curriculum emphasizes historical inquiry, research skills, and the interpretation of sources.

Building Empathy and Cultural Sensitivity: Understanding diverse histories, including regional, subaltern, and global perspectives, helps students appreciate cultural diversity.

Key Themes and Topics: The syllabus is typically organized around broad historical themes that allow for a comprehensive understanding of significant periods and events. It focuses on the history of India as well as global historical processes. Some key thematic areas include:

Ancient and Early Medieval History: This covers ancient civilizations, early societies, and the rise of empires in the Indian subcontinent and beyond, focusing on the contributions of these periods to culture, science, and philosophy.

Medieval Indian History: The emphasis is on the Delhi Sultanate, the Mughal Empire, and regional kingdoms. The curriculum highlights cultural exchanges, political developments, and social structures during these periods.

Colonial India: A major focus is placed on the British colonial period, its impact on India's economy, society, and politics, and the response of Indian society to colonial rule, including resistance movements.

Nationalist Movements: The curriculum covers the rise of nationalism, the Indian freedom struggle, key events like the Non-Cooperation Movement, Civil Disobedience, Quit India, and the role of leaders such as Mahatma Gandhi, Jawaharlal Nehru, and Subhas Chandra Bose.

Post-Independence India: Understanding the formation of the Indian Republic, constitutional development, social and economic changes, and India's position in world affairs post-independence.

World History: Alongside Indian history, students are introduced to significant global events, such as the Industrial Revolution, the World Wars, the Russian and French Revolutions, decolonization, and the Cold War.

Syllabus for Classes IX and X

The syllabus for history in Classes IX and X under the NCF is designed to be more thematic rather than chronologically rigid. The content balances Indian and world history to ensure students receive a holistic understanding of global historical processes.

Class IX History Syllabus (Themes in World History)

The French Revolution: Causes, impact on Europe, and the spread of revolutionary ideas.

Socialism in Europe and the Russian Revolution: The emergence of socialist ideologies and the Russian Revolution's impact on world history.

Nazism and the Rise of Hitler: The interwar period, the rise of fascism in Europe, and World War II.

Forest Society and Colonialism: Impact of colonialism on indigenous societies and forest dwellers in India and other parts of the world.

Pastoralists in the Modern World: The effects of colonial rule on pastoral communities.

Class X History Syllabus (India and the Contemporary World – II)

Nationalism in Europe: The rise of nation-states in Europe, the ideas of liberalism and conservatism, and their impact on India.

Nationalism in India: Detailed study of the Indian National Movement, the role of Mahatma Gandhi, and major events leading up to India's independence.

Industrial Revolution: Its impact on society and economy, particularly in relation to colonialism.

The Making of a Global World: The interconnection of societies through trade, exploration, colonization, and the economic consequences of globalization.

Print Culture and the Modern World: The history of print culture and its influence on society, politics, and the spread of ideas.

Pedagogical Approach and Assessment

The NCF promotes the use of diverse teaching methods, moving away from rote learning. Teachers are encouraged to use:

Project-Based Learning: Engaging students in research, fieldwork, and presentations.

Use of Sources and Evidence: Analyzing primary and secondary sources like historical documents, paintings, artifacts, and oral traditions.

Debates and Discussions: Encouraging students to debate multiple perspectives on historical events.

Formative Assessments: Continuous assessments that focus on understanding, critical thinking, and application rather than mere recall of information.

Few themes according to the Objectives of Education

Theme 1: The Indian National Movement and its Global Context

Objective: Critical Thinking and National Citizenship

Focus: This theme explores the various phases of the Indian freedom struggle, such as the Non-Cooperation Movement, Civil Disobedience, and Quit India Movement, along with the role of key leaders like Mahatma Gandhi, Jawaharlal Nehru, and Subhas Chandra Bose.

Rationale: It encourages students to think critically about colonialism, the role of leadership, mass movements, and the strategies employed for independence. Students also reflect on the values of democracy, self-rule, and non-violence, linking them to present-day governance.

Global Context: This theme can also highlight how India's nationalist struggle was part of a broader wave of anti-colonial movements worldwide, emphasizing India's place in global history.

Theme 2: Revolutions and the Birth of Modern Nation-States (French, Russian, and American Revolutions)

Objective: Global Citizenship and Understanding Ethical Dimensions

Focus: This theme deals with key global revolutions that shaped the modern world, such as the French, Russian, and American Revolutions. It examines their causes, key events, and impacts on ideas about liberty, equality, and rights.

Rationale: By understanding these revolutions, students can critically examine the ethical issues of justice, freedom, and governance that drove these movements. It also fosters an appreciation of how these ideas influenced global societies, including India's own freedom movement.

Global Outlook: This theme encourages students to recognize the interconnectedness of human struggles for rights and freedoms, fostering a sense of global citizenship.

Theme 3: Industrialization and its Impact on Society

Objective: Critical Thinking and Ethical Awareness

Focus: The theme explores the Industrial Revolution, its causes, and its far-reaching effects on society, economy, and the environment. The syllabus includes discussions on technological advancements, urbanization, and the rise of capitalism.

Rationale: Students analyze both the positive and negative outcomes of industrialization, such as economic growth versus exploitation of labor, environmental degradation, and the displacement of traditional societies. This helps students to think critically about the moral and ethical dimensions of economic progress and social inequality.

Contemporary Relevance: Linking past industrial developments to present-day issues like climate change and economic disparity encourages students to reflect on current global challenges.

Theme 4: Cultural Diversity and Social Change in Medieval India

Objective: National Pride and Empathy for Diversity

Focus: This theme explores the cultural exchanges, social changes, and conflicts in medieval India during the rule of the Delhi Sultanate, Mughal Empire, and various regional kingdoms. Topics include art, architecture, literature, and the coexistence of multiple religions and cultures.

Rationale: The objective here is to foster an understanding of India's rich cultural diversity and pluralistic society. By appreciating the contributions of various communities, students develop empathy for different cultural traditions.

National Identity: This theme enhances students' pride in India's composite cultural heritage, encouraging them to recognize the country's strength in its diversity.

Research findings related to the topic

Incorporating research findings into the academic article can significantly enhance its credibility and depth. Here are some researches:

Research by Hirst & Woolley (2014) discusses how history education can influence national consciousness.

Studies like Lévesque (2013) highlight the importance of critical historical thinking in fostering informed citizenship.

Research by Wineburg (2001) illustrates how inquiry-based learning in history can engage students more deeply than traditional methods.

Studies by Thornton (2005) shows that teachers' perceptions of history shape their pedagogical choices and classroom dynamics.

Bennett & Stenning (2007) show that history classes that promote discussion and debate foster greater civic engagement.

P. J. Marshall (2016) discusses how narratives in textbooks can shape students' understanding of historical events and national identity.

The Role of History Education in Nation-Building

History education is a fundamental aspect of nation-building, as it influences the collective memory and identity of a society. By studying history, students gain valuable insights into their nation's origins, the trials and triumphs that have shaped it, and the core values that define its society. This knowledge is vital for nurturing a sense of national identity and unity, as well as for fostering social cohesion in a diverse population.

In a country as varied as India, the significance of history education is amplified. India is home to a multitude of cultures, languages, religions, and ethnicities, each with its own distinct historical experiences. The challenge for educators and textbook authors is to develop a curriculum that authentically represents this diversity while simultaneously promoting a sense of national unity. This task is further complicated by the fact that different groups may interpret historical events in diverse ways; what one group views as a heroic moment, another might see as a tragic episode.

In this setting, NCERT history textbooks are crucial in shaping students' understanding of history across the nation. These textbooks aim to offer a balanced and comprehensive portrayal of India's past, striving to create a unified national narrative that can foster a shared identity among students from various backgrounds. However, crafting such a narrative involves navigating numerous challenges, and the content of NCERT history textbooks has often been the focus of considerable debate and controversy.

NCERT History Textbooks: An Overview

In India, the primary agency responsible for creating and disseminating educational materials is the National Council of Educational Research and Training, more commonly known as NCERT. NCERT history textbooks are used in schools that follow the Central Board of Secondary Education (CBSE) curriculum, which encompasses a substantial number of schools nationwide. These textbooks aim to offer students a thorough understanding of Indian history, spanning from ancient times to the modern era.

NCERT history textbooks are structured into various volumes, each focusing on different periods of Indian history, including the ancient, medieval, and modern eras, as well as world history. The content is designed to be inclusive, reflecting the rich diversity of Indian society, and to encourage critical thinking among students. Despite these objectives, the effectiveness of achieving them has been a topic of considerable debate.

Constructing National Narratives

One of the central roles of history education is the creation of national narratives. These narratives are the stories a nation tells about itself, and they are essential in shaping the collective identity of its people. For a country as complex and diverse as India, crafting a national narrative presents a significant challenge.

NCERT history textbooks play a key role in shaping India's national narrative. They emphasize the unity of India as a nation despite its vast diversity and highlight the contributions of various regions, cultures, and communities to the country's development. For instance, the textbooks often present India as a "melting pot" of cultures, where diverse traditions and practices have blended and influenced each other over the centuries.

However, constructing a national narrative in such a diverse country involves making decisions about which aspects of history to include and which to omit. These decisions can greatly impact how students perceive their national identity and history. Critics argue that NCERT history textbooks have sometimes favoured certain narratives over others, resulting in a partial or skewed representation of India's past.

Emphasis on National Unity

A central theme in NCERT history textbooks is the emphasis on national unity. This theme is particularly evident in the portrayal of India's struggle for independence, where the focus is often on the collective efforts of Indians from different regions and communities to overthrow British rule. The textbooks highlight the contributions of leaders like Mahatma Gandhi, Jawaharlal Nehru, and Subhash Chandra Bose, as well as the participation of various social groups in the freedom struggle.

While the emphasis on national unity is important for fostering a sense of common identity, it can also lead to the marginalization of regional and local histories. For example, the contributions of regional leaders and movements that did not align with the mainstream nationalist movement are often underrepresented in the textbooks. This can create a narrow understanding of the independence movement and overlook the diversity of experiences and perspectives that characterize India's struggle for freedom.

The Idea of India as a Civilization

A central aspect of the national narrative in NCERT history textbooks is the depiction of India as an ancient civilization with a long and distinguished history. These textbooks often emphasize the achievements of ancient Indian civilizations, such as the Indus Valley Civilization, the Maurya and Gupta empires, and the contributions of Indian scholars in fields like mathematics, astronomy, and medicine.

While this focus on India's ancient heritage aims to instill pride in students about their country's rich cultural legacy, it can also result in an idealized portrayal of the past. This emphasis might obscure the complexities and contradictions of history, such as social

hierarchies and inequalities, including the caste system, by focusing predominantly on the accomplishments of the elite.

Portrayal of the Medieval Period

The depiction of the medieval period in NCERT history textbooks has been a subject of considerable debate. This era, marked by the rise of various Muslim dynasties in India, is often presented through themes of religious conflict and cultural integration. The textbooks highlight figures such as Akbar, who is depicted as a symbol of religious tolerance, and celebrate the cultural achievements of the Mughal Empire.

However, this portrayal has faced criticism for being either overly idealized or biased. Critics argue that the textbooks may romanticize the period by emphasizing the accomplishments of Muslim rulers or, conversely, depict it in a negative light by focusing on conflicts between Hindus and Muslims. This has sparked discussions about whether the textbooks provide an accurate and nuanced representation of the medieval period and whether they offer a balanced view of India's historical complexities.

Medieval India for Class VII (1967)

Originally released in 1967, this textbook was authored by historian Romila Thapar and was the second book produced by the NCERT. The previous book, also authored by R. Thapar and published one year prior, focused on Ancient India. From the early thirteenth century until the early fifteenth century, the sufi and bhakti traditions in the Delhi Sultanate were characterised according to the ideals of the 'Arcadian harmony' framework. In relation to the sufis, Romila Thapar noted:

“Among the Muslims who had come from Persia and other lands in the eleventh century were some sufis. They settled in various parts of India and soon had many Indian followers. The sufi emphasized love and devotion as a means of coming nearer to God. [. . .] Because of the emphasis on love, they were tolerant of other religions and sects, and believed that the paths to God can be many. [. . .] The sufis did not try to convert Hindus to Islam but advised Hindus to be better Hindus by loving the one true God.” Thapar, 1967, 2001: 52–3

The textbook also includes a whole chapter dedicated to the Mughal emperor Akbar, who governed from 1556 to 1605. Akbar is often seen as a symbol of tolerance. In contrast, only two paragraphs are devoted to the reign of Aurangzeb, who ruled from 1658 to 1707 and is widely believed (to whatever extent historical accuracy) to epitomise politico-religious fanaticism and repression. Akbar is characterised in the textbook as follows:

Akbar's greatness as a ruler stemmed not from his huge dominion, but from his genuine concern for the polity and its citizens. [...] Akbar shared many similar principles of governance with Ashoka. In one of his decrees, Ashoka declares, "All men are my children." Akbar would have agreed with this if he had been aware of it. The ultimate aspiration of Akbar was for the unification of India into a single nation. People should

set aside their religious distinctions and identify themselves solely as the people of India. Thapar, 1967; 2001: 94–5.

Inclusion and Representation of Diverse Perspectives

One of the fundamental challenges in history education lies in ensuring the inclusion and representation of diverse perspectives. In a country as vast and culturally rich as India, it is imperative that history textbooks encompass the full spectrum of experiences, contributions, and narratives from all communities, regions, and social groups. India's rich tapestry of cultures, languages, religions, and historical experiences presents both an opportunity and a challenge for educators and policymakers.

Ensuring that history education is inclusive means recognizing and integrating the stories of various groups, including those that have been historically marginalized or overlooked. This includes not only the mainstream narratives of dominant cultures but also the histories of regional communities, indigenous groups, women, and other minority populations. The aim is to provide a more comprehensive understanding of the nation's past, fostering a sense of shared history and collective identity while also acknowledging the diversity of experiences that have shaped India.

However, achieving this balance is not without its difficulties. History, by its very nature, is a complex and often contested field, where different groups may have varying interpretations of events, figures, and periods. The process of selecting what to include in history textbooks inevitably involves choices that can be contentious, leading to debates and disagreements.

In India, the National Council of Educational Research and Training (NCERT) history textbooks have often been at the centre of such controversies. Critics argue that these textbooks have sometimes failed to adequately represent the diversity of India's history. Some contend that certain regions, communities, and historical events have been underrepresented or misrepresented. For instance, the contributions of regional leaders, indigenous communities, and certain religious groups may not be given the attention they deserve. Others criticize the textbooks for promoting a centralized narrative that emphasizes the achievements of certain cultures or periods while downplaying or neglecting others.

The challenge, therefore, is to create a history curriculum that is both inclusive and balanced, one that recognizes the multiplicity of India's past without succumbing to bias or exclusion. This requires on-going dialogue and revision, ensuring that the narratives presented in history textbooks are reflective of the true diversity of the nation. It also demands a commitment to critical thinking, encouraging students to engage with history not as a fixed set of facts but as a dynamic and evolving field of study. By addressing these challenges, history education in India can become a tool for fostering greater understanding, tolerance, and unity among its citizens.

Representation of Marginalized Communities

A significant concern in NCERT history textbooks is the representation of marginalized communities. These textbooks have historically been criticized for underrepresenting the experiences and contributions of Dalits, Adivasis, and other marginalized groups in Indian history. For instance, the roles of these communities in the freedom struggle and their contributions to social and cultural developments have often been overlooked or minimized in mainstream historical narratives. Here are the examples of those under representations.

NCERT History Textbook Class VIII (2005)

Our Pasts – III Part-1' and 'Our Pasts – III Part-2'

The focus of NCERT History books shifted from "our past" (singular) to "our pasts" (plural) in 2005. However, the textbook has yet to reflect this modification. I'm using content analysis to look at texts. The inclusion and deletion of historical content in textbooks is impacted by societal caste and patriarchal hierarchies. Although dominant historical narratives are included in these textbooks, subaltern histories are marginalised and excluded.

Chapter 5 of the book 'When People Rebel: 1857 and After' discusses the uprising of 1857 and the resistance of peasants and sepoys against the British administration.

This chapter, titled "The Peasants and the Sepoys," mentions the following:

"Did you know that in those days many people in the country believed that if they crossed the sea they would lose their religion and caste? So when in 1824 the sepoys were told to go to Burma by the sea route to fight for the company, they refused to follow the order, though they agreed to go by the land route. They were severely punished, and since the issue did not die down, in 1856 the Company passed a new law which stated that every new person who took up employment in the Company's army had to agree to serve overseas if required."(Selected passages from the textbook...) paragraph 5 of Chapter 5, page 52

In this context, it is important to emphasise that while many individuals in the country held the belief that crossing the sea would result in the loss of their religion and caste, the Vedas and Shastras explicitly state that only Brahmins believed that crossing the sea would lead to the loss of their religion, although this fact is not acknowledged in the text. For the marginalised segment of society, it was never a concern as they were/are seen as untouchables and morally corrupt. Hence, this textbook fails to properly distinguish the individuals among those numerous others.

The Decline of Indian Textiles

"The development of cotton industries in Britain affected textile producers in India in several ways. First: Indian textiles now had to compete with British textiles in the European and American markets. Second: exporting textiles to England also became

increasingly difficult since very high duties were imposed on Indian textiles imported into Britain.

By the beginning of the nineteenth century, English made cotton textiles successfully ousted Indian goods from their traditional markets in Africa, America and Europe. Thousands of weavers in India were now thrown out of employment. Bengal weavers were the worst hit. English and European companies stopped buying Indian goods and their agents no longer gave out advances to weavers to secure supplies. Distressed weavers wrote petitions to the government to help them.

But worse was still to come. By the 1830s British cotton cloth flooded Indian markets. In fact, by the 1880s two-thirds of all the cotton clothes worn by Indians were made of cloth produced in Britain. This affected not only specialist weavers but also spinners. Thousands of rural women who made a living by spinning cotton thread were rendered jobless. [...]

What happened to the weavers and spinners who lost their livelihood? Many weavers became agricultural labourers. Some migrated to cities in search of work, and yet others went out of the country to work in plantations in Africa and South America. Some of these handloom weavers also found work in the new cotton mills that were established in Bombay (now Mumbai), Ahmedabad, Sholapur, Nagpur and Kanpur.” (Selected passages from the textbook...) paragraph 3 of Chapter 7, page 85

Nevertheless, it represents only one perspective or prevailing part of the narrative. The colonial modernity facilitated by industrial capitalism offered many castes a means to dissolve caste barriers in occupation and envision emancipatory prospects. For instance, the British Military Services and Railways were crucial in enhancing the material conditions and fostering anti-caste awareness among the Mahars, who were before considered an untouchable tribe in Maharashtra.

Therefore, while NCERT textbooks recognise the absence of a singular past and hence apply a plural label 'our pasts', they do not adequately comprehend and integrate the various experiences of colonialism.

The content strongly focusses on the class aspect and deliberately avoids addressing the socioeconomic realities of the society. This phenomenon is seen in the following example:

“Weavers often belonged to communities that specialized in weaving. Their skills were passed on from one generation to the next. The tanti weavers of Bengal, the julahas or momin weavers of North India, sale and kaikollar and devangs of south India are some of the communities famous for weaving.” (Selected passages from the textbook...) paragraph 1 of Chapter 7, page 85

Weavers' social status is not discussed in this passage, nor is their position within the caste system disclosed. Thus, this is where the silence on caste is evident.

In recent years, efforts have been made to address these concerns by incorporating more content about marginalized communities into NCERT history textbooks. For example, the textbooks now include sections on the Bhakti and Sufi movements, which challenged social hierarchies and advocated for equality and justice. The contributions of Dalit leaders like Dr. B.R. Ambedkar in the fight for social justice and equality have also been given greater emphasis.

Despite these improvements, there remains a need for a more thorough and nuanced representation of marginalized communities. Enhancing this aspect of history education would provide students with a more inclusive understanding of India's past and promote respect for diversity. It is crucial that such representation goes beyond tokenism and genuinely reflects the complex and varied experiences of these communities.

Regional Histories

Another important aspect of diversity in history education is the representation of regional histories. India is a country of many regions, each with its own unique history, culture, and traditions. However, NCERT history textbooks have been criticized for focusing too heavily on the history of North India, particularly the Indo-Gangetic plain, at the expense of other regions.

For example, the history of South India, with its rich traditions of art, architecture, and literature, has often been given less attention in NCERT history textbooks. Similarly, the histories of the Northeast and other border regions have been marginalized or omitted altogether. This has led to concerns that students from these regions may not see their own histories and identities reflected in the national narrative, which can contribute to feelings of alienation and exclusion.

To address these concerns, there have been calls for a more balanced representation of regional histories in NCERT history textbooks. This would involve giving more space to the histories of different regions, as well as recognizing the contributions of regional leaders, movements, and cultures to the broader history of India. It is also important that regional histories are not presented in isolation but are integrated into the larger national narrative, highlighting the connections and interactions between different regions.

Recommendations for Improving NCERT History Textbooks

To effectively address the challenges and controversies surrounding NCERT history textbooks, it is crucial to adopt a comprehensive approach that enhances both the content and the pedagogical methods. Given the importance of history education in nation-building and the challenges and controversies surrounding NCERT history textbooks, there are several steps that can be taken to improve the content and representation of these textbooks:

Inclusive Representation:

NCERT history textbooks should be revised to include a more comprehensive representation of India's diverse cultures, communities, and regional histories. This would involve highlighting the contributions of marginalized groups, such as Dalits, Adivasis, and other historically oppressed communities, as well as recognizing the distinct historical narratives of various regions, including the Northeast, South India, and border states. By doing so, students would gain a more holistic understanding of India's past, promoting inclusivity and fostering respect for the country's cultural and social diversity. This would also help combat the existing bias towards certain regions or communities that are often overrepresented in national narratives.

Balanced Narratives:

To present history in a more nuanced manner, it is essential that textbooks provide balanced narratives that acknowledge the complexities of historical events. This includes presenting multiple perspectives on contentious issues, such as the impacts of British colonialism, the role of various dynasties and empires, and the nature of religious interactions in medieval India. Textbooks should strive to offer a fair representation of the contributions and challenges faced by different groups, without glorifying or vilifying any particular period or community. A balanced approach would help students appreciate the diverse and often contradictory elements that have shaped India's history.

Promotion of Critical Thinking:

History education should go beyond the rote learning of dates and events; it should cultivate critical thinking skills in students. Textbooks can achieve this by including questions and activities that encourage students to analyze historical sources, question established narratives, and consider alternative interpretations. For example, textbooks could present contrasting accounts of the same event and ask students to evaluate the credibility of each source. By fostering critical thinking, students would develop a deeper understanding of history and the ability to engage with different perspectives, preparing them to be informed and thoughtful citizens.

Academic Integrity and Independence:

The process of revising NCERT history textbooks must be guided by academic integrity and the principles of historical scholarship, rather than being influenced by political or ideological agendas. To ensure this, independent experts, including historians, educators, and scholars, should be involved in the textbook revision process. Their expertise would help ensure that the content is accurate, balanced, and free from bias. Additionally, the selection of these experts should be transparent and based on their academic credentials and contributions to the field of history, rather than their political affiliations.

Continuous Review and Update:

History is a dynamic field, with new research and interpretations constantly emerging. Therefore, it is essential that NCERT history textbooks are regularly reviewed and updated to incorporate the latest scholarship and historiographical developments. This would ensure that the content remains relevant, accurate, and reflective of contemporary historical understanding. A systematic review process, perhaps every five years, could be established, involving a panel of historians and educators who would assess the textbooks and recommend necessary updates. This would also provide an opportunity to address any identified gaps or biases in the existing content.

Integration of Subaltern and Regional Histories:

In addition to the broader narrative of Indian history, textbooks should integrate subaltern and regional histories that have traditionally been underrepresented. This includes the histories of women, laborers, peasants, and other marginalized groups, as well as the local histories of various regions. By incorporating these narratives, textbooks would provide a more comprehensive and inclusive account of India's past, highlighting the contributions of all sections of society. This approach would also help students understand the diversity of experiences and struggles that have shaped the nation.

Encouraging Diverse Source Material:

The use of diverse source material, including primary sources, oral histories, and archaeological evidence, should be encouraged in NCERT textbooks. This would not only provide students with a richer understanding of history but also expose them to different types of evidence and ways of knowing. By engaging with a variety of sources, students can develop the skills needed to critically analyze and interpret historical information. Additionally, incorporating visual sources, such as maps, photographs, and artwork, can help make the study of history more engaging and accessible to students.

Incorporating Global Perspectives:

While the primary focus of NCERT history textbooks should be on Indian history, it is also important to incorporate global perspectives that place India's past in a broader context. This could include sections on India's interactions with other civilizations, the impact of global events on India, and India's contributions to world history. By providing students with a global perspective, textbooks would help them understand how India's history is interconnected with the rest of the world, fostering a more comprehensive and nuanced understanding of the past.

Teacher Training and Support:

Improving the content of history textbooks is only one part of the solution; it is equally important to provide teachers with the training and resources they need to effectively teach history. This includes professional development programs that focus on new pedagogical approaches, such as inquiry-based learning and the use of primary sources,

as well as support in addressing controversial or sensitive topics. Teachers should also be encouraged to use supplementary materials and innovative teaching methods that go beyond the textbook, helping students engage more deeply with the subject matter.

By implementing these recommendations, NCERT history textbooks can be transformed into more inclusive, accurate and engaging resources that not only educate students about the past but also equip them with the skills and knowledge needed to navigate the complexities of the present and future.

Conclusion

History education is a vital component of nation-building, shaping the collective memory and identity of a nation. In India, NCERT history textbooks play a central role in this process, providing students with the knowledge and understanding of their country's past. However, the challenges of creating a balanced and inclusive history curriculum in a diverse society like India are significant, and NCERT history textbooks have been the subject of much debate and controversy.

To enhance the role of history education in nation-building, it is essential to address the issues of inclusivity, representation, and balance in NCERT history textbooks. By incorporating diverse perspectives, promoting critical thinking, and maintaining academic integrity, these textbooks can help foster a more inclusive and nuanced understanding of India's past, which is essential for the development of a cohesive and united nation.

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Transforming Teaching and Learning with Open Educational Resources

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Abstract

The integration of Open Educational Resources (OER) into the Indian education system represents a transformative shift towards more inclusive and accessible learning. This research paper explores the potential of OER to enhance teaching and learning in India by examining its role in expanding access and fostering equitable learning environments. Through an analysis of various initiatives like SWAYAM, Shodhganga, NDLI, FOSS, e-Acharya, Virtual Labs, NPTEL, and e-Gyankosh, the paper highlights how these resources contribute to bridging educational gaps and improving the quality of education. The study also discusses the benefits of OER, including cost savings, flexibility, and increased accessibility, and considers the challenges and future directions for their effective integration into the educational framework. By providing a comprehensive overview of OER's impact, this research aims to offer insights into how these resources can advance educational practices and support lifelong learning in India.

Keywords: Education, Open Education Resources, Indian Open Education Resources

Introduction

In an era where educational resources are pivotal to student success, Open Educational Resources (OER) offer a transformative approach to learning, particularly in India's diverse and complex educational landscape. As education evolves, OER represents a significant shift towards greater accessibility and inclusivity. These resources are made publicly available and are distributed under copyright licenses that permit sharing, accessing, and repurposing (Bhattacharyya, 2022). The variety of open educational resources enables both teachers and students to access content tailored to their specific needs (Yadav, 2024).

These resources provide a solution to the challenges faced by India's education system, such as disparities in resource distribution and accessibility. The need for accessible and

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adaptable educational materials has driven the rise of Open Educational Resources (OER) as a revolutionary solution (Thuon&Jhang, 2024).OER revolutionizes education by making high-quality course materials more accessible according to their option (Deivam&Deviki, 2020).This adaptability is especially crucial for addressing the dual challenge of expanding access to quality education while catering to the varied needs of a vast student population. By leveraging digital platforms and collaborative content development, OER helps bridge gaps in resource availability, supporting a more equitable and effective educational environment, particularly in remote and underserved regions.

These resources aim to enhance learning and teaching by providing high-quality content without the financial barriers associated with traditional educational materials.Dutta (2016) noted that the use of Open Educational Resources can significantly alleviate the major issues associated with educational materials.OER can include a wide variety of content, such as:

- **Textbooks:** Complete books or chapters available in digital format.
- **Course Materials:** Lecture notes, syllabi, and other resources used in educational courses.
- **Videos:** Educational videos or tutorials on various subjects.
- **Images:** Illustrations, diagrams, and photos used for educational purposes.
- **Assessment Tools:** Quizzes, tests, and other tools for evaluating learning.
- **Software Applications:** Educational software or tools that support learning activities.
- **Interactive Simulations:** Digital simulations and exercises that facilitate experiential learning.
- **Articles and Research Papers:** Scholarly articles and papers that contribute to academic discourse.

OERs are crafted to be flexible, enabling users to adjust and tailor content to meet their unique educational requirements and contexts. Their open licensing fosters the sharing and reuse of knowledge, which enhances collaboration and inclusivity in the educational landscape.

SWAYAM

The Swayam and SwayamPrabha platforms aim to provide education to everyone (Sivakumar, 2019). SWAYAM (Study Webs of Active-learning for Young Aspiring Minds) is an Indian government initiative designed to make education accessible to all through online learning. It provides a diverse range of courses across multiple disciplines, catering to students, professionals and lifelong learners. The available course categories include Engineering and Technology, Science, Social Science, Humanities and Arts, Social Sciences, Management and Commerce, Education, Law, Health & Medicine, Agriculture and Skill Development. Each course is typically structured with video lectures, reading

materials, quizzes, and assignments. These courses are provided by leading Indian institutions and are free to access, with an optional fee for certification. Therefore, it is accurate to say that the SWAYAM portal is digitalizing the education system and reaching remote areas across India, contributing to the goal of education for all (Singh & Chauhan, 2017).

Shodhganga

Shodhganga is a digital repository managed by the INFLIBNET Centre, specifically designed to store Indian electronic theses and dissertations. It provides a platform for research scholars to deposit their Ph.D. theses, making them accessible to both the academic community and the public. This repository boasts a comprehensive collection of theses from Indian universities, offering valuable resources for research and study. By increasing the visibility and impact of research work, Shodhganga maintains high standards of quality and consistency in the submission and archiving process. Its user-friendly interface facilitates easy searching, browsing, and retrieval of documents based on various parameters such as author, title, subject, and university. Moreover, Shodhganga aids Indian universities in complying with the UGC mandate to submit electronic versions of theses and dissertations.

National Digital Library of India

The National Digital Library of India (NDLI), managed by the Ministry of Education, is a comprehensive digital repository catering to students, researchers, and the general public. It serves as a rich repository of knowledge and information, offering a wide array of lectures, courses, and archives in various media formats, all curated and developed by India's top institutions (Deivam, 2021). It provides access to an extensive range of educational materials, including books, journals, research papers, theses, and other academic resources across various disciplines. NDLI's advanced search functionalities allow users to easily locate and access these materials. By offering many resources for free, it promotes inclusive education and lifelong learning. The user-friendly interface further enhances the experience, supporting the educational and research needs of users by providing a centralized platform for accessing high-quality educational content.

Free and Open Source Software in Education

Free and Open Source Software (FOSS) refers to software that is freely licensed, allowing anyone to use, copy, study, and modify it as well as the source code is openly shared, encouraging users to voluntarily enhance and improve the software's design (Nayal et al., 2021). It is pivotal in education by providing cost-effective, customizable and accessible tools for learning and teaching. Utilizing Free and Open Source Software (FOSS), a branch of Information and Communication Technology (ICT) can help lower the costs associated with purchasing software (Thankachan & Moore, 2017). Without the burden of expensive software licenses, FOSS offers an affordable solution for educational institutions and students. Its adaptability allows institutions to tailor the software to their specific needs, thereby enhancing the educational experience. The open distribution and sharing nature of FOSS ensures that educational resources are

globally accessible, promoting inclusive education. Furthermore, FOSS encourages collaboration among educators, developers and students, fostering a community of shared knowledge and ongoing improvement. It also equips students with essential skills in coding, software development and problem-solving, which are crucial in today's job market. Notable examples of FOSS in education include Moodle, a versatile learning management system; LibreOffice, an open-source office suite; GIMP, a robust image editing software; Scratch, a programming language for creating interactive stories and games. Incorporating FOSS into the educational system enriches learning experiences, enhances digital literacy and ensures that education is accessible to everyone, irrespective of financial limitations.

e-Acharya

e-Acharya is a digital platform created to advance education and professional development by offering a diverse array of online courses and resources. Designed to cater to learners at different levels and in various fields, e-Acharya provides features such as comprehensive course catalogs, interactive learning materials, and certification options. Its intuitive interface is aimed at making learning flexible and accessible for students, professionals, and lifelong learners alike. By utilizing digital technology, e-Acharya plays a crucial role in broadening educational opportunities and fostering continuous learning and skill enhancement.

Additionally, NCERT will provide e-content links to e-Acharya, while NIOS will supply content on HDD to the e-Acharya repository. Both organizations will ensure that all content, including e-books, is available on e-Acharya (National Convention on Digital Initiatives for Higher Education, 2017)

Virtual Labs

Virtual laboratories are technology-mediated learning environments that can be either two-dimensional (2D) desktop simulations or three-dimensional (3D) virtual reality (VR) settings with head-mounted displays (Reeves & Crippen, 2021). Virtual Labs also known as a remote lab is an interactive online simulation tool that replicates real-world phenomena in a virtual environment (Lynch & Ghergulescu, 2017). It is a groundbreaking initiative aimed at enhancing science and engineering education by providing remote access to laboratory experiments and simulations. By overcoming geographical and resource limitations, Virtual Labs allow students to perform experiments from anywhere, offering a cost-effective alternative to traditional labs by minimizing the need for physical infrastructure and equipment. This accessibility is especially advantageous for institutions with limited resources.

One of the key benefits of Virtual Labs is the safety they ensure, enabling students to conduct experiments in a risk-free environment, which is essential when dealing with hazardous materials or intricate procedures. Additionally, Virtual Labs offer flexibility in terms of timing and pacing, allowing students to repeat experiments and explore concepts at their own speed, thereby enriching their learning experience. Amrita Virtual

Lab, IIT Bombay Virtual Lab, and MIT's Interactive Simulations (PhET), which cover a broad range of subjects like physics, chemistry, biology, and engineering.

National Program on Technology Enhanced Learning

The National Program on Technology Enhanced Learning (NPTEL), is a collaborative educational initiative spearheaded by the Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc), has delivered an e-learning platform to millions of learners in India (Nitonde, 2018). It provides an extensive range of online courses covering disciplines such as engineering, science, management, and humanities, all created and delivered by distinguished faculty members from these leading institutions. The program offers high-quality educational content through video lectures, assignments, and quizzes, ensuring a well-rounded learning experience. While access to the courses is free, certification is available for a nominal fee. NPTEL partners with various industries to ensure that the courses meet current industry standards and requirements. Utilizing the Massive Open Online Courses (MOOC) model, NPTEL supports a large number of learners with the flexibility for self-paced study, making it suitable for students, working professionals, and lifelong learners alike.

e-Gyankosh

Numerous higher education and research institutions, both in India and abroad, have established institutional digital repositories to meet the demand for access to e-resources, as an institutional repository (IR) serves as a significant indicator of an institution's academic and research quality (Chakraborty & Chakraborty, 2021).

Role of Institutional Repositories in E-Learning: A study on eGyankosh of

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e-Gyankosh is an extensive digital repository and learning management system created by the Indira Gandhi National Open University (IGNOU) to improve distance education. This platform offers a wide range of educational resources, including course content, textbooks, study materials, and multimedia resources across various disciplines. It is accessible to students, educators, and researchers, enabling them to download and use materials from anywhere with an internet connection, thereby facilitating flexible learning and teaching. As a vital resource for distance education, e-Gyankosh allows learners to access educational content and support services remotely, which is especially important for those who cannot attend traditional classroom settings. The system also functions as a robust Learning Management System (LMS), providing tools for course management, student tracking, and interaction between students and faculty. Its open-access model supports inclusive education and lifelong learning, and by

integrating with IGNOU's programs, e-Gyankosh ensures that students have the necessary materials for their coursework and exams.

Benefits of Open Educational Resources (OER) in Indian Education

Open Educational Resources (OER) offer numerous advantages for the Indian education system, fostering accessibility, inclusivity, and quality in learning. Here are the key benefits:

- **Cost Savings:** OER substantially lowers the expenses associated with textbooks and educational materials. This reduction in costs benefits students, educators, and institutions by making learning resources more affordable and accessible.
- **Increased Accessibility:** By providing free and open access to quality educational materials, OER ensures that learners from various socio-economic backgrounds and locations can access essential resources, thus fostering educational equity.
- **Flexibility and Customization:** OER enables educators to adapt and modify resources to suit the specific needs of their students. This customization allows for personalized learning experiences that accommodate different learning styles and curriculum demands.
- **Enhanced Collaboration:** OER encourages collaboration among educators, institutions, and students. Teachers can share resources, collaborate on content development, and leverage a global network of educators, which enhances knowledge sharing and collective growth.
- **Support for Inclusive Education:** OER can be created in multiple formats—such as text, audio, and video—to support diverse learning needs, including those of students with disabilities. This variety ensures that all students have access to appropriate educational content.
- **Continuous Improvement:** The open nature of OER allows for ongoing updates and enhancements. Educators can contribute to a continuously evolving repository of resources that reflects the latest research, best practices, and technological advancements.
- **Empowerment of Educators:** OER empowers teachers to create, modify, and share their own educational materials. This freedom fosters innovation in teaching practices and helps educators address their students' needs more effectively.
- **Promotes Lifelong Learning:** OER supports lifelong education by providing accessible resources beyond traditional classroom settings. This accessibility enables learners of all ages to continue their education and professional development through a variety of open materials.
- **Encourages Innovation:** By offering flexible and open resources, OER fosters innovation in teaching and learning. Educators can experiment with new methods and technologies, incorporating creative pedagogical approaches into their practice.

- **Global Reach and Impact:** OER has the potential to reach a global audience, overcoming geographical and institutional barriers. This wide reach facilitates the sharing of knowledge and resources across different educational contexts and cultures, promoting a more interconnected and collaborative educational community.

Conclusion

The integration of Open Educational Resources (OER) into the Indian education system holds significant promise for advancing teaching and learning. By offering freely accessible high-quality educational materials, OER addresses critical challenges such as limited access to resources and high educational costs. Initiatives like SWAYAM, Shodhganga, e-Acharya, NDLI, FOSS, Virtual Labs, NPTEL, and e-Gyankosh exemplify how OER can enhance educational experiences, support diverse learning needs, and foster a more equitable educational environment. The flexibility and adaptability of OER allow for customization to meet local contexts, promoting personalized learning and encouraging innovation in teaching methods. However, to fully realize the benefits of OER, continued efforts are needed to address challenges such as digital literacy, resource quality and sustainability. By leveraging OER effectively, India can make significant strides towards an inclusive and accessible education system that supports lifelong learning and empowers learners across the country.

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Sustainable Technology in Education

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Abstract

Technology in education marks the trends towards enriching the online tools and their employability as a powerful instrument. The use of technology in education has various perspectives as it enriches and enhances the educational process for both teacher as well as learner. It has altered the learning process for the pupils by enabling them to retain information on a large scale and the sustainable technology in education highlights the transformative role of integrating digital tools and practices to foster ecological awareness, resource efficiency, and a deeper understanding of sustainability concepts within educational settings. This approach does not only enhance learning experiences through interactive resources and virtual collaborations but also cultivates critical thinking, problem-solving, and innovation. The present study, based on the secondary data, highlights about the students with digital literacy skills and encouraging real-world application of sustainability knowledge. This is integration prepares them to address global challenges and become proactive advocates for a more sustainable future. Results indicate that online courses, virtual reality field trips, collaborative projects, etc. showcase the diverse ways to sustainable technology that can shape environmentally conscious 21st century citizens who are capable of driving positive educational environmental change on both local and global scales.

Keywords: Curriculum, Education, Sustainable Development, Teacher Role

Introduction

The use of technology tools in educational system to all learners is to apply and use the concept of computers, technological skills, etc. to enhance learning, problem-solving strategies, etc. and technology integration is the use of digitalization is to increase and support the best educational environment (Almufarreh, A.2021). In classroom, it results

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in supporting classroom instruction by creating opportunities for learners so that they can complete assignments on the computer instead of normal pencil and paper (Klimova, B.(et.al) *Systems*, 2023). The advancement in technology is enhancing the quality of education through online education which is really worth-mentioning. Gunning and Aha (2019) found that “the recent scenario of ‘artificial intelligence’/‘the Internet of Things ’has become its own domain of research due to finding difficulty in understanding how they work.” It becomes more difficult in this complex era for scholars to seek into the technological advancements and developments that enable to change life around the world in each way and there is requirement of shaping the technology through its development and designing using social, political, legal, etc. tools in beneficial directions and steps of whole world-wide towards regulating computer technologies. It is reconsidered about the rules that govern global data flows as well as exchange of technology across borders and is the crucial time not only for the development in technological domains as well as for the policies implemented for advancement of these in more advanced form, providing a better vision to the society (Barret, P. 2008). The fact is that how we understand that they can best be protected and constrained and the role of governmental and institutional policies is not far away for implementing the structures of technological systems and the integration of sustainable technology into 21st century education that represents a transformative approach to learning that does not only equip students with essential skills for the future but also fosters a sense of environmental stewardship and responsibility. It encompasses the use of digital tools, resources, and practices that promote ecological awareness, resource efficiency, and a deeper understanding of sustainability concepts and this integration can occur at all levels of education, from primary schools to universities and involves the integration of environmentally friendly and energy-efficient technologies into educational institutions and processes and not only reduces the environmental impact of education but also educates 21st century students about sustainable practices and prepares them for a world where environmental considerations are crucial (Burbules, N.C. (et.al)., 2020).

Objectives of the Study

- ❖ To study key aspects of sustainable technology in 21st century education system
- ❖ To know the benefits of integrating sustainable technology in education
- ❖ To view the examples of integrating sustainable technology in education

Methodology

The present study, based on secondary data, concentrated on textual approach. Articles and papers published in various National and International Journals have been considered to do the framework of the study titled “Sustainable Technology in Education”.

Sustainable Technology

It is the use of technology to consider environmental, social, economic, etc. factors towards reducing environmental and ecological risks, creating sustainable products, and promoting economic and social development. It can also involve using information technology in a way that minimizes its environmental impact and maximizes its long-term sustainability. It prevents contamination, and other negative environmental impacts through its use (Grimus, M. Germany., 2020)

Sustainable Technological Innovations

- ❖ Artificial Intelligence
- ❖ Energy Recycling
- ❖ Energy Storage
- ❖ Block Chain
- ❖ Renewable Energy
- ❖ Green Construction, etc.

Literature Review

Schumpeter (1942) was studied technology as a source of tremendous optimism which can help for meeting various challenges that we people are facing and it is a vital economic driver for those believing in the power of innovation for advancing economic development, leads to better quality of life. (Vincenti1993; Winner 1980) found that the technologies designed may have applicability in social and political spheres and the pressure is on technologists who have applied the results of their decisions in designing of technology. Oberdiek and Mary Tiles (1995) found users having a keyword describe a technology and the system that returns the prediction of improvement for the technological domain. Marx (2010) was explained that emergence of technology has its roots in the nineteenth and twentieth century's that has noticed a shift from the individual view of technology to the more dangerous one and the progress was semiautonomous form which was part of more complex technological systems. (Darling-Hammond, 2010: Stewart, 2012) was found that innovations are the difficult way of going into the school system. Innovations provide the learners a right platform to integrate global education ideas and information for preparing teachers globally. Gunning, David, and David (2019) discussed that "On-line education allows the learners a shift from static learning materials to changing and interactive media content. Kilovaty (2020) was studied that "technology related companies are unable to lead in their creations. There is also fear for exerting too much power, in some cases, replacing governments and international organizations make decisions, there by affecting millions of people worldwide. Further, it regulates access to information as well as audiences." Baer and James (2021, p. 168) illustrated that tools. Programs, services, etc. are the building blocks of twenty-first century learning. are tools and important technological

innovations including the web-enabled information storage and retrieval systems, digital resources, games, and simulations.

Role of Technology in Education

Enhanced Inclusion: Online education provides a better way of learning for pupils working full-time even in remote areas in their own time. Due to inaccessibility to traditional schooling, pupils can learn with work at their own pace and are able to pursue education on getting this kind of opportunity and it enables the teachers to emphasize on personalized learning in classrooms, thereby helping to every kind of individual (Marx, L., 2010). Through online, it is possible to receive excellent education remotely in various institutes offering online courses and inclusion in education is brought globally through technology and advancement world-wide.

Advanced Accessibility: Online education technologies have a key role to allow access to the latest and best information available towards updating the print materials like textbooks which can become outdated quickly with old information (Riina, V. 2020). Using online information makes educational sources relevant and updated, thereby integrated into the learning process and the role of technology becomes vital as a variety of online resources and information are accessible to the pupils. It further allows and encourages them to carry out their own research, thereby becoming more independent. Technology, using instructional videos and audio streams, enables the learners to simplify learning by making complex concepts simpler.

Better Efficiency: Teaching tasks have now been easily accessible for the pupils on account of technology and online interactive system which is related to technology-related keywords along with their improvement strategies and in the classroom, online quiz is arranged by the teacher for to all students. It also provides quick results and also feedback to the learners. The need for the teacher is also eliminated if the teacher goes through the quiz of each child and educators enable the learners to employ technology for scheduling separate group or individual lessons and producing personalized content.

Higher Engagement: There is a shift from the outdated school setting to an online learning platform, thereby permitting educators for employing more interactive tools and methods. In this way, the learners find engaging to a new system and in consequence learners often learn faster and engage in online classes. Learners are not only passively listening to a teacher and reading textbooks but also participating in engaging academic activities as well.

Sustainable Technology in Education: Key Aspects

Greenbuildingdesign: Constructing eco-friendly and energy-efficient educational institutions buildings using sustainable materials, natural lighting, and efficient insulation.

Energy Management Systems: Installing smart systems that regulate lighting, heating, and cooling to minimize energy consumption.

Renewable Energy Sources: Incorporating solarpanels, windturbines/otherrenewable energy sources to power educational facilities.

E-books and Digital Textbooks: Using electronic resources instead of traditional paper textbooks to reduce paper consumption and waste.

Online learning platforms: Providing digital platforms for course delivery, assignments, and discussions, reducing the need for physical materials.

Virtual Reality (VR) and Augmented Reality (AR): Using these technologies to create immersive educational experiences, reducing the need for physical travel.

Webinars and Online Lectures: Conducting virtual classes and lectures to minimize the carbon footprint associated with commuting.

Energy-Efficient Devices: Using computers, tablets, and other devices that meet energy efficiency standards.

Cloud Computing: Storing and accessing data in the cloud to reduce the need for on-premises server infrastructure.

Digital Assignments and Assessments: Minimizing paper usage by utilizing digital tools for assignments, tests, and quizzes.

E-waste Management: Properly recycling and disposing of electronic devices to prevent harmful waste.

Sustainable Curriculum Integration

Environmental Education: Incorporating sustainability relates topics into the curriculum to educate students about ecological issues and responsible practices.

STEM Education: Teaching students about renewable energy technologies, water conservation, and sustainable agriculture.

Sustainability Initiatives: Engaging students in projects that address local environmental challenges, such as community gardens/waste reduction programs.

Awareness Campaigns: Organizing events, workshops, and seminars to raise awareness about sustainable practices.

Green Data Centers: If the educational institution operates data centers, implementing energy-efficient technologies to reduce the carbon footprint of data storage and processing.

Collaborative Online Tools: ~~Online collaboration tools:~~ Using digital platforms to facilitate group projects and discussions, reducing the need for physical meetings.

Eco-Friendly Materials: Choosing sustainable and recycled materials for educational resources, furniture, and equipment and by embracing sustainable technology in education, institutions can serve as role models for environmentally responsible

practices and educate future generations about the importance of preserving the planet.

Sustainable Technology in Education: Benefits

- ❖ It offers interactive and engaging learning experiences that can cater to different learning styles.
- ❖ Multimedia resources, simulations, virtual field trips, and educational apps provide diverse ways to explore sustainability concepts.
- ❖ It enables students to connect with peers and experts from around the world, fostering a global perspective on sustainability challenges and solutions.
- ❖ Virtual collaborations and online discussions facilitate cross-cultural understanding.
- ❖ It allows students to apply theoretical knowledge to real-world scenarios.
- ❖ It analyzes data related to environmental issues, create sustainable solutions using digital tools, and understand the impact of human activities on the planet.
- ❖ It encourages critical thinking as students analyze complex environmental issues, assess potential solutions, and make informed decisions.
- ❖ Students learn to evaluate the environmental, economic, and social implications of various choices.
- ❖ Digital textbooks, online learning platforms, and virtual classrooms reduce the need for paper-based materials and physical resources, contributing to resource conservation.
- ❖ Interactive tools and simulations can help students visualize and understand abstract environmental concepts.
- ❖ It enhances their awareness of ecological processes, biodiversity, climate change, and more.
- ❖ It equips students with digital literacy skills that are essential in today's rapidly evolving world.
- ❖ It empowers them to continue learning beyond formal education and stay updated on sustainability advancements.
- ❖ It encourages students to use technology to develop sustainable solutions cultivates creativity and innovation.
- ❖ Students can design and prototype eco-friendly products, sustainable urban plans, and renewable energy systems.

Integration of Sustainable Technology in Education

Education plays a key role in sustainable development in terms of changing behavior of people to achieve the sustainability development goals. On this, technology can be used

to enhance education for sustainable development (ESD) through influencing learners' behavior and to evaluate such behavior change. In order to effectively apply technology to support ESD, a strong partnership between educators and technologists is needed in order to unlock the potential of both sides and to create synergies through specialization. Partnership with technologists benefits educators in several ways, such as speeding up innovation process in education, stimulating fresh teaching ideas, improving learners' experience, widening access to skills and resources, etc. Moreover, partnership opens the opportunity for both sides to share their knowledge, expertise, Integrating technology with the learning process for creating sustainable development has many benefits. Such blending can lead to a trans-disciplinary approach to address societal challenges. It will also equip students and teachers to shift their focus from what of thinking to how. Today, different departments/ schools in academic institutions are working in silos and there is no common language for communication. It is emerging as the biggest stumbling block in our efforts to achieve SDGs. The stakeholders have to plan elaborate programmes for teachers to understand, appreciate and implement integration of digital technologies in classroom teaching. Such integrations will open new vistas for research, benefitting all communities and sections. The quality of life and the happiness index of society can be improved. The world will witness social justice, peace, climate justice, collaboration, sustainable development, lesser inequality and poverty and so on.

Integration of Sustainable Technology in Education: Examples

Online Sustainability Courses: Educational institutions offer online courses and modules focused on sustainability, allowing students to access quality education from anywhere.

Virtual Reality Field Trips: Virtual reality technology enables students to explore ecosystems, natural habitats, and even remote locations with immersive experiences, reducing the need for travel.

Interactive Simulations: Simulations can illustrate complex environmental processes, such as carbon cycles or the impact of deforestation, providing a dynamic way for students to grasp these concepts.

Green Campus Initiatives: Educational institutions can implement sustainable practices on campus, such as energy-efficient buildings, renewable energy sources, waste reduction programs, and smart lighting systems that serve as educational models.

Online Collaborative Projects: Students from different regions can collaborate on sustainability projects using online platforms, sharing insights and solutions to global environmental challenges.

Conclusion, Discussion and Summary

Technology in education is the trends towards enriching the online tools and its employability and it is such kind of tool that develops and enhances the process of education for both teacher as well as learner (Vincenti, Walter., 1993). The use of technology in education has altered the learning process in the way that all 21st century

students are able to retain information on a large scale towards a fundamental part of learning where the role of teacher is not denial and the e-learning environment provided by the teacher can enhance the quality of education, where the teacher changes her role as the only source of knowledge and the true development of human social aspect, social, moral, aesthetics, etc. values as the goals of education, has required the existence of teacher as well as face to face contact with his/her learners. All this has great impact on the educated human training. The need of the hour is that educators should propose such policies that its development and application should best suit the 21st century teachers as well as ~~and their~~ students world-wide. The integration of sustainable technology in education holds immense promise for shaping a generation of informed and environmentally conscious individuals and by leveraging digital tools, interactive resources, and virtual experiences, educational institutions can create engaging learning environments that transcend traditional boundaries. This approach not only equips students with the solid understanding of sustainability principles but also empowers them with the skills needed to address complex ecological challenges and as students engagewith simulations, virtual field trips, and collaborative online projects, they gain a deeper appreciation for the interconnectedness of the natural world and human activities and develop the ability to think critically, analyze data, and propose innovative solutions to pressing environmental issues. Moreover, the adoption of sustainable technology in education fosters a sense of responsibility, encourages students to apply their knowledge to real-world scenarios and contributes to sustainable practices in all communities.

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How to Flip the Traditional Lecture for AI powered Digital Natives with Micro-Attention Spans?

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Abstract

We are dealing with a new generation, one that was raised in a technologically advanced society and is enabled by artificial intelligence (AI). Consequently, it seems that teaching AI-powered digital natives who are always distracted by technology is the next big problem in education. These days AI completely rewrites the rules of "who leads learning." Virtual mentors and teaching bots create learning pathways, assign homework, provide feedback, and instant results. Students are always the center of attention in any teaching-learning system. The National Education Policy (NEP) 2020 recognizes the need for a transformative shift in education. It emphasizes holistic learning and aims to create well-rounded individuals who possess essential skills for the 21st century. Therefore, Pedagogy must evolve to make learning experiential, inquiry-driven, and enjoyable. The new guidelines necessitate a shift from conventional teaching practices to a student-centric approach that promotes interactive and experiential learning. The paper delves into the concept of Student Centred Learning as an answer to transforming old ways of lecturing for digital natives with limited attention spans.

Keywords: Digital Natives, Student Centred Learning, Experiential Learning, NEP 2020, Active Learning

Introduction

India's educational traditions are deeply ingrained in the evolution of the lecture as a teaching style. The change from the oral traditions of the Gurukul system to lectures in the classroom is a reflection of larger changes in educational ideologies, pedagogical practices, and social structures. In ancient India, oral teaching predominated. Under the Gurukul system, which was in use during the Vedic era (around 1500–500 BCE), pupils received oral instruction directly from their gurus (teachers). In this setting, the lecture was a conversation or discourse in which the guru would quote passages from scripture or transmit knowledge that the pupils were to learn by heart and then discuss (Thapar,

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R., 2002). Recitation, introspection, and listening were the main methods of instruction. After the 12th century, the educational system started to include aspects of Persian and Arabic customs. Madrasas, rose to prominence as major hubs of knowledge. Lectures assumed a more structured role, with instructors presenting talks based on writings by classical scholars. In contrast to the Gurukuls' oral legacy, the madrasas placed a strong emphasis on text-based instruction. Students took notes and participated in discussions during lectures (Ali, S. M., 2001).

Globally, ancient Greece and Rome are considered the origins of the traditional lecture model. Philosophers such as Socrates, Plato, and Aristotle taught primarily by oral discourse in ancient Greece. Compared to the current lecture, their method was more interactive and dialogic. This tradition laid the foundation for the lecture model by emphasizing the spoken word as a means of knowledge transmission (Bligh, D. A., 2000). The European universities of the Middle Ages, such as the University of Bologna (1088) and the University of Paris (1150), were the first to formalize the lecture (Haskins, C. H., 1923). Because books were expensive and scarce, lecturers would often read aloud from texts while offering commentary and interpretations. This procedure, called "lectio," directly precedes the lecture as we know it today. The primary responsibility of the lecturer was to impart authoritative knowledge to the pupils, who were supposed to pay attention and take notes. When there was little access to written material, this strategy worked well for spreading knowledge. Throughout the Renaissance and the Age of Enlightenment, the lecture model endured and spread throughout Europe, eventually spreading to the Americas as a regular teaching methodology. The lecture model was further cemented during the Industrial Revolution as education systems grew and classrooms became more uniform (Brockliss, L. W. B., 1996).

In India, the introduction of Western education throughout the 18th to mid-20th century British colonial era significantly altered the format and subject matter of lectures. The main form of education in British schools and colleges was lectures, which were fashioned after universities in Europe. Many of the British colonial structures were kept in the Indian education system after the country gained independence in 1947, although they were gradually modified to fit the requirements of a developing country. In Indian colleges and universities, the lecture technique remains a popular teaching strategy, despite initiatives to replace it with more interactive and student-centered teaching methods and even after new techniques emerged in the 20th century. The conventional lecture model is criticized for frequently encouraging passive learning and failing to actively engage pupils especially the digital natives.

Marc Prensky first used the term "digital natives" in 2001 to refer to those born in the post-1980s and exposed to computers, internet, and other digital devices from a young age. They are in contrast to "digital immigrants," who had to adjust to digital technology later in life. Prensky defined digital natives as "native speakers" of the digital language in his groundbreaking article "Digital Natives, Digital Immigrants." Prensky contends that because digital natives have grown up immersed in digital settings from an early age, they understand and process information fundamentally differently from earlier

generations. The majority of digital natives are accustomed to multitasking, prefer pictures over words, and are more likely to reward themselves frequently and with quick gratification. Because they've become used to the pace and interactive nature of digital tools, they frequently anticipate having access to information quickly and easily.

Expanding on Prensky's idea, John Palfrey and Urs Gasser highlight the social and cultural ramifications of growing up in a digital age by pointing out that digital natives view privacy, information sharing, and online identity differently from earlier generations (Palfrey, J. and Gasser, U., 2008). The notion of digital natives has gained a lot of traction, but it has also come under fire for undervaluing the variety of technology use throughout age groups and oversimplifying generational distinctions. According to researchers like Bennett, Maton, and Kervin (2008), the concept of "digital natives" may exaggerate how tech-savvy younger generations are while ignoring the complexity of their digital skill set.

As digital natives have grown up in the digital age and are constantly exposed to fast-paced, highly stimulating digital content, the term micro-attention span has gained significance in conversations concerning them. The propensity to quickly shift attention between tasks or stimuli and frequently only spend a few seconds on each before moving on is referred to as a micro-attention span. This conduct is intimately linked to multitasking and regular use of digital devices.

The Problem with the Traditional Lecture Method

The fundamental incompatibility of the traditional lecture format with the inclinations of digital native learners is the root of the issue. These students are used to interactive, personalized, and multimodal learning experiences, so traditional lectures frequently fall flat with them. Reduced attention, engagement, and recall are some of the problems brought on by this divergence, underscoring the need for instructional strategies that more closely match the cognitive and behavioral characteristics of digital natives.

Literature Review

For educators and researchers looking to create instructional tactics that work, it is essential to comprehend the cognitive and behavioral characteristics of digital natives. Researches have looked into how these people's upbringing in a digital world affects their behavior, thought processes, and learning styles.

The multitasking behavior of digital natives was studied in a seminal study by Ophir, Nass, and Wagner (2009). The study found that those who multitask a lot with media are less able to focus their attention cognitively and are more likely to become distracted. The main conclusion they came to was that while multitasking may be more common among digital natives, it might also cause cognitive problems such as trouble focusing on the task at hand and sifting through extraneous information. Those who are constantly surrounded by digital media may have cognitive alterations that affect how they interpret information (Carr, N., 2010). Instead of reading deeply and intently, they frequently scan and skim text. The nature of internet information, which frequently

promotes rapid consumption over in-depth examination, has an impact on this behavior. Digital natives may have trouble understanding complicated texts deeply and continuously, but they are frequently better at finding and evaluating information fast.

Rosen and colleagues' study on media-induced task-switching revealed that digital natives routinely transfer their focus between tasks, usually in a matter of minutes or even seconds (Rosen, L. D., Carrier, L. M., & Cheever, N. A., 2013). While this habit could be helpful in fast-paced digital environments, it can cause problems in situations where sustained concentration is needed, like traditional academic lectures. Because digital media is fast-paced and fragmented, it is expected that digital natives will have shorter attention spans. According to Marc Prensky, those who identify as digital natives have the expectation of speedy outcomes and prompt feedback, which is probably a result of their frequent use of digital devices that offer rapid responses (Prensky, M., 2001). In settings like traditional education systems, where feedback is delayed, this expectation can cause irritation. Because they are frequently raised to expect quick satisfaction, digital natives may be less patient and motivated in slower-paced learning situations. An individual's attention span, which is the length of time they can focus on a job without getting sidetracked, is a crucial component of learning. Concern over the possibility that digital natives—those who have grown up with technology—have shorter attention spans than earlier generations as a result of their continual exposure to fast-paced digital content has grown in recent years. This has important ramifications for learning objectives and instructional strategies.

According to a widely reported Microsoft study (2015), people's attention spans have shrunk from 12 seconds in 2000 to barely 8 seconds. The growth of smartphones, social media, and other digital technologies has been linked to this loss, since they have encouraged quick shifts in attention (Microsoft Corp., 2015). A different study discovered that people who frequently multitask with media, like texting while watching TV, usually struggle more to block out distractions and stay focused on one thing at a time (Ophir, E., Nass, C., & Wagner, A. D., 2009). In "Facebook and Texting Made Me Do It: Media-Induced Task-Switching While Studying," Larry Rosen and associates investigate the impact of digital distractions on attention span. They discovered that pupils with shorter attention spans and lengthier completion times were those who frequently shifted between tasks, such as texting or checking social media (Rosen, L. D., Carrier, L. M., & Cheever, N. A., 2013). The research emphasizes how common micro-attention spans are among digital natives and how digital media has shaped these behaviors.

The effects of multitasking with digital devices during lectures on attention span and learning are examined in the study "The Laptop and the Lecture: The Effects of Multitasking in Learning Environments" by Helene Hembrooke and Geri Gay. They discovered that multitasking students had worse comprehension and memory of the lecture content, highlighting the detrimental impacts of fragmented attention (Hembrooke, H., & Gay, G. (2003). The difficulties instructors have holding the attention of digital natives are highlighted by this research. Traditional teaching approaches are

challenged by the prevalence of fragmented attention among digital natives. This generation is prone to disengaging or shifting their attention, thus lengthy lectures and assignments might not be beneficial. In order to grab and hold students' attention, brief, varied activities, multimedia information, and interactive components are becoming more and more common in modern education. In order to modify teaching methods and effectively engage and educate pupils in the digital age, it is imperative that these distinctions be understood.

Digital natives are also known as the "Net Generation". They prefer interactive and visual content to text-based information. Multimedia presentations, films, and interactive simulations that accommodate their preference for visual learning keep them more interested. Because of their exposure to digital media, learning materials with a strong visual component and interactive elements are preferred by digital natives. According to Pew Research Center research (Lenhart, A., et al., 2010), digital natives commonly participate in collaborative learning, utilizing online platforms to share knowledge, collaborate on projects, and solve problems. In comparison to earlier generations, they are more prone to appreciate peer feedback and teamwork. Digital natives have a tendency toward collaborative learning and frequently favor learning through shared digital experiences and peer interaction.

Kathy Mills examines the digital natives issues and notes that these people frequently favor a multimodal learning strategy that incorporates text, graphics, audio, and video. This is consistent with their experience using a variety of devices to consume a wide range of material (Mills, K. A., 2010). Learning environments that provide multimodal information that aligns with the different media consumption patterns of digital natives are conducive to their success.

For instance, in a 2015 study, researchers found that providing students who listened to a physics lecture with illustrated diagrams improved performance on a follow-up test by 70% when compared to their peers who listened to the lecture without any visual aids (Bui, D. C., & McDaniel, M. A., 2015).

In 2023, the Kerala government initiated a pilot project centered on artificial intelligence for learning as part of its larger "Kerala Knowledge Economy Mission." By utilizing AI technology, the initiative aims to improve students' learning experiences by offering intelligent tutoring systems, adaptive evaluations, and tailored learning routes. The pilot project's initial responses have been positive. Instructors have noted increased student participation, especially from those who usually find traditional teaching techniques difficult (Nair, R., 2023).

The "flipped classroom" paradigm is one of the main pedagogical strategies being investigated by the Central Board of Secondary Education (CBSE) in India in order to improve learning outcomes. The delivery of content in the flipped classroom is mostly dependent on digital technologies and platforms.

The Ministry of Education, Government of India's autonomous National Institute of Educational Planning and Administration (NIEPA) has conducted studies on digital learning with an emphasis on its application, obstacles, and effects on the Indian educational system. According to the findings, access to educational resources has increased dramatically throughout India's many regions due to digital learning. In addition to traditional textbooks, students can now access a vast array of learning resources due to availability of digital content, educational apps, and online platforms. According to NIEPA's report, millions of students have benefited from digital programs like SWAYAM, ePathshala, and the DIKSHA platform, which offer them access to excellent instructional materials in a variety of languages.

Existing Pedagogical Approaches based on Student Centred Learning

The goal of modern pedagogical approaches is to solve the problems with engagement and attention, especially with younger students who are digital natives and have shorter attention spans. By adding interactive, participative, and adaptive components to the learning process, approaches like active learning, flipped classrooms, and gamification aim to raise student engagement and improve learning results.

1. Active Learning: Active learning is a pedagogical approach that emphasizes student participation and engagement in the learning process. It contrasts with passive learning methods, such as traditional lectures, by involving students in activities that require them to actively process and apply knowledge.

Key Principles:

Engagement by Participation: Through debates, problem-solving exercises, and practical applications, students are urged to take an active role in their education.

Collaborative learning: Promotes peer-to-peer interaction and group projects to strengthen communication skills and increase comprehension.

Immediate Application: Gives students the chance to put ideas into practice right away, strengthening their understanding through hands-on experience.

Evidence and Impact

Research Findings: Extensive research has demonstrated the substantial enhancement of student engagement, comprehension, and retention through active learning. For instance, a meta-analysis conducted in 2014 by Freeman et al. discovered that active learning strategies yield higher exam scores and a reduced failure rate when compared to traditional lectures.

Educational Implications: By dividing the learning process into more interesting and dynamic sections, active learning tackles the problem of fragmented attention. Through active engagement, it sustains students' interest and promotes deeper cognitive processing.

2. Flipped Classrooms: By offering educational content outside of class—often through videos—and utilizing class time for interactive exercises, conversations, and problem-solving, the flipped classroom concept flips the traditional learning environment on its head.

Key Principles:

Pre-Class Learning: Before class, students study new material on their own by watching lectures online, reading books, or other multimedia resources.

In-Class Application: Class time is devoted to putting information into practice through debates, case studies, and group projects. This allows for quick answers and clarifications.

Evidence and Impact

Research Findings: Studies on flipped classrooms, like the one conducted in 2012 by Bergmann and Sams, show that this method can improve student comprehension and engagement by letting them study at their own speed and use class time for in-depth concept investigation and practical application.

Educational Implications: By reorienting the focus of in-class time toward interactive, student-centered activities, the flipped classroom approach solves concerns with engagement and attention. Additionally, it allows for a variety of learning velocities and styles, further customizing the learning process to meet the demands of each learner.

3. Gamification: In order to boost motivation and engagement, gamification is the process of introducing elements of game design, such as leaderboards, challenges, badges, and points, into educational activities.

Key Principles:

Motivation through Rewards: Encourages pupils and increases their engagement by using game-like rewards and recognition.

Taking on Challenges: Establishes a dynamic, competitive environment where students can track their progress and accomplish goals.

Instant Feedback: Offers students immediate feedback on their performance, assisting them in understanding their areas of strength and weakness.

Evidence and Impact

Research Findings: Research on gamification, such as done by Deterding et al. (2011), shows that adding game elements to classroom environments can boost student enthusiasm, engagement, and retention. Incorporating gamification components into learning can enhance its enjoyment and engagement, especially for students who respond well to interactive and reward-based systems.

Educational Implications: By adding more interactivity and enjoyment to learning processes, gamification helps with problems with attention and engagement. It makes use of games' innate attraction to pique students' attention and promote involvement.

Table: Comparison of Pedagogical Approaches

	Active Learning	Flipped Classrooms	Gamification
Engagement Strategies	Focuses on student participation and real-time application of knowledge	Shifts content delivery outside of class to allow for interactive, application-focused in-class activities	Uses game design elements to enhance motivation and engagement through rewards and challenges.
Attention Management	Keeps students engaged by breaking up learning into interactive segments	Accommodates varied attention spans by allowing students to learn at their own pace and use class time for applied learning.	Maintains interest through game-like elements and instant feedback, addressing fragmented attention with engaging activities.

Conclusion

As they were raised in a technologically advanced world, digital natives have unique preferences for the ways they interact and consume content. Particularly in educational settings, their tastes differ significantly from those of prior generations. The inclination of digital natives towards interactive, multimedia, and on-demand information can be attributed to their upbringing in an environment where these types of content are widely available and ubiquitous. They prefer interactive, visually appealing, and adaptable learning environments that let them engage with the content in ways that traditional teaching approaches frequently do not facilitate. These choices show how crucial it is to modify educational methods in order to better suit the cognitive and behavioral characteristics of digital natives, making learning pleasurable and successful for them.

Studies on digital natives show unique behavioral and cognitive characteristics influenced by their early exposure to digital technologies. These characteristics include a tendency to multitask, a taste for interactive and visual media, a reduction in attention spans, and a demand for immediate feedback. Because of their digital upbringing, digital natives also favor multimodal teaching methods and collaborative learning. These results underline the necessity of developing instructional tactics that go beyond conventional approaches to better engage digital natives by taking into account their distinct cognitive and behavioral traits.

The research on attention spans suggests that as they are constantly interacting with digital technologies, digital natives have shorter attention spans than prior generations. This change has significant effects on education and necessitates a reassessment of conventional teaching strategies. Teachers may need to develop ways to promote deep

learning and sustained attention in addition to adding more interactive, multimedia, and microlearning strategies to their courses in order to better serve digital natives. Active learning, flipped classrooms, and gamification are examples of contemporary pedagogical philosophies that provide useful solutions for engagement and attention problems, particularly in digital natives. These strategies incorporate interactive, student-centered, and motivational aspects in an effort to improve learning outcomes and experiences. They show a move away from conventional, passive learning techniques and toward more flexible, dynamic teaching methods. Despite the promising results, the technology-based systems may still confront obstacles, such as the requirement for teachers to receive ongoing training in order that they could utilize AI technologies successfully, worries about data privacy, and the possibility of a digital divide that would hinder equitable access.

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Assessing the Psychological Impact of Online Education and the Role of Mental Health Support in Enhancing Education Quality and Global Citizenship Post-COVID''

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Abstract

The COVID-19 pandemic necessitated a rapid shift to online education, profoundly impacting students' psychological well-being and academic performance. This study examines the psychological effects of transitioning from online to offline learning and the role of mental health support in this process. Using a qualitative approach, in-depth semi-structured interviews were conducted with students to explore their experiences. Thematic analysis of the data revealed several key themes: the challenges of readjusting to traditional learning environments, the cognitive and emotional toll of prolonged online education, and the critical role of mental health support in alleviating these challenges. Our findings underscore the importance of integrating mental health resources into educational frameworks. Effective mental health support not only helps mitigate the psychological impact of such transitions but also enhances student resilience, academic performance, and global awareness. The study advocates for the development of comprehensive mental health strategies to better support students during and after significant educational changes.

Keywords: Online education, psychological impact, mental health support, national education quality, global citizenship, post-COVID transition

Introduction

The COVID-19 pandemic necessitated an abrupt transition from traditional classroom based education to online learning, significantly altering the educational landscape worldwide. This shift, while essential for public health, has presented numerous challenges for students, including disruptions in learning, diminished engagement, and increased psychological stress (Chou, 2021; Kumar & Clarke, 2021). As educational institutions gradually return to offline learning environments, it is crucial to understand the psychological impacts of this transition and how mental health support can facilitate a smoother adjustment.

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Problem Statement

Despite the recognition of the challenges posed by online education, there is a notable gap in research concerning the psychological effects of transitioning back to offline learning. Specifically, there is limited empirical evidence on how this transition affects students' mental health and the effectiveness of mental health support in mitigating these effects. This gap hampers the ability of educational institutions to implement targeted strategies to support students during this critical period.

Purpose of the Study

This study aims to explore the psychological impacts experienced by students transitioning from online to offline learning, with a particular focus on the role of mental health support. Through thematic analysis of in-depth interviews with students, it identifies key transition challenges and offers recommendations for integrating mental health resources into educational frameworks to improve both educational quality and global citizenship.

Research Questions

1. What psychological impacts do students experience when transitioning from online to offline learning?
2. How does mental health support influence students' adjustment to offline learning environments?
3. What strategies can be implemented to improve educational quality and foster global citizenship during this transition?

Significance of the Study

This study reveals the psychological effects of transitioning back to offline learning and emphasizes the essential role of mental health support. The findings will deepen understanding of student experiences and guide the development of targeted interventions to improve well being and academic performance. Additionally, the research supports incorporating mental health strategies into educational policies to tackle post-pandemic challenges effectively.

Literature Review Summary

Previous research highlights various challenges associated with online education, including reduced engagement, cognitive overload, and heightened emotional distress (Bawa, 2020; Moser et al., 2022). Although the psychological impacts of online learning are well-documented, there is limited research on the effects of transitioning back to offline learning and the role of mental health support in this context. This study builds on existing literature by examining these impacts in detail and exploring the effectiveness of mental health interventions.

Theoretical Framework

The study is grounded in resilience theory, which emphasizes the role of mental health support in enhancing individuals' capacity to adapt to and recover from adversity (Luthar, 2006). This framework highlights the importance of support systems in fostering resilience and positive outcomes, particularly during transitional periods.

Assumptions and Scope

This study assumes that students' experiences of transitioning from online to offline learning are influenced by various factors, including prior online learning experiences and individual mental health needs. The research focuses on students' perspectives and does not encompass the broader impacts on educational institutions or instructors.

Method

Research Design

This study employs a qualitative research design using thematic analysis to explore the psychological impact of transitioning from online to offline learning. The focus is on understanding students' experiences and the role of mental health support in this transition. A qualitative approach is befitting for capturing the nuanced and subjective experiences of participants, allowing for a deeper exploration of their perceptions and feelings.

Participants

Participants were purposively sampled to include eight college students, aged 20-24 from various Kerala colleges, with experience in both online and offline learning. They were divided into two groups: those who received mental health support and those who did not. Criteria included current enrollment in a college course, relevant learning experience, and willingness to participate in interviews.

Data Collection

Data were collected through semi-structured interviews, allowing flexibility while maintaining consistency. The interview guide addressed key themes such as the transition from online to offline learning, psychological challenges, and perceptions of mental health support. Conducted via calls and lasting about one hour, each interview was audio-recorded with consent and transcribed verbatim for analysis.

Data Analysis

Thematic analysis was employed to examine the psychological impact of transitioning from online to offline learning and the role of mental health support. The analysis process began with familiarization, where researcher thoroughly reviewed the interview transcripts. Initial coding was conducted to identify key segments related to the research questions, such as "adjustment difficulties" and "mental health impact." These codes were then organized into potential themes, including "psychological challenges," "academic adjustment," and "mental health support". The themes were reviewed and

refined to ensure they accurately reflected the data and were distinct from each other. Each theme was described and supported by relevant participant quotes.

Ethical Consideration

Informed consent was obtained from all participants, who were assured of confidentiality and anonymity. Participants were informed that they could withdraw from the study at any time without facing any penalties.

Limitations

The study's limitations include the potential for researcher bias in data interpretation and the limited generalizability of findings due to the specific context and sample. Future research could explore a larger and more diverse sample to enhance the applicability of the findings.

Results

The analysis of participant interviews revealed significant themes concerning the transition from online to offline learning, including shifts in educational quality, global citizenship, psychological well-being, and the role of technology and mental health support. These findings provide a comprehensive view of the impact on students' academic and personal lives and underscore the critical role of mental health support.

1. Impact on National Education Quality

Effectiveness of Online vs. Offline Education: Participants reported challenges in maintaining educational quality during the transition. Several noted gaps in foundational knowledge upon returning to offline classes. Participant 1 stated, "I felt a gap in my foundational knowledge when transitioning back to offline classes," and Participant 5 observed a decline in engagement and understanding. This aligns with research suggesting online environments often lack essential interactive components (Bawa, 2020; Renaud & Murray, 2022).

Gaps in Educational Content and Learning Outcomes: Participants noted significant gaps in content and learning outcomes due to online education. Participant 3 said, "The transition revealed significant gaps in what we had learned online," and Participant 8 struggled to relearn material. These findings support research indicating incomplete curriculum coverage in online learning (Chou, 2021; Moser et al., 2022).

Changes in Student Engagement and Academic Performance: A decline in engagement and academic performance was reported during the transition. Participant 2 noted, "My academic performance declined when we moved back to offline classes," reflecting broader trends of reduced motivation and academic discipline in online settings (Anderson, 2022; Liu et al., 2023).

Role of Mental Health Support in Education: Participants emphasized the importance of mental health support in mitigating transition disruptions. Participant 4 commented,

"Mental health support significantly improved my well-being and academic performance," highlighting the positive impact of mental health interventions on well-being and academic outcomes (Hernández et al., 2022; Smith & McCarthy, 2023).

2. Enhancing Global Citizenship

Online Education's Role in Promoting Global Awareness: Online learning initially facilitated exposure to global perspectives, but this decreased with the transition to offline learning. Participant 5 observed, "Online classes exposed me to global perspectives," while Participant 8 noted reduced global engagement offline. Research supports that online education fosters global awareness, which can diminish when returning to offline settings (Lee & Coughlan, 2021; Wang et al., 2023).

Development of Global Competencies through Online Learning: Participants grew in global competencies during online education but struggled to maintain these after transitioning back. Participant 3 remarked, "Online education helped develop my global competencies, but the transition made it challenging to maintain that growth." Studies confirm that online education enhances global competencies, which may wane post-transition (Williams & Hughes, 2022).

Challenges and Opportunities for Fostering Global Citizenship: The transition highlighted both challenges and opportunities in global citizenship. Although offline classes offered less international exposure, integrating global perspectives into offline education was seen as an opportunity. Participant 2 suggested, "Integrating global topics into offline classes is an opportunity," reflecting the potential for enhancing global awareness in offline education (Johnson & Turner, 2021; Roberts et al., 2023).

3. Psychological Impact on Students

Emotional and Social Challenges During Transition: Increased isolation, anxiety, and difficulties with social interactions were reported. Participant 1 shared, "I felt isolated and anxious about social interactions," aligning with research showing such transitions can impact self-confidence and social skills (Kumar & Clarke, 2021; Shaw & Tingley, 2023).

Cognitive and Behavioral Changes Due to Online Education: Prolonged online learning led to changes in cognitive and behavioral patterns, including decreased attention spans. Participant 3 noted, "My cognitive skills changed due to reliance on online resources," consistent with studies on the effects of excessive screen time (Mitchell et al., 2022; Thompson & Wilson, 2023).

Long-Term Psychological Effects of Online Education: The long-term effects included increased stress and decreased motivation. Participant 2 commented, "The long-term impact of online education included increased stress," reflecting the significant mental and emotional adjustments required for offline learning (Lee et al., 2023; Zhang & Liu, 2024).

4. Educational Technology and Its Implications

Technology's Influence on Learning Habits and Productivity: The extensive use of digital tools during online education has persisted even after the transition to offline classes, significantly affecting learning habits and productivity. Participant 6 said, "Increased screen time led to headaches and decreased productivity," mirroring research on excessive technology use (Singh & Kumar, 2022; Hartmann & Schultz, 2023).

Digital Tools and Resources in Education: Over-reliance on AI tools and digital resources impacted research skills and critical thinking. Participant 8 noted, "Using AI tools reduced my critical thinking." Studies suggest that while digital tools are convenient, they can detract from deep engagement (Davis & Green, 2021; Palmer & Ross, 2022).

Balancing Technology Use with Traditional Learning Methods: Participants highlighted the need to balance technology with traditional methods. Participant 3 stated, "Balancing technology with traditional methods is crucial," reflecting the necessity of integrating digital tools with offline practices for better educational outcomes (Jones & Brown, 2023; Martinez et al., 2024).

5. Role of Mental Health Support

Improvement in Confidence and Well-being: Mental health support was crucial for improving confidence and well-being. Participant 4 remarked, "Mental health support greatly enhanced my confidence and academic performance." Research supports the importance of mental health resources for managing transition challenges (White & Thomas, 2022; Hall & Stewart, 2023).

Support for Academic and Social Challenges: Effective mental health interventions were essential for managing academic stress and social challenges. Participant 2 mentioned, "Mental health support helped me manage academic stress," aligning with findings on the benefits of mental health strategies (Adams et al., 2021; Smith et al., 2023).

Impact on Social Skills and Interaction: Mental health support positively impacted social skills and interactions, reducing social anxiety and improving confidence. Participant 5 noted, "Mental health support helped to reduce my social anxiety and improved my interactions," consistent with evidence showing that mental health resources enhance social skills (Green & Williams, 2021; Brown & Davis, 2023).

Discussion

This study explored the transition from online to offline learning, revealing significant challenges and insights into its impact on educational quality, global citizenship, psychological well-being, and the role of mental health support. Our findings depict that the shift back to offline education often exposed gaps in foundational knowledge and comprehension. Participants experienced diminished engagement and

academic performance, aligning with research indicating that online learning can impair educational depth and interaction (Bawa, 2020; Chou, 2021).

Online education initially fostered global awareness and competencies, but these benefits lessened with the return to offline settings. This observation supports previous studies that highlight the global perspective offered by online platforms but also note a decline in international exposure when transitioning to in-person learning (Lee & Coughlan, 2021; Williams & Hughes, 2022).

The transition led to emotional and social challenges, including increased anxiety and difficulties in social interactions. Prolonged online learning also impacted cognitive abilities, such as attention span and memory retention. Mental health support emerged as crucial in mitigating these challenges improving academic performance and social interactions, as highlighted by recent studies (Smith & McCarthy, 2023; Hall & Stewart, 2023).

Increased reliance on digital tools during online learning altered learning habits and reduced critical thinking skills. Balancing technology with traditional methods was seen as crucial for improving educational outcomes. Mental health support significantly enhanced students' confidence, well-being, and academic performance. It was essential for managing academic stress and improving social interactions during the transition back to offline learning.

In conclusion, a range of complex challenges and opportunities emerged in the post-covid transition phase. Effective instructional strategies and integrated mental health support are essential for addressing educational gaps and supporting student well-being during transitions. Future research should focus on developing hybrid learning practices that balance technology with traditional methods to enhance educational outcomes and overall student experience.

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ICT - based Transformation of Teaching and Learning

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Abstract

The spread of ICT and the emergence of the information society have led to a need for “new digital skills and abilities”, which are essential for training and education. It is hard to see a learning environment in the future where information and communication technology is not present, either prominently or implicitly. ICTs must be properly utilized if we are to completely implement the post-2015 education plan. This is especially true when it comes to enhancing teaching and learning, which will enhance the educational system. This article makes an effort to add to the current conversations about the integration of ICT into the teaching-learning process. It shares by considering how new trends and technological innovations may influence changes in education. The issues that need to be taken into account, as well as the best ways to use ICT to strategically develop solutions that will improve education. This study aims to describe how information technology may support the development of an education system based on the ideas of enhancing the quality and relevance of the teaching and learning process by assisting educators, learners, and policymakers in being more effective in their work. Information and communication technology (ICT) has the power to change how the educational system functions in many ways. In order to successfully use information communication technology, we must first identify the problems that now plague our educational system and suggest how these practices might help. Additionally, several suggestions that might serve as a spark for the advancement of ICT services in both teaching and learning are included in this study.

Keywords: ICT, Learning, Digital, Education system, Teaching

Introduction

The Indian economy has changed dramatically in the past years. A significant contributing aspect is the region's expanding youth majority, which gives it a demographic advantage over other developed areas. Information and communication technology, or “ICT is now one of the fundamental pillars of contemporary Indian society” (Sanyal, 2001). ICT has drastically changed the nature of work and is a phenomenal catalyst for fostering creativity, technology, and teamwork. A few decades

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ago, these opportunities would have been unthinkable. Several technologies are included in the most recent ICT innovation, which have given teaching and learning new opportunities. A new learning culture is being established in educational institutions as a result of the increasing prominence of integrating ICT into higher quality teaching and learning. ICT is assisting creative educators in utilizing new technology to provide their students with rich learning experiences. Using the right ICT tools and approaches while keeping in mind the integration of technology and education will be essential to this change.

The expansion of learning opportunities brought about by the increased use of technology in recent years has resulted in a steady rise of the Indian educational system. Formal education is still vital, but in order to improve the understanding, abilities, and perceptions of both working educators and New Age learners, organized intervention strategies utilizing “ICT-based teaching-learning” (ibid; 2001) will also need to be implemented. ICT in particular, has a big part to play in making these developments a reality. It is imperative that all universities keep up with the latest aligns with ICT and plan ahead for future requirements in the massive job demand anticipated in a few years with the need for a highly skilled workforce.

The emergence of ICT in education

The process of “teaching and learning” now includes various types of digital technologies. A lot of universities are moving quickly to incorporate learning technologies into their teaching methods. ICT resources and technology as a learning tool are becoming more and more important to individual institutions and educators. The current system is integrating and adopting a variety of “ICT tools, including blended learning, web-based learning, LMSs like MOOCs, podcasting, blogs, wikis, e-learning, m-learning, u-learning, digital storytelling, e-books, social networking, using iPads, BYOD”, etc. (Collis,2003). As a result of the growing adoption of ICT, new digital skills and abilities have emerged, which are essential for involvement in society, education and training, work, and personal growth. This tendency indicates that urgent reform is required, not just to preserve the current levels of schooling, but furthermore to acquire the new proficiencies and abilities needed to stay dynamic and use new and more effective concepts.



<https://www.extramarks.com/blogs/ict-tools-for-teaching/>

A new definition of "ICT for teaching and learning" that considers the changes and patterns that are reshaping how “people live, work, and learn in a digitalized, networked society” is required as we consider the future of education in the “inclusive society”.With the development of ICT, new types of efficiently implementing for teaching and learning have become possible (includes software, apps, online courses, and interactive platforms-smart classrooms or hybrid classrooms;CD-ROM, Cable Television, Cellular Phones, computer system, opaque projectors, filmstrip projectors, cassette recorders etc.). ICT will be able to facilitate and incorporate a wide range of educational programs and formats, including adult education, regular education, remote learning, open education, initial education, continuing education, and specific education.ICT devices, or information and communication technology, are the newest tools, ideas, and methods utilized in student-teacher and student-student engagement. Some examples are apps available, virtual classrooms, and interactive devices (Brown,1999).

Now, teachers need to be aware of resources such as search engines, email, chat, e-books, e-journals, e-dictionaries, and digital dictionaries; they also need to know about e-learning portals, downloadable software, online storage, and social media sites like Facebook, Twitter, and blogs. Educator(teachers) need to transition toward creating electronic information, they can utilize various online resources such as writing, integrating, disseminating, and online storage and preservation capabilities.A learning environment can successfully employ a wide range of ICT tools. These technologies can be used in a wide variety of early childhood learning contexts, which can now be both indoor and outdoor.

Role of ICT in schools	Examples of ICT tools in school environments How it can be Used
Children utilizing ICT for learning or play	Children using computers for story listening, gaming, and drawing.
ICT is being used by kids and teachers to support children' learning.	use the Internet to find resources or information if a child expresses interest in a certain subject or concept.
Teaching, or educators-in-training, gaining knowledge and skills via internet-based learning.	Early childhood educators pursuing their certification through distance learning and the use of ICT.Teachers can use ICT as part of a professional development program or to register and reflect on their work.
Students and experts utilizing ICT to interact or share knowledge or concepts with other professionals, relatives, or researchers.	Communicating with other practitioners, parents, or researchers via videoconferencing, email, or online discussion groups, as well as sharing updates and information on what's going on in the early childhood education center.

Learning concepts is done at the individual pace of the students, based on their proficiency with ICT (information and communication technology). Stated differently, it promotes student autonomy. Educational scenarios that occur in the real world are

paired with this Grey Revolution. It becomes learner- and learning-centric throughout the entire educational process.

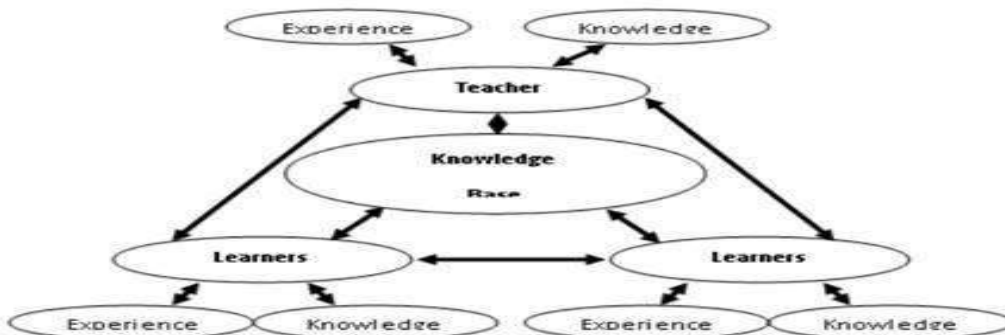
Emerging Patterns Advancing Technologies in Learning

According to the AnnualHorizon Report, 2015, there are six technology trends (short-to long-term) that will influence teaching and learning in the near future. The following figure illustrates the main technological trends influencing the educational system.



<https://www.tatvasoft.com/outsourcing/2022/06/trends-in-educational-technology.html>

These days, teachers have two very important responsibilities: “one is to exploit the wide range of online resources and materials for effective teaching, and the other is to create e-content, blogs, and other online resources for the learning of today’s and tomorrow’s school community” (Tinio, 2002). Teachers will need to create creative programs and techniques that encourage top-down change and can be applied in a variety of “institutional settings” in order to revolutionize teaching and learning through ICT, given the current technological trends. In order to meet these developments, the program offered must be relevant, functional, adaptive, flexible, and futuristic in nature. Lifelong learning is also required.



ICT Teaching- Learning Patterns

According to this viewpoint, efforts will be required to guarantee that everyone may learn and develop other critical ICT-based talents as well as the digital competencies

required for participation in the networked society. Simultaneously, a wide range of topics within the field of ICT-enabled learning require specialized research on systemic difficulties. Future endeavours for “ICT integration in molding education for such difficulties in the nation will be guided by the changing needs in education and training, as well as the shifting work patterns” (Tinio, 2002).

Example of success in ICT Education

1. “American Speech-Language-Hearing Association (ASHA)” – India, Himachal Pradesh ,2005¹ and Science Awareness Trust (SAT), Himachal Pradesh in collaboration with State Government of Himachal Pradesh”

Objectives: teaching adults who lack literacy in rural communities and teaching young people in rural areas how to use computers so they may find better jobs.

Uses of ICT: • Using information technology to construct community learning centres; Increasing community awareness through information availability.

- Successful implementation has required cooperation from the community. In order to address local demands, IT technologies must be embraced in the local languages.
 - In order to generate and maintain community interest in the new initiatives, the Community Learning Centers need to concentrate on regional developmental challenges.

2. “Gyandoot: A Community Owned, Self-sustainable and Low Cost Rural Intranet Project -India, Madhya Pradesh(2000)”²

Objectives:

- To provide government services available at the district level through e-governance
- To ensure equal access of emerging technologies to deprived and marginalized sector in the economy
- To enhance the participation of marginalized sector in community affairs with the use of ICT

use of ICT:

- Development of intranet-based Government to Citizen (G2C) service delivery portals.
- Provision of access to information such as agricultural market prices and government policies and procedures with the use of ICT

¹<https://www.jite.org/>

²<https://www.jite.org/>

- Capacity building of local youth in managing and running these portals/ kiosks at village levels

Implementing organizations and partners: Gyandoot Samiti formed at village level in collaboration with state government and local district level governments.

Priorities, Issues and Challenges for Advancing Technology Adoption (ICT) in Teaching-Learning Education

Due to demographic variety, ICT use for teaching and learning is still woefully inadequate in many parts of the nation. The current system has a number of common obstacles to fully utilizing ICT, including: a) lack of trained ICT teachers; b) inadequate infrastructure and support for ICT policies; c) scarcity of hardware and software; d) maintenance of “facilities and resources; e) lack of institutional, technical, and administrative support; f) inadequate teacher knowledge to address technical issues, etc”. The following are some of the methods can identify that need to be discussed: content development, localization, configurability, access & connectivity concerns, and technical assistance. Even though it rarely encountered difficulties, the introduction of ICTs to rural areas went off without a hitch at all locations (Jonassen, & Reeves 1996). In India, In the last decade or so, India's telecom industry has been growing rapidly. Governmental and non-governmental groups have made an effort to improve the infrastructure. The goal is to transform India into a technologically advanced nation by enabling contemporary telecommunications technology to benefit all facets of the country's culturally varied culture. In December 2000, the idea of using ICT in the classroom was first introduced. The State Council later examined it in 2010 to make sure that students have the opportunity to complete their secondary education. As part of the Rashtriya Madhyamik Shiksha Abhiyan, a nationwide incentive program for secondary education, the central government has recently implemented ICT in schools.

Now, the most significant and widely used social platform in use is the MHRD's DIKSHA portal, which is powered by EkStep. A multilingual package that is currently being implemented in several states, DIKSHA integrates ICT into all facets of education. It includes high-quality user-developed content, tools for student assessment, data collection and analysis, professional development for teachers, and parent-teacher-student communication. Other general-purpose platforms are Saransh from the Central Board for Secondary Education, Meghshala from Karnataka, and Learning Delight from Gujarat. A number of initiatives have been implemented by the Indian government to increase ICT usage in the field of education. Through e-pathshala, Saransh, Shala Siddhi, Shaala Darpan, availability of NCERT books on mobile apps, etc. is commendable" all e-resources may be accessed. Young students' curiosity and creativity are to be fostered via Rashtriya Avishkar Abhiyan (Jagtap, 2023). Another well-known project was Media Lab-Asia (ML-A), a 2002 collaboration between the federal government and MIT's

Poverty Action Lab that brought a software platform to ten urban and ten rural areas of India¹.

A collection of varied technological tools and resources for transmitting, storing, creating, sharing, or exchanging information are collectively referred to as information and communication technology (ICT) by UNESCO. These tools and resources include computers, the internet, live streaming and recorded technologies, phone services, and technologies. Our way of living, working, and communicating has all been completely transformed in the modern world(UNESCO Report, 2002). The following factors are responsible for ICT issues and challenges:

i) **Insufficient Software Issue:** This is one of the main reasons why it becomes difficult to use ICT. In computer labs, software is unstable and plagiarized, often modified, making it useless in the learning process. Most of the time we find that teachers and students do not have sufficient ICT resources, forcing them to share with other teachers. Lack of hardware, software or other ICT material in an organization is not always the only reason for lack of access to ICT resources. There are many reasons for this, including inadequate resource organization, obsolete hardware, inadequate software, or limited access to instructors.

ii) **Inadequate Training:** Due to the “lack of training opportunities, most teachers are not qualified to use ICT in the teaching process. As most teachers are reluctant to adopt new technologies, they are rarely seen using ICT in the classroom”. It is necessary to incorporate new technologies into the classroom and provide instructors with specialized training on how to use these ICT. In this sense, “teachers must have some initial training in order to acquire the necessary abilities, know-how, and attitudes for using computers to enhance learning” (Sanyal, 2001). The fact that there are multiple factors to take into account in order to ensure the success of the training makes it a complex subject.

iii) **Inadequate Tools and Resources for Learning:** It was discovered that computers were present in the majority of the institutions. However, there weren't many computers, and those were mostly being utilized by students taking computer science and information technology (IT) courses, which left the other students and teachers in a difficult situation. Numerous research investigations have identified multiple causes behind the limited availability of technologies. The primary barriers to the use of ICT in educational institutions, according to teachers, are a lack of peripheral devices, a shortage of software copies, a lack of desktops, and a lack of simultaneous internet connectivity.

iv) **Time Restriction:** According to the study, a lot of teachers are proficient with using computers in the classroom, but they don't always use technology since they don't have enough time. Time constraints were cited by a sizable portion of educators as a barrier to allocating adequate computer time for classrooms and as an issue with their use of

¹<https://www.econstor.eu/bitstream/10419/249792/1/ICT-India-Working-Paper-03.pdf>

ICT in teaching and learning. A few of the participating teachers made it clear that they require time to find resources on the “internet, plan courses, experiment with and practice utilizing the technology, troubleshoot technical issues, and obtain sufficient training” (Collins, 2003). According to recent studies, time constraints have a significant impact on how new ICT technologies are applied.

v) **Lack of knowledge:** A further issue that is closely linked to teachers' confidence is their ignorance of how to effectively incorporate ICT into their lesson plans. One major barrier to integrating technology into teaching and learning in the classroom is a lack of ICT skills.

Part III of the NEP 2020 only addresses how ICT is being used to change the current educational system in chapters 23 and 24. These two chapters, "Online and Digital Education: Ensuring Equitable Use of Technology" and "Technology Use and Integration," discuss in great detail the significance of ICT in educational processes. The policy showed that the country's transition to a digitally empowered society has been largely facilitated by the Digital India Campaign. The shift is attributed to the vital role that education plays, which considers for more research and development in cutting-edge fields including artificial intelligence, machine learning, blockchain technology, smart boards, computers, and a range of instructional gear and software. The strategy aims for “the establishment of the National Educational Technology Forum (NETF), an independent organization that will serve as a forum for sharing ideas on how to use technology to improve planning, administration, evaluation, and learning in both higher education and the classroom”. The governments will get unbiased, fact-based guidance on technology-based interventions from the NETF (Alam, 2021).

In terms of the several technology-based learning platforms, the strategy asks that organizations like the NCERT, CIET, CBSE, and NIOS create e-content that is available to students in distant locations and Divyang pupils in all regional languages. Moreover, it aimed to produce high-quality, easily accessible content for educators and learners, as well as to integrate technology-based learning platforms into traditional classroom and postsecondary education settings. The following are the recommendations made by the policy on digital and online education and guaranteeing the equal use of technology: a) Online education pilot studies; b) “Digital infrastructure; c) Online teaching platforms and tools; d) Content creation, digital repository, and dissemination; e) Addressing the digital divide; f) Virtual laboratories; g) Teacher training and incentives; h) Online assessment and examinations i) Blended learning models; j) Establishing standards” (Derrick, 2000), .

These suggestions serve as evidence for the school system's continued growth and improvement. In order to shed light on the recommendations, it is important to note that the value of online education was seen and tested throughout the COVID-19 pandemic. The best course of action at this point is to integrate it into the current system in order to deal with situations like these in the future. The greatest amount of cutting-edge technology that could be used in a learner-friendly manner and implemented consistently. The government is currently actively promoting online learning platforms

like SWAYAM, DIKSHA, and others. However, widespread distribution to the rural populace is required to support this, and digital literacy levels must be raised. There is currently and will continue to be a lot of content development and digital source.

Recommendations

It is possible to view the main elements as suggestions for integrating ICT into the education.

1. In order to provide students with the benefits of ICT and guarantee its maintenance, dependable Internet connectivity is required.
2. Provision of hardware and software in the form of laptops, desktop computers, PDAs, and other related devices to provide access to ICT facilities.
3. Every higher education institution must build virtual or smart classrooms. ICT would lead to e-learning, allowing students to learn at any time and from anywhere.
4. In order to make the curriculum competitive and in accordance with modern demands, ICT must be included into the curriculum.
5. The government's funding allocation for the development of infrastructure and necessary human resources in various ICT disciplines.
6. Employees at all levels in the public and private sectors should participate in regular general awareness, training, and development programs. For creating e-content that will be accessible to a large viewer, it is necessary to engage subject matter experts with track records of development.
7. Higher education institutions must have innovative collections in place that provide resources to be accessible on demand.
8. All stakeholders involved in providing training and information in the field of ICT must routinely participate in refresher/orientation courses. In order to accomplish the goals of ICT, it is necessary to examine the possibilities of developing public-private partnerships.
9. Apart from that, it is strongly recommended that research should be conducted for comparing public and private schools with regard to "ICT integration in teaching and learning. This is due to the fact that the majority of private schools allow students to bring devices to class, and the teaching and learning process involves the usage of ICT. It would be interesting to find out the outcomes of the success of ICT integration in public and private schools".

Conclusion

The National Education Policy 2020 places a strong emphasis on reforming education while maintaining the holistic development of students as its central goal. The policy extensively discloses the early augmentation to the education fold with reference to ICT integration. The policy's guidelines for forming the curriculum as a whole "will have a big impact on teaching and learning transactions in the classroom and cause a paradigm change. These suggestions make it apparent how urgent it is to meet the requirements of students while maintaining a forward-thinking perspective". Not only that, but

reading the suggestions again and applying them will highlight their main points as they reveal how ICT may change the educational landscape.

Teachers will need to adapt in this era of rapid technological development in order to stay up to date with new techniques and tools. It is underlined that the secret to maximizing the use of ICT in the educational system is the professional development of educators and administrators. We must acknowledge that the establishment of a learning environment within the organization is the ultimate objective. Teachers of the future will need to be imaginative and creative in order to manage and create relevant ICT tools and methods. The study's conclusions show that although instructors wanted very much to include ICT into the classroom, there were numerous obstacles in their way. These results obviously have implications for preparing teachers to use ICT regularly while concentrating on learning the fundamentals of the technology. Given that accessibility, competence, and confidence have been shown to be essential for technology integration in educational settings, instructors must have access to ICT resources such as hardware and software, as well as effective professional development opportunities, enough time, appropriate training, and technical support.

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Digital Education Model Revitalizes Our Society: Review

Badri Sankar Das¹

Abstract

Digital India, a flagship programme of the Government of India, had a significant impact during the COVID-19 pandemic. Online classes, interviews, and meetings became the new normal, both during and after the pandemic. As part of the smart education initiative, this digital education model provided a comprehensive platform for online learning, making information about various government initiatives and schemes accessible. Students could acquire technical skills through both physical centers and online modes. Even amid the pandemic, the digital platform supported numerous students, farmers, and industrial workers who had returned home due to the lockdown, enabling them to learn professional skills such as setting up small-scale industries, crafting homemade products, and gaining technical knowledge in agriculture.

In today's digital and technologically advanced era, with almost everyone having access to a mobile phone and internet connection, it is crucial to utilize these resources effectively. Efforts are underway to gradually extend digital technology not only to urban areas but also to rural villages.

Keywords: Digital India, Education Model, New Technology, Uplifting, Awareness

1. Introduction:

India is known as a country of unity in diversity, where the language, dialect, lifestyle, and culture vary across different geographical regions. This diversity presents a significant challenge in implementing the New Education Policy (NEP) 2020. The policy prioritizes the overall skill development of children, aiming to equip them for the future.

During the lockdown, many laborer families returned to their hometowns or villages and established small industries in their local areas. Despite initial doubts, they succeeded by leveraging their knowledge and expertise in their respective fields. Amid the COVID-19 pandemic, digital platforms enabled individuals to learn new technologies, utilizing expert videos to expand their businesses or set up small-scale industries. Numerous

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online training programs and educational content were shared on social media, playing a crucial role in helping skilled individuals adapt and bring positive changes to their lives. Education remains one of the most vital tools for the development of individuals, families, businesses, and the economy. New digital technologies are revolutionizing education by transforming teaching, learning, assessment, and feedback. The COVID-19 pandemic has led to the widespread adoption of digital education, replacing traditional education in the educational system (Janardhanan, Rajamohan, Manu, & Rangasamy, 2023). The Union Government and all state and UT governments are prioritizing digital education. The widespread availability of mobile phones and reliable internet access enabled a seamless transition to online classes during the pandemic. However, students from below the poverty line (BPL) and economically disadvantaged backgrounds initially faced challenges accessing mobile phones. Many parents of these students also encountered difficulties. Apart from geographical locations and internet availability issues in tribal areas, rural India suffers from poor internet facilities. Remote rural villages and tribal belt areas lack access to high-speed internet services. The Covid-19 pandemic has led to the shift to online classes worldwide, as schools have closed to curb the spread of the corona virus. However, this situation has significantly impacted education, particularly in poorer countries where many students lack access to smartphones, laptops, or the internet. In India, despite the government's efforts to expand access to out-of-school education through television classes and study materials distributed via whatsapp and SMS, underprivileged students have struggled to avoid dropping out due to the educational disparities. Government statistics say that only 15% of rural students have digital medium access to attend online classes¹. Numerous media reports have highlighted the struggles of students in these areas with online classes due to poor internet connectivity. In tribal areas, students have had to climb hills or find other elevated spots to access internet signals for their online classes². These obstacles have posed challenges for digital education. Therefore, the Government of India is now making efforts to improve internet speed and network connectivity in remote rural areas. Therefore, there is a need to pay special attention to remote areas of rural India. When they succeed, people can learn new techniques through digital educational platforms. Language was initially a barrier, but many NGOs, government agencies, and individuals helped others understand better. This can help in creating smart villages with skilled people in the time of digital education.

2. Digital Education, Initiatives and Awareness:

As per 2011 census, literacy rate in India has been reported as 74.04% with a 14% increase to that in 2001, whereas the hike is maximum for rural women at 26% in the last decade, which may be attributed to literacy mission of Government of India. The female literacy levels according to the Literacy Rate 2011 census are 65.46% whereas

¹<https://www.indiatoday.in/education-today/news/story/rural-students-forced-to-climb-trees-and-hills-to-get-internet-for-online-classes-1724976-2020-09-24>

²<https://www.newindianexpress.com/states/kerala/2021/Aug/28/internet-a-step-too-far-in-search-of-better-connectivity-tribal-student-falls-from-tree-2350798.html>

the male literacy rate is over 80%. The difference in literacy among males and females is as low as less than 5% in state of Meghalaya, Kerla and Mizoram whereas states like Rajasthan, Jharkhand, D & N Haveli, Jammu & Kashmir, Uttar Pradesh, Chhatisgarh have the difference to be the magnitude of 20% and above¹. When we examine literacy rates and skill education the actual situation appears different. For this reason, now the government has emphasized on digital education to ensure that every student can get education without any hindrance. Especially, the rural areas of India are incredibly diverse, with people from different castes and religions living there. Each community has its own language and dialect. India implemented various schemes and policies to enhance the conditions of different sections of society and safeguard their rights. However, there is still a need to address important issues that challenge the status of marginalized people. Digital education can be an ideal solution to provide educational opportunities to every section of our society. Hence, we should consider adopting digital education to ensure equal access to education for all.

2.1. Barrier of Demographics Languages and Digital Education:

India is a country known for its unity in diversity, with a vast array of languages spoken across the nation. The Eighth Schedule of the Constitution of India officially recognizes 22 languages, while many more are spoken in different regions, including traditional languages prevalent in tribal areas. The language barrier presents a significant challenge to the implementation of the Digital India flagship program. Social scientists have highlighted the need for equal representation in the education system, advocating for the inclusion of teachers from diverse language groups. Private schools should also support this approach to ensure students can effectively understand digital education, technology, and other technical subjects. As primary education forms the foundation of the learning process, providing instruction in students' native languages can greatly enhance comprehension. The initiative seeks to offer education through digital means as a complementary alternative to traditional methods, aiming to make learning more accessible and inclusive.

2.2. Promote the Traditional-Handicraft and Digital Education:

The current focus of the Union Government is on promoting 'self-reliance', prioritizing local products, and emphasizing traditional art, dance, culture, craft, and sports. When these elements are integrated into rural schools and colleges as per the new education policy, they gain more significance. For example, various agencies such as TRIFED², PVTGs³ government agencies, and NGOs have worked for the promotion of the tribal's

¹https://mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/social_statistics/WM16Chapter3.pdf

²TRIFED- Tribal Co-operative Marketing Federation of India

³PVTGs - Particularly Vulnerable Tribal Groups. This name was earlier known by the name of primitive tribal groups.

⁴<https://tribal.nic.in/DivisionsFiles/SwLPVTGs.pdf>

ancient traditional culture through digital platforms many times. After the COVID-19 period, everything has shifted back to online mode, increasing the use of digital platforms. Now, people are interested in learning about the traditional culture, crafts, and handloom of the Tribals. The Dongria shawl is woven and embroidered by women of the Dongria Kondh aPVTG tribal group residing in the Niyamgiri hills of Rayagada. There are 58 Dongria-inhabited villages under Muniguda and Bissamcuttack blocks of the Gunupur Sub-division of Rayagada district of Odisha and women in almost all the villages are into weaving Kapadaganda¹. Below the picture is a shawl of Dongria Kondh PVTG tribal group.

Picture No-1²



(DongoriaShawl is homemade design of Dongorai Kondh PVTG group of Odisha)

The Kapadaganda Shawl, a unique hand-woven product of the Dongria Kondh PVTG tribal group in Odisha, has been granted the Geographical Indication (GI) tag³. This handloom product is woven and embroidered by women belonging to the Dongria Kondh PVTG Group, a tribal group with the GI tag. People associated with the industry are hopeful that the authentic Kapadaganda shawls will see an increase in demand⁴. Several reports emerged on how tribal people became self-reliant during the COVID-19 pandemic and its lockdown period. Because everyone should know here is that many groups have tried to promote such traditional work through digital mode promotion. This is the effect of digital mode. Therefore, traditional techniques are gradually reaching more people, and non-tribal individuals should also be educated about these methods. Some state governments and some NGOs have also started programs for this educational purpose through online and physical mode.

¹<https://www.newindianexpress.com/states/odisha/2021/Sep/21/odisha-dongria-tribal-weavers-seek-gi-tag-for-kapdaganda-shawl-2361633.html>

² This picture was collected by me during my PhD field work with the help of DongriaKondhaDevelopment Agency (DKDA) of BissamcuttackBlock of Gunupur Sub-division of Rayagada District of Odisha.

³<https://search.ipindia.gov.in/GIRPublic/Application/Details/773>

⁴<https://news.abplive.com/>

2.3. Online Teaching Support and Initiatives:

The 'India Report Digital Education' by the Ministry of Education has introduced several initiatives to support students, scholars, teachers, and lifelong learners in their education. These initiatives cater to educational needs from school learners to postgraduates. One major initiative, PM eVidya, was launched on May 17, 2020, with the goal of coordinating all efforts related to digital, online, and on-air education to provide equal access to education through multiple modes. It was expected to benefit nearly 25 crore school-going children nationwide (Education, 2020). These initiatives have been a great help to students who faced challenges in continuing their education during the COVID-19 pandemic.

2.4. Skill Orienting Programs and Digital Education:

The New Education Policy (NEP), 2020 in India emphasizes skill-oriented education. The government has introduced various initiatives to promote skill-oriented programs. One such initiative is the National Skill Development Mission, also known as Skill India, which was launched on 15 July 2015¹. The government's flagship scheme, PMKVY, aims to encourage skill training by providing financial rewards to candidates who successfully complete approved skill training programs²³. After completing training in these skill programmes, students and others can continue to enhance their abilities by utilizing online lectures and videos. Digital education helps individuals acquire essential skills that can be directly applied to new small-scale industries or home-based businesses. These methods are especially beneficial for those aiming to become self-reliant and develop crucial skills in today's rapidly changing environment.

3. Conclusion:

Implementing new policies within India's existing social structure has always been challenging, and the success of any policy relies on consistent implementation and monitoring. In rural India, despite promising education statistics on paper, there remains a significant lack of awareness on the ground. Many people in these areas are still unfamiliar or uncomfortable with technology. Possessing a mobile phone or laptop alone does not make someone more educated. Even today, a student's knowledge is often assessed based on their exam marks. In the digital age, access to knowledge is available to anyone, anywhere, but it is crucial to provide opportunities for applying this knowledge to solve real-world problems. With a young population, India has the potential to empower its youth through effective training, enabling them to achieve great things. It is also essential to make remote rural areas, including tribal regions,

¹<https://economictimes.indiatimes.com/jobs/government-to-train-40-crore-people-under-skill-india-initiative/articleshow/48090083.cms?from=mdr>

²<https://www.ndtv.com/india-news/pm-modi-launches-skill-india-initiative-that-aims-to-train-40-crore-people-781897>

³<https://msde.gov.in/en/schemes-initiatives>

more technology-friendly by promoting digital education on a large scale. This approach will allow these communities to leverage opportunities to advance their traditional practices, such as farming, art, painting, and dance. Taking the right initiatives and utilizing resources effectively are vital to this endeavor. The digital education model has the potential to bridge the gap from villages to cities, much like the LPG model connects rural and urban markets. This educational connection will ensure that students gain not only marks on a report card but also practical experience and valuable knowledge. Such an approach will result in efficient training, contributing significantly to the country's future development.

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National Education Policy 2020 and Inclusive Idea of Ancient India

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Abstract

A prime feature of ancient India is that it has been shaped in the course of time by religion. Religion practically dominated every aspect of national life. The advent of foreign political, social, and cultural elements deviated from the religious base of Indian life. Social, philosophical, cultural, and political inclusive ideas were distorted systematically by Britishers. In this way, the inclusive idea of India was erased. NEP2020 is an academic tool addressing the inclusiveness of Indian thoughts and philosophy. The true idea of India was inculcated through the provision of policy. The present article focuses on the inclusive and progressive ideas of ancient India. Besides this, it also focuses on how NEP-2020 reflects ancient India's inclusive and progressive spirit.

Keywords: *Idea of India, NEP2020, Inclusiveness, progressiveness, Multidisciplinary Approaches.*

Introduction

Ancient Indian Education is the outcome of the Indian theory of knowledge and a scheme of life and values. The quest for knowledge (Jñāna), wisdom (Prajñā), and truth (Satya) have always been considered the highest human goal in Indian thoughts and philosophy (UGC, 2023). Kautaliya says that educational aims would be to create knowledge, develop the wisdom to use the right knowledge at the right time and the right place for the right purposes and develop skills to get the proper results of knowledge in real life (Varakhedi, 2022,p.1). This reflects that the learning and education in ancient India were manifested in the philosophy, religion, values, and traditions of Indian culture. Thus, the Indian knowledge system in the ancient period was a rich and diverse field of philosophy, religion, values, science, arts, and literature. The IKS was deeply rooted in Vedas, Upanishads, and other ancient Indian scriptures, providing profound insights into the nature of reality, human existence, and the

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universe(Das, 2024; Dwivedi, 2018). The IKS produced great scholars such as Aryabhat, Bhashkaracharya, Charaka, Brahmngupta, Chanakaya, Panini, Patanjali, Gargi, and Chakrapani Datta, among numerous others(NSCNCF, 2023). These scholars greatly contributed to the knowledge system of various fields like mathematics, astronomy, medicine, politics, surgery, engineering, yoga, fine arts, and many more. Another important characteristic of the Indian Education system is that learning in India through the ages has been pursued not for its own sake but for the sake of religion. Education aids in this self-fulfilment, not in acquiring objective knowledge. The idea of India as a nation has been well understood and defined since ancient times. India as a nation remains intact in the minds of Indians in all odd circumstances. This shows a profound underlying unity despite the great diversity in the country. The feeling of 'unity in diversity' made the ancients strive for harmony and look to India as one land. Our philosophers and poets viewed the country as an integral unit, stretching from the Himalayas to the sea. Vishnu Purana defines the geographical contour of India in detail. The idea of India is a comprehensive concept that cannot be understood in regimentation. It is an integrated entity. All components of human life make up the idea of a nation. Politically, the idea of India was diluted many times from ancient to modern times, but culturally, it remains intact and facilitates the process of regaining political freedom from foreign powers. The contemporary education system focuses on the 'how' rather than the 'what.' Focusing on 'how' enables the learner to develop higher-order cognition and transform them into reflective learners. The ancient Indian education system (IKS) has also focused on 'how' rather than 'what' approaches {Citation}. To consolidate the idea of the nation in a true and accurate sense, education policies and programs could prove to be a vibrant means of achieving the targeted goal. In this direction, NEP-2020 plays a critical role in idealizing and materializing the idea of India. Chapters and various sections of policy endorsed the idea of India in detail and practicality.

Idea of India

All aspects of national life at present have their roots in ancient India. The present is the unbreakable flow of the past; religion plays a critical role in consolidating the present. Historically, Indians were greatly influenced by religious ideas, leading them to view their nation less as a mere physical or material entity and more as a cultural one closely intertwined with their identity. (Mookerji, 1999) noted, "The country was their culture and the culture their country." The political and social reality for ancient Indians was not geographical or ethnic but a cultural pattern. A key characteristic of ancient Indian civilization is the profound influence of religion, which shaped every aspect of life more significantly than political or economic forces. Religion was deeply embedded in the social, political, and economic structures, providing the laws and organization that governed society and regulated financial matters. This comprehensive system of beliefs, practices, and behaviors is known as dharma. Dharma was not a religion but a code of conduct to steer the mundane life spiritually (Sharma, 1999).

Progressive

India has a progressive society that is shaped by its long history, diverse culture, and ongoing educational, social, political, and economic changes. This progressiveness is deep-rooted in ancient Indian culture, which was based on cultural diversity, openness in ideas, and acceptance of social reform. The progressiveness of India is also reflected in its cultural and religious diversity. The Indian culture accepted everyone who came from various parts of the world, i.e., Greek, Persian, Arab, Tatar, Central Asian, England, France, and Portugal. These people brought their culture, religion, language, Art, and values to India, which enriched Indian culture. The infusion of these cultures with Indian culture developed some unique arts and architecture, i.e., Gandhara Art (a fusion of Indian and Greek Arts) and Indo-Islamic architecture. These infusions are the hallmark of the progressiveness of Indian culture.

Inclusiveness

The term inclusive means a sense of belongingness: the feeling of oneness, respect, and treating them fairly and equally. This feeling encourages the supportive behavior of others and also makes people feel valued. Maha Upanishad's philosophy presents the idea of inclusiveness beautifully in the form of "Vasudhaiva Kutumbakam," which is a Sanskrit phrase that means the whole world is a single family. This concept of human survival evolved through the philosophy of scripture like Upanishad and Vedas. Gradually growing life motto and process of Indians through the religious, social, and philosophical needs of times developed the practical and everlasting idea of peaceful survival in worldly and personal life. It is a philosophy that believes all living beings are single families. The Vedas speak of all types of equality, and equality by birth and gender equality are two cardinal Vedic norms now enshrined in the constitution of India (Pandey, 2024). The "Vasudhaiva Kutumbakam" is an integral part of Indian culture which is known for its diversity and tolerance. The rich, diverse culture, knowledge system, and tradition become the medium of reflection of India's ideas. The culture of India gives equal importance to gender equality. Gender equality refers to men and women being equal despite their differences in opinion, behavior, and aspirations. According to Rigveda, there were 29 women in more than 414 rishis (Saraswati, 2020; Pandey, 2014, p. 155). This reflects that there was no gender bias in the Vedic period. India constituted one single geographical unit that stayed in the minds of the conquerors, and they ignored the cultural aspect of Indian life. Ancient Indians continuously tried to achieve linguistic and cultural unity in the country. Ancient India emphasized collective thinking in place of individual thinking. In one place, Rigveda says that common be your intention, heart, and thought so that there may be a thorough union among us (Pandey, 2014, p. 156). Even the 1.4 billion people of India have vast variations of political thought but culturally have oneness. Indeed, India has an admirable record in fostering inter-community amity and friendly coexistence. Indian philosophical thought and cultural aspects have immensely influenced the world. The great scholars of ancient India of every domain were given inspirational roles and places because they made seminal contributions to world knowledge in diverse fields.

Break on the real identity of India

It is a historical truth that conquerors constantly demean the conquered regarding their culture, religion, education system, norms, tradition, and values (Friere, 2005). Conquerors of all periods (ancient, medieval, and modern India) had misrepresented Indians in India and beyond boundaries; Europe has a self-praised tendency to assume that political freedom and democracy are Western culture's fundamental and ancient features and freedom and democracy are not easily found in ancient India (Sen, 2006). The British interpretation and explanation of India's historical and social past were consistently inimical to the fundamental idea of India. Indian thought, values, tradition, literature, philosophy, and all aspects of culture were understood and explained from Macaulay's perspective. On Indian Education, Macaulay said (Halsall, 1996), *"I believe, no exaggeration to say, that all the historical information which has been collected from all the books written in the Sanscrit language is less valuable than what may be found in the most paltry abridgements used at preparatory schools in England. In every branch of physical or moral philosophy, the relative position of the two nations is nearly the same."* British policymakers designed policy with the exigency of British society and culture in mind and intentionally discarded the needs and culture of native people. However, an effective education system is always associated with local needs and culture. Religion, tradition, home, prevailing customs, and other institutions of life are part of the culture, which influences the mind and heart of the human being for overall development. In British policies, these cultural aspects were ignored intentionally. There is no doubt that ancient Indians made remarkable progress in different fields of life, but those advances were not positively presented among common people in the past time. NEP-2020 made serious, honest, and organized efforts to propagate ancient Indian knowledge, tradition, and culture. It made these the source of aspiration and guidance for the present generation to materialize the idea of India. NEP emphasizes multilingualism, multidisciplinary, respect for the local context, synergy in the curriculum at all levels of education, outstanding research rootedness, and pride in India.

NEP as a continuity of the idea of India

Indian society is undergoing tremendous change and fundamental reconstruction, so the outcome is uncertain and unpredictable. To manage and channel the uncertain outcomes, NEP-2020 formulates the course of action for school, college, and university education. It does not make learners respond mechanically to their environment but as initiators of their own actions with free will and creativity. It tried to fix achievable targets and formulate actions to materialize the target of achieving past glory and reflection in India.

Indianisation of Education

NEP-2020 has sought to spiritualize the education system by taking a stand upon its broader social and cultural foundation. As culture is a comprehensive concept and contains various aspects of life, it affects the education system's aims, objectives, and spirit. NEP-2020 facilitates the constant evolution of affirmative action. It faithfully

imbibed the progressive, inclusive, and democratic spirit into its stakeholders. Whatever the form of Indian cultural values and ideas are expressed in NEP-2020. Point 15.1 of the Policy endorses, “Teacher must be grounded in Indian values, languages, knowledge, ethos, and tradition.” In this direction, point 15.5 of the policy observed that teacher education would include “knowledge of India and its values/ ethos/ art/ tradition and more.” NEP-2020 tries to inculcate a sense of pride in its own language, culture, religion, and ethos. People are not considered civilized unless they know their mother tongue (local language), so NEP gives high respect and places to the mother tongue in teaching and learning (point 4.11). The policy mentioned that “the rich heritage of ancient and eternal Indian knowledge and thought has been a guiding light for this policy”. Ancient Indian knowledge and thoughts develop knowledge, how to acquire it, how to self-realise, and how to prepare to face future problems in life. There are many tools for presenting the real and true picture. However, the most reliable and authentic tool is the education policy to regain the lost reputation of society and nation. The policy provides a modern framework for the Indian knowledge system. This framework has the potential to nurture creativity, innovation, problem solving skills among the learners. the policy further claims, “This would help build vibrant communities of scholars and peers, break down harmful silos, enable students to become well-rounded across disciplines, including artistic, creative, and analytic subjects as well as sports, develop active research communities across disciplines including cross-disciplinary research, and increase resource efficiency, both material and human, across higher education”. Thus, the policy succeeded in merging valuable aspects of Indian education with contemporary, flexible, and inclusive approaches, creating well-rounded and innovative individuals who can transform the nation educationally and economically (Singh, 2024).

Multidisciplinary Approaches

Ancient Indian universities like Takshashila and Nalanda, which had vibrant multidisciplinary environments, were treated as role model universities for reverberating the dormant Indian higher education institutions. That is why the NEP-2020 emphasizes bringing back the culture and tradition of ancient Indian universities in the form of large multidisciplinary universities and a cluster of higher education institutions (HEIs) to accommodate thousands of students to learn and research in a multidisciplinary environment. Ancient poet Banabhatta, in his literary work ‘Kadambari,’ considered good education ‘knowledge of sixty-four arts (subjects like chemistry, professional skills –music, and soft communication skills). This shows that a holistic and multidisciplinary education promotes integrating arts and humanities with Science, Technology, Engineering, and Mathematics (STEM)(Bora, 2024). This integration is expected to develop all capacities (cognitive, aesthetic, moral, etc.) and foster mastery across diverse subjects. This type of approach to education nurtures well-rounded and critical-thinking citizens.

Equitable and inclusive

One of the key aspects of the NEP-2020 is equitable and inclusive education. The NEP-2020 recognises that some sections of society are under-represented in the educational system. To address this discrepancy, NEP-2020 has grouped together gender identities, socio-cultural identities, geographical identities, disabilities, and socio-economic conditions to create a new social group called Socio-Economically Disadvantaged Groups (SEDGs). To enhance the participation of these groups in education, NEP-2020 proposes several policies and strategies, such as offering targeted scholarships, conditional cash transfers to encourage parents to send their children to school, and providing bicycles for transportation, which have previously proven effective in increasing enrollment (Sahoo, 2020). Besides this, the policy advocated various other interventions to uplift the educational status of the SEDGs at different educational levels.

Medium of Instruction

In order to make human beings think properly, a good grounding in language is needed (Varakhedi, 2022, p. 4). This is the reason why language education is necessary. One of the most important aspects of NEP-2020 toward the Indianisation of education is emphasizing home language/ mother tongue as a medium of instruction. In the development of the Indian Knowledge System (IKS), Indian languages can play a very crucial role. The NEP-2020 says, "Wherever possible, the medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother tongue/local language/regional language". Much research shows that education in the mother tongue helps to understand concepts better and develop clarity in thoughts (Nand, 2022). After grade 8th, the children can continue their school or higher education in their mother tongue.

Conclusion

When someone casts his attention to Indian tradition, he finds various views on freedom, tolerance, and equality. To tolerance, the writing of Asoka and the action of Akbar on an egalitarian basis can be sources of inspiration. Those commanded an enormous Indian empire. They turned their attention to public ethics and enlightened policies in a big way. The Indian tradition and culture promote inclusiveness through spiritual, social, and individual unity. The Vedas advocated that natural resources should be made available equally to all. Cows of different colours like black, red, and spotted ones give the same white milk. It is a metaphor used in Vedas for unity in diversity: the pillar of Modern India (Pandey, 2024, p. 156). NEP-2020 succeeded, unlike its previous policies, in successfully bringing substantive changes in the mechanism of understanding the nation's culture. NEP-2020 addresses the growing developmental imperative of the nation. It lays the path for the nation to move beyond the goals of last-century India to those of modern, aspirational India. Myths about India are diluted with rational and pragmatic considerations. Policy highlights some of the most important, path-breaking, and path-changing contributions made in ancient India to understand the society, economy, and education of 21st-century India (Nand, 2022; Singh, 2024). The policy

allows everyone to exercise capability and contribute freely to the making of India. NEP-2020 reframes the national ethos to achieve a culture of peace and inclusion in place of exclusion. Policy tried its best to rejuvenate ancient Indian culture and traditions through the modern education system. Policy tried its best to define, practice, and implement the idea of India among the learners of all stages.

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A critical analysis of the Current Social and Educational Status of the Namasudra Community of Raiganj Block under Uttar Dinajpur District, West Bengal

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Abstract

This work aims to investigate the current social and educational status of the residents of the Namasudra community in Raiganj Block, Uttar Dinajpur District, West Bengal, India. The study is based on primary data, though some secondary data was obtained from books, journals, research articles, and research reports. The primary data was collected in 2024 through participant observation and interview techniques using standard questionnaires; multi-stage stratified random sampling was used for this purpose; using a variety of cartographic methods and diagrams, the data was first tabulated, processed, and then presented and interpreted. The findings of the analysis indicate notable differences in the percentages of male and female literate and illiterate individuals, as well as in social and educational achievement, child dropout rates, enrolment rates, and the children's preference for a particular school for their primary education in Raiganj Block. The findings indicate that, relative to the other eight blocks of Uttar Dinajpur, the Namasudra population of Raiganj Block has made some progress toward education at nearly every educational level. In light of the study area, as well as the regional and national levels, an attempt has been made to provide recommendations for the Namasudra community's fair participation in the educational process and for their social growth.

Keywords: *Social and Academic Context, Namasudra Community, Fair Involvement, Critical Fusion, and Growth.*

Introduction

India is dedicated to social justice and growth as a welfare state. The two main goals of Economic Planning of India, to end poverty and improve living conditions for all citizens, especially the most vulnerable groups. A portion of this poorer demographic in India has

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been constitutionally classified as Scheduled castes, as per the GOI Act 1935. Prior to the 1935 Act, these excluded groups were referred to as the "Depressed Class." In the state of Bengal, one such scheduled caste or depressed class community is referred to as the "Namasudra." The goal of this work is to investigate the current social and educational circumstances of the people living in the Namasudra community in Raiganj Block of Uttar Dinajpur District, West Bengal, India.

The schedule caste group, which is primarily found in Arunachal Pradesh, Orissa, West Bengal, Tripura, Manipur, Mizoram, Meghalaya and Assam in India, as well as eastern six districts of Dacca, Faridpur, Jessore, Khulna and Mymensingh in Bangladesh, is recognized by the Indian constitution as belonging to the socioeconomically backward Namasudra community. In contrast to the other caste, these communities are extremely impoverished and have a fascinating history of emergence or evolution. According to the ethnologists James Wise and Herbert Risely, the words "Namasudra" are thought to have originated from two Sanskrit words: "Namas" or "adoration" (meaning those obligated to show equal respect to Shudras) or from the word of Bangla "Namate," which means "underneath" or "beneath," denoting a down class of Shudras. The term "Namasudra" denotes two things, first, paying respect or namaskar, i.e., the individuals who honored the Shudras (Namati Shudrang); and the second, to be avoided, which suggests being avoided by Shudras (Shudrena Namah). According to N.C. Das, another Namasudra commentator, the word "Namasudra" refers to who were worshipped, which makes the most sense of all the explanations. In the context of caste society, Shudra refers to the lower strata of people, while man denotes respected. "The Namasudra community, formerly called Chandals or Chandala, who were primarily residents of the East Bengal district (at present Bangladesh), were forced to migrate to West Bengal during the partition of India in 1947," according to Sekhar Bandyopadhyay's study "Caste, Protest and Identity in Colonial India: The Namasudras of Bengal, 1872–1947." Chandal, Charal, Namasud, and Namah are the several synonyms for Namasudras (Singh, K. S., 1995).

In the modern day, education is seen as a basic human right and the most effective means of achieving both personal and socioeconomic development goals. Those with education tend to be more self-sufficient, active, and healthy than those without it. With a rich history of formation, consolidation, and social and political recognition movements, the Namasudra caste is the second largest caste of Hindus in Bengal province, after the Rajbanshi. The Namasudras of West Bengal had achieved significant social, educational, and educational advancements by the start of the twenty-first century, despite continuing to be sidelined politically.

Review of Literature: Pre-assessment of studies and literature reviews are crucial in the context of social science research because they facilitate smooth management procedures and give information about the research's subject and subtopics. It is often known that social problems are related to the nation, the time, and the circumstances; therefore, historical research is not only important but also crucial.

Pimpley, P.N. (1980) conducted a study titled "The Problem of Non-Attendance in Schools of the Children (6-14 years) of Scheduled Castes in Haryana". The majority of children were attendees, and the author emphasizes that the distribution of education among employers was far lower among females than among males. All of the individuals involved in small business did not show up. Children's attendance at school appeared to be positively correlated with the family head's educational attainment. Student attendance and knowledge of the reservation policy are strongly correlated. Using an anthropological and statistical perspective, Dana Dunn (1993) presents a descriptive profile of women's status in India's scheduled castes and tribes in her study "Gender Inequality in Education and Employment in the Scheduled Castes and Tribes of India." She also makes note of the fact that, in comparison to members of the General Caste, Scheduled Caste members are further removed from social, educational, and career prospects.

Om Prakash Sangwan's (1996) book "Dalit society and Challenge of Development" details the socioeconomic conditions of the social structure, down-trodden classes, politics surrounding reservations, the social and educational advancement and class evolution of the scheduled castes as well as their emancipation struggle.

Dalit communities are less literate than non-Dalit populations for the following reasons, according to Mishra's (1998) analysis of the literacy rate among the dalit community of Atarra Teshil, Uttar Pradesh. According to Mishra (a) Their regular tasks are not much impacted by literacy, (b) Rather of sending their child to school, they saw their youngster as an indispensable instrument for every day family activities, (c) The actual distance between their residence and the school.

Social integration, social and educational inequality, enrollment rates, differences in social and educational attainments, constitutional provisions concerning the education of Scheduled Caste population and the influence of education on marriage are emphasized in S.K. Chatterjee's (2000) book, "Social and educational Development of Scheduled Castes Looking Ahead." In his groundbreaking study "Emergence of Namasudra as a sub-caste: an Ethnological view," N. B. Biswas (2004) made an effort to examine the ethnological perspective of the Namasudra community's formation as a sub-scheduled caste, as well as its consolidation and struggles for social and political recognition. Additionally, he draws attention to their economic and social standing in society as well as how the Brahmins of the upper caste take advantage of them.

The most important factor in a country's development and prosperity, according to A.P.J. Abdul Kalam's (2005) paper "For Dignity of Human life," is education. India's goal is to become a developed country by the year 2020. However, 350 million people lack literacy, and a great number more need to learn skills that are marketable in today's evolving India and around the world. President Dr. A.P.J. Abdul Kalam addresses to the country on the eve of Independence Day, children from the weaker segments of our society suffer from malnourishment and undernourishment, and a mere fraction of them finish their eight years of education with satisfactory results.

The topic surrounding the education of the Scheduled Caste, namely the social and educational status of SC girls, is discussed by Mily Roy and Mona Yadav (2006). In their research "The Inclusion of SC Girls in Education: A Long Path Ahead." Many girls from the SC region lack access to higher education levels. In addition to describing the low female literacy rate and the non-participation of SC girls in education, the authors also discuss the drop-out rate among Scheduled Caste Girls and attempt to address these issues through suggested strategies and various government initiatives.

Scheduled caste social and educational attainment in Indian schools, colleges, and universities is described statistically by Awadesh Singh and Parveen Parveen (2006) in their seminal work, "Social and educational Empowerment of Scheduled Castes: A Study on the Working Patterns of Training Schemes." Notwithstanding the growing tendency of children from scheduled castes enrolling in higher education, the survey also shows that there has been severe discrimination in the sphere of education.

Arun Kumar Ghosh (2007), in his research paper titled "The Gender Gap in Literacy and Education among the Scheduled Tribes in Jharkhand and West Bengal," used the gender disparity index to examine the gender gap in literacy and education among the Scheduled Tribes in Jharkhand and West Bengal. The study shows that, in comparison to other tribes, the Mahali, Ho and Lodha tribes in West Bengal and Jharkhand have poor female literacy rates, and that these discrepancies widen as students get higher education. The enrollment rates, female child dropout rates, and problems with indigenous education are also highlighted by the author.

In the current era of globalization, education is regarded as one of major meaning of development for weaker section of society, such as the Scheduled Castes, according to G.G. Wankhede (2008) in his article "Accessing Higher Education: Affirmative Action and Structured Inequality - The Indian Experience." The primary cause of these obstacles to education's accessibility, performance, and sustainability is their conventional socioeconomic standing. Even though the government promised to use a variety of means to make up for their lack of resources, the program's execution has a number of flaws. The author recommended a significant overhaul of the plan.

The socio-economic circumstances of individuals in society can be significantly changed by education, as demonstrated by Chandrashekar and S.B. Akash (2011) in their study "Social and educational and Occupational Aspirations of Scheduled Caste College Students: An Empirical Study." The 225 students who were part of the scheduled caste community and were enrolled in various degree colleges in the Raichur district were included in the questionnaire that the authors used to perform the study. According to the report, the majority of students from scheduled castes aspire to work as professors or lecturers rather than as KAS or IAS officers. Their poor economic circumstances could be the cause of this.

The daily lives of common Dalit women in western India are central to Shailaja Paik's (2014) book, "Dalit Women's Education in Modern India Double Discrimination," which analyzes the Dalit can access to education in the 20th century. Researcher Shailaja Pail

provides with a clear understanding of education, including what it is, how Dalits approach it, and how flexible their views are. She has provided us with a multifaceted analysis of discrimination in the educational system. In her research, Shailaja Pail brought attention to the fact that Dalit women experienced dual discrimination as they were not only not accepted in public schools—which were meant to serve all children, but also weren't always sent there by their parents.

Research Questions:

Their research questions are given below:

1. What is the current status Namasudra community of Raiganj Block of Uttar Dinajpur District?
2. What are the root causes of Namasudra Communities social and educational regression?
3. How do the situations would be changed?

Aims and Objectives:

This study's primary goals are as follows:

1. To study the social and educational status of the Namasudra community of Raiganj Block under Uttar Dinajpur District of West Bengal, India.
2. To identify the root causes of the Namasudra people's social and educational regression and their schooling issues in the study area.
3. To provide recommendations for equitable participation of the Namasudra Caste in education within the scheduled communities at local, regional and national level.

Study Area:

Uttar Dinajpur District, which is a part of the Jalpaiguri division of West Bengal State, was created on April 1, 1992, when the former West Dinajpur district split into two distinct districts: Dakshin Dinajpur, which has its headquarters at Balurghat, and Uttar Dinajpur, which has its headquarters at Raiganj. The Raiganj Development Block in Uttar Dinajpur District, West Bengal, India, has been chosen for a comprehensive investigation on the current social and educational circumstances of the Namasudra Community. With a total land area of 472.13 km², the Raiganj Block is bordered to the east by Hemtabad Block, to the south by Itahar Block, to the west by Bihar, and to the north by Karandighi. With 430,221 people living in the Raiganj Block overall and an average population density of 910 people per square kilometre, 16,078 of them are urban and 414,143 are rural. There were 208,483 (48%) females and 221,738 (52%) males. 61,515 people were under the age of six. According to the 2011 Indian census, there were 27,785 Scheduled Tribes and 163,662 Scheduled Castes (38.04% and 38.06%, respectively) (Fig.1).



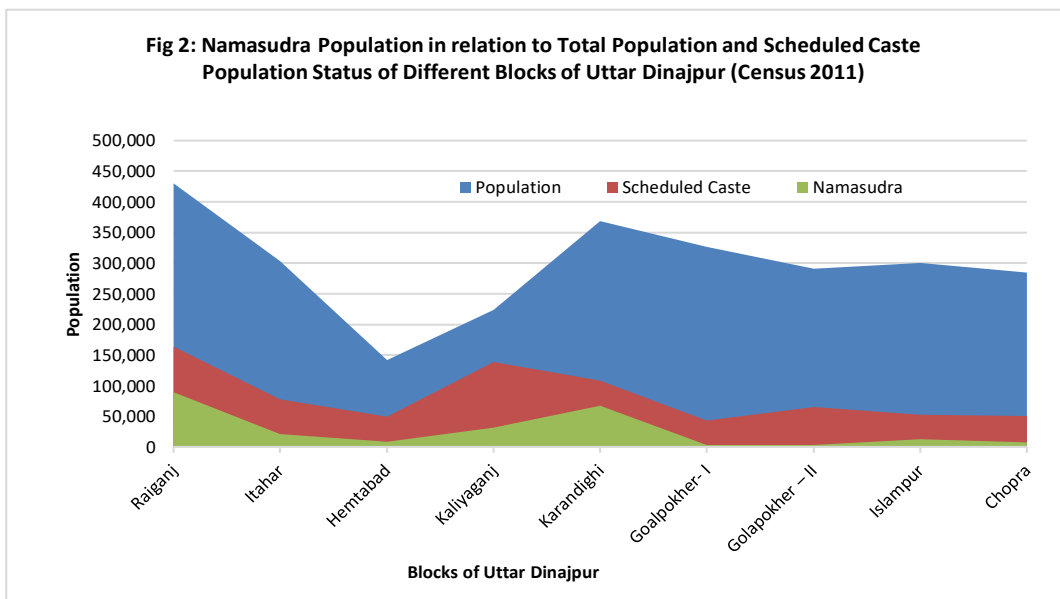
Fig.1: Map of Raiganj Block and its surrounding

Methods and Analysis

The current study uses both primary and secondary data sources to illustrate and evaluate the social and educational landscape of Uttar Dinajpur District's Namasudra Community. With the aid of standard questionnaires that were gathered from the field (study region), namely Raiganj, Itahar, Hemtabad, Kaliyaganj, Karandighi, Goalpokher- I, Golapokher – II, Islampur and Chopra Block of Uttar Dinajpur District of West Bengal, using the multistage stratified random sampling method, the primary data was gathered by interview methodology. Additionally, the responders are directly involved in the participant observation technique. Data from secondary sources is collected from a variety of published and unpublished sources, including books, journals, research articles, research reports, doctoral theses, dissertations, and so on. Several cartographic methods and graphics were used to depict and analyze the acquired data (Table 1 and Fig 2).

Table 1: Namasudra Status in Different Blocks of Uttar Dinajpur (Census 2011)

Sl. No	Blocks	Lat Long	Area (km ²)	Population	Density	Male	Female	Scheduled Caste	Namasudra
1	Raiganj	25°37'N 88°07'E	472.13	4,30,221	910/km ²	2,21,738	2,08,483	1,63,662	89,267
2	Itahar	25°45'N 88°16'E	362.40	3,03,678	840/km ²	1,55,777	1,47,901	78,177	21,378
3	Hemtabad	25°41'N 88°13'E	191.82	1,42,056	740/km ²	72,624	69,432	49,446	8,312
4	Kaliyaganj	25°38'N 88°19'E	301.90	2,24,142	740/km ²	1,14,104	1,09,038	1,38,461	31,259
5	Karandighi	22°57'N 88°36'E	390.52	3,68,332	940/km ²	1,88,572	1,79,760	1,07,936	66,792
6	Goalpokher- I	26°05'N 88°08'E	365.11	3,26,120	890/km ²	1,69,954	1,56,166	43,442	3,520
7	Golapokher – II	26°02'N 87°95'E	298.69	2,91,252	980/km ²	1,50,125	1,41,127	64,877	2,970
8	Islampur	26°16'N 88°12'E	329.44	3,00,518	910/km ²	1,58,933	1,49,586	52,418	12,354
9	Chopra	26°24'N 88°18'E	480.82	2,84,403	800/km ²	1,47,073	1,37,330	50,818	7,321



Results and Discussions

This study shows the Current Social and Educational Status of Namasudra Community in Raiganj, Itahar, Hemtabad, Kaliyaganj, Karandighi, Goalpokher- I, Golapokher – II, Islampur and Chopra Block under the district of Uttar Dinajpur, West Bengal. Here is the comparative analysis of different Below Poverty Line (BPL) category with in the study area (Table 2 and Fig 3).

The current educational situation of the Namasudra community in Raiganj, Itahar, Hemtabad, Kaliyaganj, Karandighi, Goalpokher- I, Golapokher – II, Islampur and Chopra Block of Uttar Dinajpur District of West Bengal, is highlighted in this study. Here, we provided a comparative analysis of the percentage of illiterate in between total literate and Scheduled caste literate in the study area (Table 3 and Fig 4).

Table 2: Comparison between different category of BPL holder of different blocks of Uttar Dinajpur (Census 2011)

Sl. No.	Blocks	Total Population	General caste BPL category	Scheduled Caste BPL category	Namasudra BPL category
1	Raiganj	430221	292550	68738	28565
2	Itahar	303678	206501	32834	6841
3	Hemtabad	142056	96598	20767	2660
4	Kaliyaganj	224142	152417	58154	10003
5	Karandighi	368332	250466	45333	21373
6	Goalpokher- I	326120	221762	18246	1126
7	Golapokher – II	291252	198051	27248	950
8	Islampur	300518	204352	22016	4113
9	Chopra	284403	193394	21344	2343

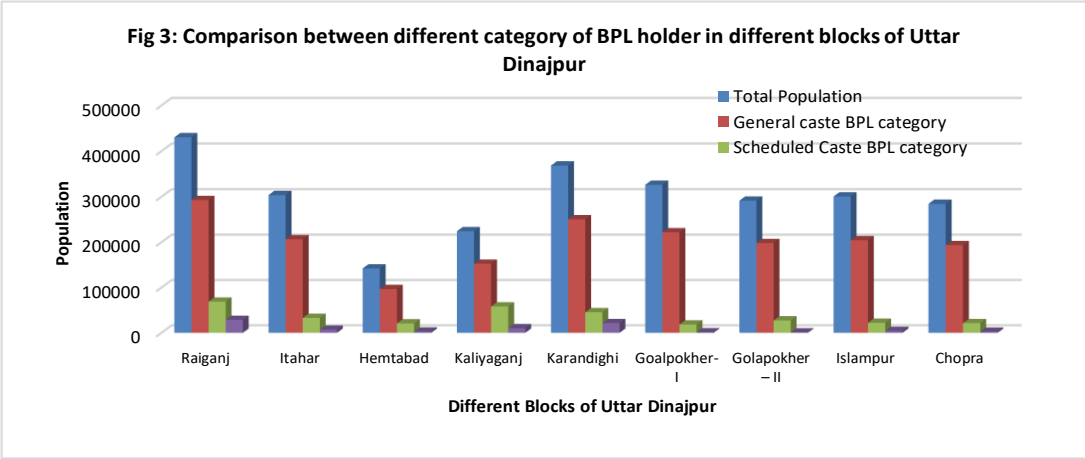
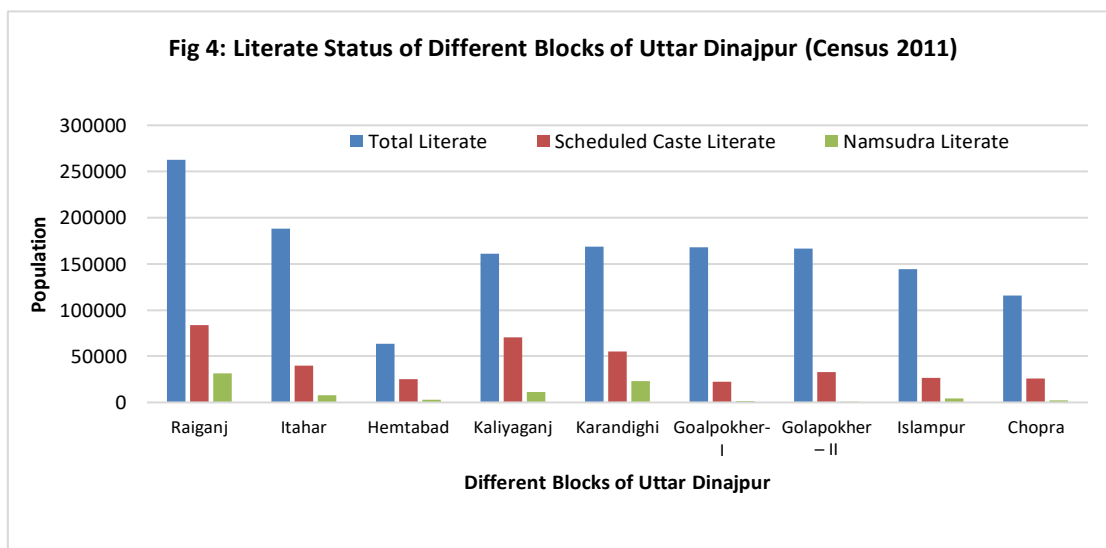


Table 3: Literate Status of Different Blocks of Uttar Dinajpur (Census 2011)

Sl. No.	Blocks	Total Population	Total Literate	Scheduled Caste	Scheduled Caste Literate	Namasudra	Namsudra Literate
1	Raiganj	430221	262408	163662	83468	89267	31243
2	Itahar	303678	188102	78177	39870	21378	7482
3	Hemtabad	142056	63182	49446	25217	8312	2909
4	Kaliyaganj	224142	161272	138461	70615	31259	10941
5	Karandighi	368332	168931	107936	55047	66792	23377
6	Goalpokher- I	326120	167698	43442	22155	3520	1232
7	Golapokher – II	291252	166597	64877	33087	2970	1040
8	Islampur	300518	144042	52418	26733	12854	4499
9	Chopra	284403	115907	50818	25917	7321	2562



The findings of the analysis examining the connection between the educational attainment and awareness of Namasudra community members reveal that (Table 3)

lowering the dropout rates in the Raiganj Block by raising awareness of education. The degree of awareness and educational attainment are positively correlated. However, there is a negative correlation in the case of other 8 Blocks between awareness and educational attainment (Fig. 4).

Major Findings:

1. In Raiganj Block area, the majority of Namasudra youngsters drop out of upper primary school. Because of the economic circumstances, the majority of the lads work to augment their minimal family income. Many young women work at home as bidi binders, abandoning their schooling due to early marriage, ignorance, and illiteracy in the family.
2. With the exception of Social and Educational activities, all Namasudra children in Raiganj Block had higher social and intellectual attainment than other eight Blocks of Uttar Dinajpur.
3. Raiganj Block has a greater rate of Namasudra kid enrolment in school than the other eight blocks, mostly because of educational and social awareness, the availability of educational and social institutions, stability of the economy, etc.
4. The parents of the kids in Raiganj Block are very concerned about their education, which is why they were sendtthem to a private school and prepared to pay more for a higher standard of instruction. They believe that in addition to being overburdened with maintaining the midday meal program, government primary schools are currently suffering from a teacher shortage. Due to their lesser economic situation, parents in other 8 Blocks, however, prefer the government school because it offers free education and a free midday meal.

Implications of the study:

1. It is imperative to address the financial hardships facing Namasudra families in order to enable their members to actively participate in education, as this is the main barrier to their pursuing higher education.
2. Making parents aware of the value of education, enrollment, and ongoing study at all costs for their children is imperative and has to happen immediately.
3. The government is undertaking this mission. bolstering structure, N. G. O. Teachers and schools must collaborate and operate under a single oversight framework.
4. Another possible approach could be to create connections between the community and schools. It is vital and vital that the parents-teacher association improve.
5. Encouraging more Namasudra students to attend school is worth doing. Each educational program offered for that specific area should be planned with the participation of teachers, the institution's head, and community members.
6. Eligible and educated members of the scheduled caste are appointed to government positions. or not government. employment is essential, particularly in

the teaching profession, and if that is the case, the teachers should be appointed in their community.

7. The scheduled caste should have higher expectations for their careers.
8. To help Namasudra parents understand the value of education and their obligations to make all the necessary arrangements for their child's education, guidance and counseling services may be provided.
9. The founding of educational institutions.
10. Students from scheduled castes should have access to more, better, and more affordable hostel options. It would be beneficial to raise the minimum number of scholarships.
11. In order to give more to students who demonstrate better results, the scholarship amount should be awarded starting at the minimum.
12. A concession in tuition and other required fees should be granted to individuals belonging to the scheduled caste. Within the designated caste areas, residential education arrangements are possible.
13. More educators from the designated caste groups ought to be appointed to those positions.

Conclusion and Suggestions:

The results of this study show that, in compared Raiganj with the other eight blocks of Uttar Dinajpur, the Namasudra community in Raiganj Block has made some educational progress at practically every level. In comparison to the other eight blocks of Uttar Dinajpur, the Namasudras in Raiganj Block have superior literacy rates, engagement levels, and educational trends. Furthermore, compared to the Raiganj Block, the Namasudra kids in the Other 8 Blocks of Uttar Dinajpur are having more difficulties with the educational system. Since financial difficulties prevent members of the Namasudra community from pursuing higher education, it is imperative to improve the financial situation of Namasudra individuals and their families as a whole. It is imperative that parents understand the value of education and that their children should continue their education at all costs. The formation of connections between schools and the community is essential for the healthy development of education. enhancement of the parent-teacher organization; For the general social and educational development, close cooperation between interested parties such as non-government, government organizations and schools, teachers and parents, the community and teachers are essential. Teachers, the institution's leader, and community people should all be included in the creation of any social and educational program for the area. To help the Namasudra parents comprehend the value of education and their obligation to make all the necessary arrangements for their child's education, some form of assistance and counseling may be organized. For the weaker students, extra coaching sessions and attention should be arranged at no cost on weekends and vacations. It is important to

raise awareness of the negative impacts of child labor. The government may establish the option for students from the scheduled caste (the Namasudra group) to get free clothing, books, and other supplies up to the secondary education level, including pens, paper, pencils, and slates. Institutions should implement residential education, practical education programs such as health education, sanitation, and cottage industry. The public's involvement is essential for growth of Scheduled Caste (Namasudra) welfare programs, schemes and projects; the efforts of the Central and State governments are insufficient. The literacy rate is gradually increasing despite the difficulties Scheduled Castes face in the educational system. If the Scheduled Caste population is left out, education for all will not succeed. This group falls short despite the Indian Constitution's many rights. Following its independence, India enacted new laws to protect the Scheduled Castes. Quotas for government employment and education are part of these rules. The SC/ST programs in West Bengal help children educate themselves. S.C is drawn to the UGC's Scheduled Caste National Fellowship and Rajiv Gandhi National Fellowship. pupils to pursue further education. I hope that one day all Scheduled Castes members in our nation will be 100% literate.

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Empowering Teachers for Effective Reform: Implementing NEP-2020

Mehmood Ahmed¹ & Mohd Tariq²

Abstract

India's National Education Policy (NEP) 2020 is a landmark reform aiming to create a more inclusive and quality-driven education system. However, its success hinges on empowering teachers, who are crucial in shaping the future of education. This paper delves into the challenges teachers face in implementing NEP 2020, including inadequate training, insufficient resources, and limited autonomy. A multifaceted approach is necessary to address these challenges, focusing on professional development, autonomy, resources, collaborative environments, recognition, teacher leadership, continuous feedback, flexibility, student-teacher ratio, and teacher well-being. Empowering teachers is crucial for the effective implementation of NEP 2020, leading to a transformative education system that benefits all students. This paper emphasizes the need for a supportive ecosystem that enables teachers to drive reform and improve student learning outcomes. It provides a roadmap for achieving this goal, highlighting the importance of a concerted effort to empower teachers. By doing so, we can ensure the successful implementation of NEP 2020 and create a world-class education system in India.

Keywords: Teacher Empowerment; NEP 2020; Educational Reform; Professional Development; Autonomy; Education Policy; Implementation Challenges.

Introduction

The National Education Policy (NEP) 2020 marks a pivotal moment in India's educational landscape, envisioning a transformative overhaul of the country's education system. With a focus on creating a more inclusive, equitable, and quality-driven education ecosystem, NEP 2020 has the potential to revolutionize the way India learns and grows. However, the accomplishment of this ambitious policy hinges on the critical role of

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teachers, who are the backbone of the education system. Teachers are the primary facilitators of learning, and their dedication, expertise, and passion are essential for shaping young minds and fostering academic excellence. Nevertheless, teachers in India face numerous challenges that can make it more difficult for them to effectively implement NEP 2020. These challenges include inadequate training and support, insufficient resources and infrastructure, and a lack of autonomy and agency. This paper expresses the complex issues regarding teacher empowerment and the implementation of NEP 2020, examining the challenges teachers are facing, their critical role in shaping the future of education, and the limitations of the policy. The paper is organized into three main sections: (1) an analysis of the challenges faced by teachers, (2) an examination of the teacher's role in implementing NEP 2020, and (3) a discussion of the policy's limitations and recommendations for effective implementation. By exploring these interconnected themes, this paper aims to provide insights and recommendations for policymakers, educators, and stakeholders to ensure the successful implementation of NEP 2020 and resultant world-class education system in India. NEP 2020 plays an important role in India's educational journey, aiming to create a more inclusive and quality-driven education system. However, its success hinges on the critical role of teachers.

Literature Review

The implementation of India's National Education Policy (NEP) 2020 presents both opportunities and challenges, with teacher empowerment playing a crucial role in its success. Research shows that teachers face numerous obstacles in implementing educational reforms, including lack of training, insufficient resources and limited autonomy.

Importance of Teacher Empowerment:

Teacher empowerment is pivotal for the effective implementation of NEP 2020. Kumar (2020) underscores that teacher empowerment is not just about enhancing skills but also about giving teachers the autonomy and resources needed to drive educational reform. Similarly, Singh and Yadav (2022) highlight that teachers with more power are better equipped to implement policy changes and improve educational outcomes. They argue that teachers should be provided the necessary support and autonomy which will lead to more effective policy execution and better student performance.

Challenges Faced by Teachers:

Teachers are facing several challenges in implementing NEP 2020, including inadequate training and insufficient resources. Sharma (2020) identifies these issues as significant barriers to the successful transformation of the Indian education system. The lack of adequate career advancement and resources hinders teachers' ability to adapt to the new curriculum and pedagogical approaches outlined in NEP 2020.

The NCTE-2020 and the NCERT-2020 provide guidelines that address these challenges, emphasizing the need for comprehensive teacher training and resource allocation.

However, despite these guidelines, systemic issues such as insufficient infrastructure and support continue to affect the implementation process.

Effective Strategies and Policy Recommendations:

To overcome these challenges, effective strategies and strong leadership are essential. The Planning Commission of India (2021) discusses various strategies for empowering teachers, including enhancing training programs and improving resource distribution. Verma and Kumar (2021) further emphasize the importance of addressing the specific needs of teachers and providing targeted support for the successful implementation of NEP 2020.

The Ministry of Education (2020) and NITI Aayog (2021) also stress the importance of creating a nurturing environment for teachers. They recommend fostering collaboration, providing continuous feedback, and recognizing teachers' contributions as key elements in empowering educators and facilitating policy implementation.

Related literature highlights that the effective application of NEP 2020 depends significantly on teacher empowerment. The challenges faced by teachers can be addressed through effective training, allocating resources and encouraging leadership. By concentrating on these areas, policymakers and educators can ensure that NEP 2020 achieves its goals and transforms the Indian education system. The integration of teacher feedback, strategic planning, and continuous support will be essential for overcoming the barriers and realizing the vision of NEP 2020.

Overall, teacher empowerment and capacity building are critical for effective NEP 2020 implementation, requiring a supportive ecosystem and addressing systemic challenges.

Role of Teachers

Teachers are playing an essential role in implementing NEP 2020, serving as the backbone of the education system. Their responsibilities encompass various aspects, including:

- **Curriculum design and development:** Teachers create and refine curricula to align with NEP 2020's goals.
- **Pedagogical innovation and adaptation:** Teachers adopt innovative methods to enhance student learning.
- **Assessment and evaluation reforms:** Teachers develop and implement new assessment methods to measure student progress.
- **Technology integration and digital literacy:** Teachers incorporate technology to enhance teaching and learning.
- **Diverse support:** Teachers create an inclusive environment, helper to diverse student needs.

By examining the different aspects of teachers' roles, we can better understand the support and resources they need to succeed in implementing the policy effectively. Teachers require ongoing training, autonomy, and resources to accept the changing education landscape. Their dedication and expertise will shape the future of education, making them indispensable in achieving NEP 2020's vision.

Limitations of NEP 2020

The National Education Policy 2020 (NEP 2020) is a significant step towards transforming India's education system, aiming to create a more inclusive, equitable, and quality-driven framework. However, despite its commendable goals, NEP 2020 has several limitations that need to be addressed to ensure its successful implementation.

The National Education Policy (NEP) 2020's emphasis on student-centred learning and empowerment has led to a shift in the teacher-student dynamic. With the policy's focus on student autonomy and agency.

Moreover, several limitations have been identified in NEP 2020, including an overemphasis on technology without adequate support, a lack of comprehensive teacher training and insufficient funding to effectively implement the policy. Additionally, language barriers, curriculum overload and assessment challenges pose significant hurdles. Implementation hurdles, Equity concerns and unclear implications of higher education reforms further complicate the situation. Furthermore, school timing issues and the ignored values of teachers, such as their autonomy and agency also need to be addressed. These limitations highlight the need for a more complex and multidimensional approach to education reform in India.

To overcome these limitations of NEP 2020, the following suggestions can be implemented:

1. Provide relevant training and support to teachers:

Offer regular workshops, training programs, and capacity-building initiatives for teachers. Encourage teachers to pursue higher education and professional development. Provide resources and support for teachers to develop innovative pedagogies.

2. Allocate sufficient funds for infrastructure development:

By increasing budget allocation for education infrastructure can be developed. Prioritize funding for schools in rural and underserved areas. Promote public-private collaborations for the development of infrastructure

3. Address language barriers through multilingual support:

Introduce multilingual education programs that include local languages. Provide language support services, such as interpreters and translators. Develop teaching materials and resources in local languages.

4. Review and refine the curriculum to avoid overload:

Conduct regular curriculum reviews to ensure relevance and manageability. Involve teachers, students, and community members in curriculum development. Include local culture, customs, and knowledge in the curriculum.

5. Develop effective assessment methods:

Move beyond traditional assessment methods like written exams. Incorporate alternative assessment methods like project-based evaluations. Make assessments more inclusive and culturally sensitive.

6. Ensure equitable access to quality education:

Implement policies and programs to increase enrolment and retention rates. Provide scholarships, financial aid, and support services for disadvantaged students. Promote inclusive learning environments that value diversity.

7. Clarify the policy's impact on higher education institutions:

Conduct research to understand the impact of NEP 2020 on higher education. Create guidelines and initiatives to assist students as they go into higher education. Establish partnerships between schools and higher education institutions.

8. Align school timing with students' age-specific needs:

Adjust school timings to accommodate students' unique needs. Provide flexible scheduling options to support students' diverse needs. Encourage community involvement in school timing decisions.

9. Address ignored values of teachers:

Recognize and reward teachers' contributions and dedication. Ensure that educators have sufficient opportunities for growth and development. Foster a positive and supportive teaching environment.

By implementing these suggestions, we can refine NEP 2020 to create a more robust and effective education system that addresses the diverse needs of India's student population.

Challenges in Implementing NEP 2020

The implementation of NEP 2020 poses several challenges for various stakeholders. The following section outlines the key challenges faced by teachers, institutions, and students.

1. Challenges for Teachers:

- Adapting to new pedagogies and resisting change
- Lack of training and support for new curriculum and assessment methods
- Increased workload and stress due to curriculum redesign and assessment reforms

- Limited resources and infrastructure to effectively implement NEP 2020
- Difficulty in balancing traditional and innovative teaching methods

2. Challenges for Institutions (Especially Government Institutions):

- Inadequate infrastructure and resources to support new curriculum and pedagogies
- Limited funding and budget constraints to implement NEP 2020
- Resistance to change from administrators and staff
- Difficulty in engaging with stakeholders and ensuring community involvement
- Managing the transition from traditional to modern teaching methods

3. Challenges for Students:

- Adapting to new curriculum and assessment methods
- Language barriers and diversity in linguistic needs
- Limited access to technology and digital resources (digital divide)
- Potential increase in workload and stress due to curriculum changes
- Adjusting to new expectations and learning outcomes

So far as these Challenges are concerned, all the institutions involved must work together to overcome these obstacles. Teachers need training and support, institutions require adequate resources and funding, and students need guidance and flexibility. By understanding and mitigating these challenges, we can ensure a successful implementation of NEP 2020 and create a transformative education system.

Empowering Teachers

Empowering teachers requires a complex approach that addresses their diverse needs. Following are some Key components:

Professional Development: Ongoing training, workshops, and conferences to enhance teaching skills and knowledge.

Autonomy: Freedom to design engaging lessons, assessments, and curriculum, allowing for creativity and innovation.

Resources: Availability of high-quality supplies, infrastructure, and technology to guarantee a favourable learning environment

Collaborative Environment: Supportive colleagues, open communication, and teamwork, fostering a sense of community.

Recognition: Praising educators for their achievements, efforts and contributions, to boost morale and motivation.

Teacher Leadership: Encouraging leadership roles, mentoring, and coaching, developing teachers' skills and expertise.

Continuous Feedback: Regular, constructive feedback for growth, improvement, and self-reflection.

Flexibility: Adaptable curricula, teaching methods, and assessments, accommodating diverse learning needs.

Student-Teacher Ratio: Manageable class sizes, ensuring personalized attention and tailored support.

Teacher Well-being: Prioritizing physical, emotional, and mental health, recognizing the importance of self-care.

By adopting a comprehensive approach, we can empower teachers to excel in their roles, ultimately enhancing student learning outcomes and overall educational experiences.

Recommendations

To further enhance the effectiveness of NEP 2020, it is recommended that:

Regular training and capacity-building programs be provided for teachers to enhance their skills and knowledge. This will enable them to effectively implement the policy's provisions and adapt to changing educational needs.

Teacher autonomy and agency should be encouraged, allowing them to take ownership of their teaching practices and make informed decisions about their students' learning.

Provision of adequate resources and infrastructure should be ensured, providing teachers with the necessary tools and support to deliver high-quality education.

Collaborative environments should be fostered, promoting teamwork and knowledge-sharing among teachers, students, and the wider community.

In order to improve their morale and motivation, teachers should be honoured for their commitment and hard work.

Looking ahead, future directions for NEP 2020 include:

Constantly observing and assessing how the policy is being implemented, pinpointing areas that need improvement, and making decisions based on data.

Addressing emerging challenges and limitations, ensuring the policy remains responsive to the evolving needs of India's education system.

Scaling up successful teacher empowerment initiatives, replicating best practices and amplifying their impact.

By following these recommendations and future directions, NEP 2020 can be refined and strengthened, ultimately leading to a more effective and equitable education system for all.

Conclusion

The successful implementation of India's National Education Policy (NEP) 2020 depends on empowering teachers, who are crucial in shaping the future of education. This paper highlights the challenges teachers face, including inadequate training, insufficient resources, and limited autonomy. To address these challenges, a multifaceted approach is necessary, focusing on professional development, autonomy, resources, collaborative environments, recognition, teacher leadership, continuous feedback, flexibility, student-teacher ratio, and teacher well-being.

Empowering teachers is crucial for effective implementation of NEP 2020, leading to a transformative education system that benefits all students. The paper emphasizes the need for a supportive ecosystem to enable teachers to drive reform and improve learning outcomes. Recommendations include providing regular training, encouraging teacher autonomy, ensuring adequate resources and encouraging collaborative environments.

Continuous monitoring and evaluation of NEP 2020's implementation are essential, along with addressing emerging challenges and limitations. By empowering teachers, we can ensure the successful implementation of NEP 2020 and create a world-class education system in India. This requires a concerted effort from policymakers, educators, and other associated institution to create a supportive ecosystem that enables teachers to drive reform and improve student outcomes. Ultimately, empowering teachers is essential for the future of education in India, and investing in teachers will build a more inclusive, equitable, and quality-driven education system that prepares students for success in the 21st century.

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Ethical Issues in Elementary Schools of India for Adopting Coding as a Subject

Noureen¹

Abstract

The New Education Policy 2020 has added coding as a new subject at elementary level, which is a crucial step towards making India Digitally active. It is an essential skill for making students digitally active. It is a transforming step in positioning India as a leading nation in the global knowledge economy. But its introduction as a subject raises some ethical issues that must be carefully considered. These issues include equity of access, cultural relevance, curriculum, teacher preparedness, and the cognitive and emotional impacts on young learners. This paper explores these ethical concerns.

Key Words: Indian Education System, Elementary Schools of India, Coding Education, and Ethical issues

1. Introduction

1.1 Background:

The rapid advancement of technology has revolutionized many aspects of life including education. Coding as a subject is often regarded as the new literacy of 21st century. Block Coding has been introduced into school curricula worldwide as a key skill that students must acquire to thrive in the digital age.

Introduction of coding in elementary schools through National Education Policy (NEP) 2020 recognizes its importance in fostering creativity, problem-solving skills, and digital literacy (Ministry of Human Resource Development, 2020). This policy aligns with broader national objectives of transforming India into a global knowledge hub and equipping its youth with the competencies required to participate effectively in a globalized world.

However, adoption of coding as a subject in Indian elementary schools also raises numerous ethical concerns, particularly in a country with socio-economic disparities, diverse cultural background, and varying levels of access to technology.

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1.2 Research Objectives

This research paper explores the ethical issues related to introduction of coding as a subject in Indian elementary schools. The main objectives of this paper are:

- To identify the ethical issues related with the introduction of coding as a subject in Indian elementary schools.
- To understand how these ethical issues can affect teachers, students, and education system of India.
- To propose some guidelines and strategies for the implementation of coding education in Indian elementary schools.

1.3 Research Methodology

This research paper adopts a qualitative approach by analysing secondary data from academic journals, policies, government reports. This study examines ethical issues related to equity in education, curriculum relevance, school teachers' preparedness, and other issues in coding education. This paper also considers the potential implications of coding education for global citizenship, and examining how it can either contribute to or detract from the goal of fostering a globally aware and responsible citizenry.

2. Ethical issues based on introduction of coding subject in Indian elementary schools

Introduction of coding as a subject in Indian schools have many ethical issues that must be carefully considered to ensure that the benefits of this educational reform are equitably distributed. Some ethical issues which are considered in this research paper include the following:

2.1 Equity and Equal Access of Education

In an education system, equity is a fundamental and ethical concern, particularly in a diverse country like India. Starting of coding as a subject has the potential to either bridge or widen the gap between different social groups.

2.1.1 The Digital Divide

The term digital divide refers to the gap between individuals who have access to modern information and communication technologies (ICTs) and those who do not have access. In India, this gap is very big with significant disparities in access to digital resources between urban and rural areas, and between different socio-economical groups (NSSO, 2019). For coding subject inherently relies on access to computers and the internet. Students from underprivileged backgrounds may be at a significant disadvantage.

This access of tools for coding raises serious ethical concerns of inequity. If coding education is introduced without addressing this issue, it could increase existing inequalities, and creating a scenario where only those students with access to digital

resources can benefit from this new subject. This would not only undermine the goal of creating a more inclusive education system but also increases socio-economic disparities (SawankumarSomwanshi&Bansod, 2023).

To solve this issue, there is a need for some interventions that ensure the equitable access to digital resources for all students. This could include all government initiatives in this area, which provide affordable subsidized devices and internet access to all needful students from disadvantaged groups, as well as government's investment in improving digital infrastructure in rural areas. Such measures are essential to ensure that all students have the opportunity to engage with coding education, regardless of their socio-economic status (DakshaParmar et al., 2022).

2.1.2 Gender Disparity

Gender disparity is very common aspect of digital divide in country like India. It is another critical issue that must be considered in context of coding education. In India, traditional gender roles and societal expectations often discourage girls from pursuing education in technology related fields, which leads to underrepresentation of women in these areas (MHRD, 2021).

If coding is introduced as a subject in elementary schools without addressing gender biases, it could reinforce the existing gender gap in the field of technology. This would not only deprive girls the opportunity to acquire essential skills but also limit their future career opportunities in a rapidly digitizing world. Moreover, it would hinder the development of a diverse and inclusive workforce, which is essential for fostering innovation and ensuring that benefits of technological advancement are shared equitably (Botella et al., 2019).

To promote gender inclusivity in coding education, it is essential to implement policies and practices that actively encourage girls' participation. This could include the incorporation of female role models and success stories into the curriculum, the provision of mentorship and support programs for girls and the creation of a classroom environment that challenges stereotype and encourage all students regardless of gender, to engage with coding (Christina Sanchita Shah & Krishnan, 2023).

2.2 Teacher Preparedness and Professional Development

The successful implementation of coding education depends on the preparedness and support to teachers. However, many elementary school teachers in India may not have the necessary background.

2.2.1 Adequacy of Training

The introduction of coding as a subject in elementary schools requires teachers to develop a strong understanding of coding concepts and the pedagogical skills to teach them. Without adequate training and professional development, teachers may struggle to teach coding effectively, leading to poor educational outcomes for students. This situation poses an ethical issue for teachers who may feel pressured to teach a subject

they are not fully prepared for potentially leading to stress, burnout and a negative impact on their overall well-being (Jacob & KiranBabu, 2021).

To address this issue, it is essential to provide comprehensive and on-going professional development programs for teachers. These programs should be focussed on both coding skills and pedagogical strategies, ensuring that teachers are equipped with the knowledge and confidence they need to teach coding effectively. Additionally, use of collaborative learning communities, where teachers can share resources and experiences, will support teachers in teaching (Ilie, 2023).

2.2.2 Workload on Coding Teachers

The introduction of coding as a subject in elementary schools increases the work load on computer teachers of these schools. Managing a new subject requires additional preparation time, lesson planning, and many other things, which can increase the teacher's workload and affect their work-life balance. This is an issue of concern because this extra pressure reduces quality teaching and may impact teachers' well-being. There is a need for trained teachers for coding and also proper training for old teachers (Jacob & KiranBabu, 2021).

3. Ensuring Equity in Coding Education

Equity in access to coding education is critical to ensure that all students have the opportunity to benefit from this new learning, regardless of their gender or socio-economic issue.

3.1 Bridging the Digital Divide in India

In order to serve the price-sensitive, large Indian market, particularly the underdeveloped regions, service providers will need to plan ahead and develop cutting-edge tariff plans and technology solutions. To this end, modern virtual network operators and the Massive-input-massive-output technology could help close India's digital gap (Asrani, 2020).

Public-private partnership, NGOs involvement can play a significant role in bridging the digital divide by investing in infrastructure development, such as expanding internet connectivity in rural areas and providing digital literacy programs for students and their families. Additionally, schools should be equipped with the necessary digital resources to support coding education, that students have access to these tools.

3.2 Promoting Gender Equality

There is a variation in the proportion of individuals in each gender who are proficient internet users throughout the nation of India. There is a notable gender gap between men and women, which is even more pronounced between rural and urban areas. Furthermore, this data shows that just 40.65% of women and 63.06% of men have ever used the internet (Gupta et al., 2023).

NGOs, teachers and schools also play a crucial role in fostering inclusivity by challenging stereotypes. The programs should include training on gender sensitive teaching practices to help teachers create a supportive and inclusive classroom environment.

3.3 Age-Appropriate curriculum

The coding curriculum should be designed to align with the cognitive development of elementary school students. This involves using age-appropriate tools and resources, such as visual programming language like scratch, which allow students to learn coding concepts through interactive hands-on experience. According to Papert (1980), "This raises, recursively, the question of how he learned these models. Thus the 'laws of learning' must be about how intellectual structures grow out of one another and about how, in the process, they acquire both logical and emotional form".

Curriculum designers should also consider the pacing of the curriculum, ensuring that it gradually builds students' skills and understanding without overwhelming them. The inclusion of activities that integrate coding with other subjects, such as maths, science and arts, to be used in classroom teaching that can help make coding more accessible and relevant to students in broader learning experiences.

3.4 Teacher Preparedness

When new technology is introduced, programming and programming education more than many other fields require ongoing upskilling. A number of modifications have occurred over the first five years of teacher preparation that teachers must re-learn. One instance of novel technology is the rather unexpected emergence of chatbots, which are capable of handling numerous routine jobs in a programming course. Teacher professional development for programming education should be viewed as a lifelong learning endeavour, just like it is for many other professions in a knowledge-based society. Offering micro-credentials, as suggested by numerous educators, would likely be the best course of action. This would allow full-time working teachers to engage in continual lifelong learning by concentrating on a few programming topics in each mini course (Mozelius, 2023).

Supporting teachers is crucial to the successful implementation of coding education. This includes providing comprehensive professional development teacher training and creating a supportive environment. Collaborative teaching also plays an important role in introduction of new subjects. Where teachers can share resources, experiences, and best practices, which can be helpful in an effective way to support continuous professional development. Additionally, providing teachers with access to online resources such as coding tutorials and other teaching guides that can be helpful for teachers to stay updated with the latest trends and tools in coding.

4. Conclusion

Introducing coding as a subject in Indian primary schools presents both challenges and opportunities for both Indian schools and students. While coding education has the potential to provide students with the skills they need for the future, it also raises

important ethical concerns related to the digital divide, curriculum relevance, and equity in teacher preparation. Since India is a country where the digital divide affects us greatly, as there is a huge difference between rural and urban schools here, educationists must see to it that coding education is introduced equally in all schools, both in villages and cities so that all children can get equal education. To ensure that the introduction of coding in Indian primary schools is ethical and beneficial for all students, it is necessary to develop guidelines for implementation that address these concerns. We have to ensure that coding education is started in all the schools of India, but we have to take care that there should be proper infrastructure inside the school and there should be a similar environment in villages and cities to teach the students.

Other important ethical issue is that people are biased towards boys when it comes to education. They want boys to take technical education and girls only ordinary education as they see girls as home makers and boys as bread earners. Schools should counsel the parents so that they change their mind set and provide such education to girls along with boys, so that in future girls can also stand on their own feet. Curriculum designers should make age-appropriate curriculum. Schools should hire new professional teachers for coding or train old teachers well, as the role of teachers is very important for introducing a new subject in schools.

Policy maker and curriculum designers can address these ethical issues by carefully crafting policies and curriculum in the field of coding. The next generation of Indian students can harness the potential of coding education as a potent tool, enabling them to navigate and thrive in an increasingly digital world. Therefore, there is a need to develop better policies and curriculum that may be plausible for this subject.

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The Evolving Role of the Educator in the Digital Age: Embracing Technology as a Catalyst for Innovation

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Abstract

The 21st-century educational landscape, saturated with technology and evolving pedagogical approaches, demands a fundamental reimagining of the educator's role. This paper explores the transition of educators from traditional knowledge dispensers to multifaceted facilitators, guides, co-learners, and advocates for equitable access and personalized learning. It delves into the challenges and opportunities presented by this transformation, emphasizing the need for educators to embrace technology as a catalyst for innovation and empowerment. The paper argues that by fostering critical thinking, guiding personalized learning journeys, modelling lifelong learning, and championing equity and access, educators can empower students to thrive in the dynamic landscape of the 21st century. Ultimately, it calls for a collective embrace of this evolution, recognizing that the future of education hinges on empowering educators to lead the way.

Keywords: Digital Age, Educational Technology, Role of the Educator, Personalized Learning, Critical Thinking, Digital Literacy, Equity and Access, 21st Century Skills, Lifelong Learning

Introduction

The traditional role of the educator, often likened to a "sage on the stage," positions the teacher as the primary source of knowledge and the student as the passive recipient. This model emphasizes the transmission of information from teacher to student through didactic lectures, rote memorization, and standardized assessments. Teachers were traditionally viewed as knowledge authorities, dictating the pace and direction of learning in an instructor-centric classroom environment. Standardized curricula and assessments, often focused on recall and comprehension, further reinforced this teacher-centric approach. However, the rapid evolution of technology, particularly within the last few decades, has ushered in a new era in education, one that

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necessitates a fundamental reimagining of the educator's role (Davis, 2023; Schrum & Levin, 2015).

The emergence of the internet, coupled with the proliferation of digital devices, has democratized access to information in an unprecedented way. No longer are students confined to the limited resources of a library or the knowledge base of a single teacher. Instead, they have a universe of information at their fingertips, accessible with a few keystrokes or taps on a screen. This paradigm shift, while empowering for students, presents both a challenge and an opportunity for educators (Shaffer et al., 2015).

The challenge lies in adapting to a landscape where the traditional role of the educator as the primary disseminator of information is becoming increasingly obsolete. The opportunity, however, is far more profound. By embracing technology not as a threat, but as a powerful tool for innovation, educators can evolve from being dispensers of information to becoming facilitators, mentors, and guides in a dynamic and ever-evolving learning environment.

This paper argues that the rise of technology in the 21st century requires a reimagining of the educator's role. The focus should shift from knowledge transmission to a more dynamic approach emphasizing personalized learning, critical thinking, and developing the essential skills needed to navigate a technology-driven world.

The Changing Landscape of Education

The hallowed halls of education, once synonymous with chalkboards, textbooks, and rote learning, are undergoing a profound metamorphosis. The catalyst for this transformation is technology, which is reshaping not only how we access and process information but also how we teach and learn (Grady & Codone, 2005). This evolution, particularly pronounced in the 21st century, is ushering in a new era of education, one characterized by personalized learning experiences, student agency, and a focus on developing the skills essential for navigating a rapidly changing world.

Technology Integration in Education

The integration of technology into education is not a recent phenomenon, but its role has evolved dramatically over the past few decades. We've transitioned from viewing technology as a supplementary tool to recognizing its potential as an integral partner in the learning process. This journey can be broadly categorized into distinct phases.

- **The Dawn of Digital Integration (1980s–early 2000s):** This era marked the introduction of computers in classrooms, primarily as tools for drill-and-practice exercises or digitized versions of textbooks. While a significant step, the focus remained on supplementing traditional teaching methods rather than fundamentally altering them. Computers, often relegated to dedicated computer labs, were seen as separate from the core curriculum (Collins, 2008).
- **The Rise of Connectivity and Emerging Possibilities (Late 1990s–2010s):** The advent of the internet revolutionized access to information, connecting students and

educators to a global wealth of resources beyond the confines of textbooks and classrooms. Online learning platforms emerged, offering flexibility and expanding learning opportunities beyond geographical constraints. This era witnessed the burgeoning potential of technology to personalize learning experiences, with platforms like Khan Academy providing individualized instruction and practice exercises (Dankbaar & Jong, 2014).

- **The Age of Ubiquitous Technology and Personalized Learning (2010–Present):** The proliferation of mobile devices, high-speed internet, and sophisticated learning platforms has ushered in an era of ubiquitous technology in education. Ahmad et al. (2023) highlights how technology is reshaping the educational landscape. Rather than being restricted to classrooms, learning is becoming increasingly personalized and accessible. Adaptive platforms, educational apps, and immersive technologies like virtual and augmented reality are key drivers of this transformation.

Impact of Technology on Student Learning

The integration of technology has had a profound impact on student learning, fostering engagement, deeper understanding, and the development of essential 21st-century skills. Interactive simulations, game-based learning platforms, and multimedia-rich content captivate students' attention, making learning more enjoyable and increasing knowledge retention (Schindler et al., 2017). For instance, a student struggling to grasp abstract concepts in physics might find them far more accessible and engaging when presented through interactive simulations that allow them to manipulate variables and observe the results in real-time. Furthermore, technology enables experiential learning opportunities that transcend the limitations of traditional teaching methods. Virtual laboratories, for instance, provide students with safe and controlled environments to conduct experiments, manipulate variables, and observe outcomes without the limitations of physical resources or safety concerns (Kramarenko & Kochina, 2023). For example, medical students can now utilize virtual reality to practice complex surgical procedures in realistic, risk-free environments. This immersive technology allows them to refine their skills and deepen their understanding of human anatomy without the risks associated with real-world training. Additionally, the integration of technology in education is instrumental in nurturing the development of crucial 21st-century skills. When students collaborate on online projects, such as designing a sustainable city, they engage in critical thinking, problem-solving, communication, and creativity, all while enhancing their digital literacy (Bhat, 2023).

The Shift towards Personalized and Student-Centered Learning Approaches

Modern technology has sparked a significant shift in education, moving away from a traditional, standardized approach to one that prioritizes personalized, student-centered learning. This learner-centric model acknowledges that each student has unique needs, interests, and learning styles.

Adaptive learning platforms, powered by sophisticated algorithms, exemplify this personalized approach. These platforms act as personalized guides, tracking student

progress, identifying areas of strength and weakness, and adjusting the pace and content accordingly. This ensures that students are consistently challenged while receiving the appropriate level of support throughout their learning journey(Xie et al., 2019). Similarly, technology also empowers students to become active agents in their own education. With access to a vast and diverse collection of online courses and resources, students can explore their passions and pursue their interests at their own pace (Lin, 2016).Moreover, technology fosters essential 21st-century skills by creating dynamic and interactive learning environments. Collaborative projects, student-led discussions, and online research opportunities encourage critical thinking, communication, and collaboration (Sewagegn & Diale, 2019). This shift towards student-centered approaches, driven by technological advancements, creates unprecedented opportunities for personalized, engaging, and effective learning experiences. However, the effectiveness of technology in education hinges on thoughtful integration, ongoing professional development for educators, and a commitment to bridging the digital divide to ensure equitable access for all learners.

Technology as a Catalyst for Innovation

Technology's role as a catalyst for innovation is multifaceted, operating on several levels to create an environment ripe for groundbreaking discoveries and advancements:

- **Democratizing Access to Information and Resources:** Technology has shattered the barriers of time and geography, democratizing access to information and resources like never before. The internet, a testament to this transformative power, has created a global common of knowledge, connecting individuals, communities, and institutions across borders. This unprecedented access to information empowers individuals with the tools and knowledge to identify problems, explore solutions, and contribute to innovation, regardless of their location or background(Raymond, 2016).
- **Accelerating the Pace of Discovery and Development:** Technology empowers us to process information, analyze data, and conduct research at speeds unimaginable just a few decades ago. Sophisticated software, high-performance computing, and advanced algorithms enable scientists, engineers, and researchers to tackle complex problems, simulate scenarios, and accelerate the pace of discovery and development across fields ranging from medicine and materials science to renewable energy and space exploration(Shi et al., 2022).
- **Fostering Collaboration and Cross-Pollination of Ideas:** Innovation thrives in environments where diverse perspectives converge, and technology facilitates this cross-pollination of ideas like no other tool. Online collaboration platforms, virtual research networks, and open-source software development communities connect individuals with complementary skills and expertise, fostering collaboration that transcends geographical boundaries and disciplinary silos. This interconnectedness allows for the rapid sharing of knowledge, best practices, and emerging ideas, accelerating the pace of innovation(Statti& Torres, 2020).

- **Empowering New Forms of Creativity and Expression:** Technology provides us with novel tools and mediums for creative expression, pushing the boundaries of art, design, and communication. From digital art and 3D printing to virtual reality and interactive storytelling, technology empowers artists, designers, and creators to transcend traditional limitations and bring their imaginations to life in unprecedented ways. This fusion of technology and creativity often leads to unexpected innovations that reshape industries and captivate audiences (Vrabie, 2024).

Reimagining the Role of the Educator

The ubiquitous presence of technology in the 21st century has profoundly impacted nearly every facet of society, and education is no exception. This technological integration, coupled with evolving pedagogical understandings and a growing emphasis on personalized learning, necessitates a fundamental reimagining of the educator's role (Shaffer et al., 2015). No longer solely a dispenser of knowledge, the modern educator must transition from the traditional "sage on the stage" to a multifaceted facilitator, guide, co-learner, and advocate for equitable access and individualized learning experiences (Sharma et al., 2014).

From Passive Transmission to Active Construction: Facilitating Deeper Engagement

The traditional model of education, often characterized by didactic lectures and passive absorption of information, stands in stark contrast to the demands of the digital age. Students now have access to a virtually limitless ocean of information at their fingertips. The educator's role, therefore, shifts from being the primary source of information to becoming a skilled facilitator, guiding students as they navigate this complex information landscape.

- **Designing Engaging Learning Experiences:** Effective educators leverage technology not merely as a substitute for traditional tools but as a catalyst for deeper engagement. For instance, instead of simply lecturing on the American Revolution, a history teacher might utilize interactive maps, primary source documents, and virtual reality experiences to immerse students in the historical context, fostering a more profound understanding of the events and their significance (Geng, 2021).
- **Cultivating Critical Thinking and Digital Literacy:** The abundance of information online presents a double-edged sword. While providing unprecedented access to knowledge, it also exposes students to misinformation and biased content. Educators play a crucial role in equipping students with the critical thinking skills necessary to evaluate sources, identify biases, and discern credible information from unreliable sources. This includes teaching students how to effectively use search engines, evaluate online sources using criteria like the CRAAP test, and engage in respectful online discourse (Geng, 2021).

Nurturing Curiosity and Empowering Exploration: Guiding Personalized Learning Journeys

In today's technology-driven world, it's more crucial than ever to acknowledge and cater to the distinct learning styles, interests, and goals of each student. The modern educator acts as a guide, fostering students' innate curiosity and empowering them to become self-directed learners.

- **Personalized Learning Paths:** The emergence of educational technology, particularly adaptive learning platforms, has revolutionized personalized learning. These platforms enable educators to tailor lessons and activities to individual student needs, provide customized feedback, and adjust the pace of instruction based on student progress. A student struggling with algebraic concepts might receive additional practice problems and targeted support, while a student who has mastered the material can move on to more advanced topics at their own pace(Grigoropoulos & Gialamas, 2018).
- **Cultivating a Growth Mindset:** Educators play a vital role in fostering a growth mindset, encouraging students to embrace challenges as opportunities for growth and view mistakes as stepping stones to learning. This can be achieved through open discussions about the learning process, providing constructive feedback that focuses on effort and strategies rather than solely on outcomes, and celebrating both successes and failures as opportunities for learning and growth(Sumarna & Gunawan, 2022).

Embracing Lifelong Learning: Modelling a Growth Mindset as Co-Learners

In a world characterized by rapid technological advancements and evolving industries, educators cannot remain static. Embracing lifelong learning and modeling a growth mindset are essential for remaining relevant and effectively preparing students for the future.

- **Staying Abreast of Emerging Technologies and Pedagogies:** To thrive in the ever-evolving landscape of education, educators must prioritize continuous professional development. This includes staying abreast of emerging technologies, exploring innovative teaching methods, and engaging with evolving best practices through avenues such as conferences, webinars, professional learning communities, and advanced degrees or certifications(Geng, 2021; Lei et al., 2023).
- **Co-Creating Knowledge with Students:** The educator recognizes that learning is not a one-way street. Students bring valuable perspectives, experiences, and insights to the classroom. Creating opportunities for students to share their knowledge, engage in meaningful dialogue, and co-create knowledge through collaborative projects and inquiry-based learning experiences enriches the learning environment for both students and educators(Jones & Dexter, 2014).

Championing Equity and Access: Advocating for All Learners

A core responsibility for educators today is dismantling barriers to education by advocating for and ensuring equitable access to technology, resources, and learning opportunities for all students, regardless of background or socioeconomic status.

- **Bridging the Digital Divide:** The digital divide, which creates unequal access to technology and digital resources, presents a formidable obstacle to achieving educational equity. Educators can advocate for policies and programs that provide all students with access to computers, internet connectivity, and digital literacy training. This might involve partnering with community organizations, seeking funding opportunities, or raising awareness about the importance of digital equity (Judge et al., 2004; Afzal et al., 2023).
- **Creating Inclusive Learning Environments:** Educators are responsible for creating inclusive learning environments that celebrate diversity, value multiple perspectives, and provide all students with the support they need to thrive. This requires proactive steps to understand and address the needs of all learners, including those with disabilities, language learners, students from diverse cultural backgrounds, and those facing socioeconomic challenges. This might involve differentiating instruction to meet diverse learning needs, incorporating culturally responsive teaching practices, and creating a classroom culture of respect and inclusivity where all students feel safe, valued, and empowered to learn (Afzal et al., 2023).

The role of the educator in the digital age is undergoing a profound and ongoing transformation. No longer confined to the traditional role of a dispenser of knowledge, the modern educator must embrace a multifaceted approach, serving as a facilitator, guide, co-learner, and advocate for equitable access and personalized learning experiences. By embracing these evolving roles and leveraging the power of technology to enhance, rather than replace, their pedagogical practices, educators can equip students with the essential skills such as critical thinking, creative problem-solving, effective communication, and a passion for lifelong learning, that are needed to succeed in today's dynamic world.

Challenges and Opportunities

The digital transformation of education has ushered in a new era that presents both significant challenges and unprecedented opportunities for educators.

Challenges

- **Privacy and Data Security Concerns:** As education becomes increasingly digitalized, the collection and use of student data raises critical concerns about privacy and data security. Educators and educational institutions must establish robust frameworks to protect student information and ensure its ethical use, balancing the benefits of data-driven decision-making with the imperative to safeguard student privacy (Srivastava, 2023).

- **Bridging the Digital Divide:** The digital divide, representing unequal access to technology and digital literacy, presents a pressing challenge to educational equity. Bridging this gap by ensuring all students have the resources and skills to thrive in a digital world is a significant challenge for educators (Srivastava, 2023).
- **Adapting to Evolving Technologies:** The rapid pace of technological change requires educators to continuously adapt their pedagogical approaches, update their digital skills, and incorporate new tools and platforms into their teaching practices (Kgosi et al., 2023).
- **Fostering Digital Citizenship:** As students become more immersed in the digital world, educators must guide them in developing the necessary skills and mindsets to navigate the online landscape safely, ethically, and responsibly (Nugumanova et al., 2020).

Opportunities

- **Personalized Learning:** Emerging technologies offer unprecedented opportunities for personalized learning, allowing educators to tailor instruction, content, and assessment to the unique needs, interests, and learning styles of each student (Nugumanova et al., 2020).
- **Collaborative Learning:** Digital tools and platforms enable new models of collaboration, empowering students to work together, share ideas, and co-create knowledge in innovative ways (Ahmad et al., 2023).
- **Accessibility and Inclusivity:** The digital classroom has the potential to enhance accessibility and inclusivity by providing assistive technologies, multilingual resources, and flexible learning pathways to support the diverse needs of all learners (Srivastava, 2023).
- **Enhanced Engagement and Motivation:** Integrating engaging digital content, interactive learning experiences, and gamification elements can foster greater student engagement, motivation, and active participation in the learning process (Bhat, 2023).
- **Data-Driven Decision-Making:** The wealth of student data generated through digital learning platforms can inform data-driven decision-making, enabling educators to identify learning gaps, personalize instruction, and continuously improve teaching and learning practices (Schildkamp, 2019).

The digital transformation of education brings both challenges and opportunities for educators. While navigating data privacy, bridging the digital divide, and adapting to new technologies pose difficulties, the digital classroom also enables personalized learning, collaborative engagement, improved accessibility, and data-driven decision-making. By embracing these evolving roles and opportunities, educators can empower students to become critical thinkers, creative problem-solvers, effective communicators, and lifelong learners, preparing them to thrive in the dynamic 21st-century landscape.

Recommendations for Empowering Educators:

- Educators must be empowered and supported to continuously develop their digital skills and pedagogical approaches, ensuring they can effectively harness technology to create personalized, engaging, and collaborative learning experiences.
- Educational institutions and policymakers must invest in robust digital infrastructure, high-quality digital resources, and comprehensive professional development programs to enable educators to fully leverage the transformative potential of technology.
- Simultaneously, initiatives to bridge the digital divide and ensure equitable access to digital tools and literacy must be prioritized to create a more inclusive and accessible educational landscape.

Finally, educators must be encouraged to adopt a growth mindset, embracing technology as an opportunity for innovation and continuous improvement, rather than viewing it as a threat to their traditional roles.

Conclusion

The digital age necessitates a fundamental shift in our understanding of the educator's role. No longer merely a dispenser of information, the modern educator must evolve into a multifaceted facilitator, guide, co-learner, and advocate for equitable access and personalized learning. This re-imagined role emphasizes fostering critical thinking and digital literacy, guiding personalized learning journeys, modelling lifelong learning, and championing equity and access for all learners.

This is not merely a pedagogical shift but a call to action for educators to embrace technology not as a threat, but as a powerful catalyst for innovation and empowerment in education. By harnessing its potential to create engaging learning experiences, personalize instruction, and foster collaboration, educators can empower students to become active, engaged, and self-directed learners.

Reimagining the role of the educator holds the potential to profoundly impact student success and outcomes. By fostering critical thinking, creativity, collaboration, and a love of lifelong learning, educators can equip students with the skills and dispositions necessary not only to thrive in the 21st century but to shape it. The future of education hinges on our collective willingness to embrace this evolution and empower educators to lead the way.

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Critical analysis of NCERT English textbook “Beehive” class 9th on Integration of Constitutional Values as Reflected in NEP 2020

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Abstract

This research examines the extent to which constitutional values are reflected in educational curriculum, focusing on the National Education Policy (NEP) 2020 and the NCERT Class 9th English course book "Beehive." Constitutional values such as justice, equality, liberty, fraternity, and secularism are foundational to India's democratic framework, and their inculcation in education is vital for nurturing responsible citizens. The study conducts a content analysis of the first five chapters of "Beehive," identifying how these values are represented through literary narratives. Additionally, the research evaluates the NEP 2020's emphasis on these values. Findings reveal that both the policy and textbook embed constitutional values, the extent of their impact depends on effective implementation, educator engagement, and student reflection. The research highlights the importance of making these values more explicit in educational content to ensure they are fully internalized by students, strengthening the role of education in supporting India's constitutional ideals.

Keywords: Constitutional Values, NEP 2020, national Curriculum Framework, Content Analysis

Introduction

Constitutional values such as justice, equality, fraternity, and secularism are the bedrock of India's democratic society. These values enshrined in the Indian Constitution, are not only legal principles but also ethical standards that guide the nation's social, political, and educational framework. The integration of constitutional values into the educational curriculum is essential for fostering a society that is equitable, inclusive, and democratic. The National Education Policy (NEP) 2020 represents a significant reform in India's education system, emphasizing embedding these values into the curriculum. The textbooks and pedagogical practices are integral parts of the curriculum. Textbooks are the key means to instill constitutional values in young minds.

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The NCERT Class 9 English textbook, *Beehive*, is a key resource for introducing constitutional values through literature. Its diverse stories and poems encourage students to reflect on themes like justice, equality, freedom, and fraternity. Through rich narratives, *Beehive* subtly instills these values, making it an effective tool for promoting ethical reflection in young learners.

This research examines how constitutional values are integrated into the curriculum by analyzing the NEP 2020 and the *Beehive* textbook. A content analysis of the first five chapters of *Beehive* explores the representation of these values. The study contributes to the discourse on education's role in strengthening democracy and preparing future generations as responsible citizens.

Review of literature

A review of literature revealed that Nussbaum (2006), in her article on "*Education and Democratic Citizenship: Capabilities and Quality of Life*," argues that education should not only transmit knowledge but also cultivate moral virtues essential for democratic citizenship, such as justice and equality.

Vinit D. Pareek (2021) in "*Values Enshrined in The Constitution Of India And Methods And Technique Of Value Education*" highlights how constitutional values can be integrated into education through methods like experiential learning, literature, and integrated curricula.

Lakshman Patra's (2022) article "Value Education: Eastern and Western Human Values and Virtues" discusses the impact of globalisation on value education. According to his study, globalisation presents both challenges and opportunities in value education and understanding the cultural context is important to effectively integrate human values into the education system.

Dr. Pradip Debnath (2019) in *Values Enshrined in Our Constitution: Their Educational Implications in the Emerging Indian Society* explores how constitutional values such as justice, equality, and democracy are critical for shaping educational practices in contemporary India. Debnath examines the relevance of these values in addressing societal challenges and advocates for integrating them into the educational curriculum to foster responsible citizenship.

The literature reviewed suggests a strong consensus on the importance of integrating constitutional values into the education system. These values are not only essential for individual character development but also for cohesion in a rapidly globalising world. The works reviewed suggest that curriculum must include the cultivation of values that prepare students to contribute positively to society. Although much research highlights the importance of value education, there is a significant gap when it comes to content analysis of how constitutional values are presented in school textbooks. A focused study on how the NCERT textbook "Beehive" for class 9th promotes these values, contributes to filling this gap.

Research question

What are the reflections of constitutional values in NEP 2020 and how far is it integrated into curriculum through the English textbook “Beehive” for class 9th?

Objectives of study

1. To find out the Constitutional values reflected in NEP 2020.
2. To critically analyse the English Textbook “Beehive” for Class 9 on the integration of constitutional values as reflected in NEP2020.

Research Methodology

This study adopted a qualitative research methodology.

- Document analysis of NEP 2020: The NEP 2020 document was systematically reviewed to extract relevant sections and recommendations that pertain to constitutional values. Key phrases, terms, and statements were identified and categorized based on the specific values they addressed.
- Content analysis of *Beehive*: The first five chapters of the *Beehive* textbook were carefully read and analysed. Passages, dialogues, and narratives that embody constitutional values were identified and coded.

Sources of study

Primary sources

1. National Education Policy 2020 document: The comprehensive framework introduced by Government of India to guide development of the education sector. NEP 2020 emphasizes critical thinking, creativity and value-based education aligning with global standards while reflecting India’s cultural heritage and constitutional values.
2. NCERT English Textbook *Beehive* for Class 9: The book was published in 2006 by NCERT as part of its effort to align educational content with broader goals of India’s National curriculum framework (NCF 2005). The book includes a variety of genres, including short stories, essays, poetry and biographies offering students both Indian and global literature. The book has been republished throughout the years. The textbook content has been rationalized as per NEP 2020 to reduce the content load on students. To date, it is part of the curriculum for class 9th as an English textbook. In the light of NEP 2020, “Beehive” serves as an exemplary model of how textbook can be used to impart not just academic knowledge but also values of justice, equality and fraternity that NEP 2020 advocates.

Secondary sources

Different research papers, and articles published in journals related to NEP2020.

As per the Preamble of the Constitution “We, the people of INDIA---“the following key constitutional values are identified as mentioned in Table 1.

Table 1: Coding Scheme for Constitutional Values from the Preamble

Code	Description
Justice	References to fairness, equity, the legal system, and the protection of rights.

Code Description

Equality Mentions of equal rights, non-discrimination, gender equality, and social equality.

Liberty Discussions of freedom of speech, freedom of expression, personal freedom, and autonomy.

Fraternity Emphasis on brotherhood, national unity, social solidarity, and communal harmony.

Secularism References to the separation of religion from the state, religious tolerance, and diversity.

Democracy Mentions of democratic principles, participatory governance, rule of law, and citizen rights.

Human

Dignity References to respect for human dignity, rights, and personal integrity.

Sections of the NEP 2020 were analysed and categorized based on the values in Table 1, such as coding sections on equal educational opportunities under Equality.

Similarly, *Beehive* chapters were examined, with stories, dialogues, and narratives assessed against NEP 2020 values. For example, a story promoting communal harmony was coded under Fraternity.

Results and Discussion

NEP 2020 document was analysed as per the identified constitutional values as mentioned in table 1. Different sections of the document were analysed and categorised. The results of the analysis are represented in Table 2.

Table 2: Reflections of Constitutional Values in the NEP2020 Document.

Code	Description	Values	Quoted Text	Section & Page no.
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Justice	References to fairness, equity, the legal system, and the protection of rights.	"Ensuring equitable and inclusive education"	"Education is the single greatest tool for achieving social justice and equality. Inclusive and equitable education - while indeed an essential goal in its own right - is also critical to achieving an inclusive and equitable society in which every citizen has the opportunity to dream, thrive, and contribute to the nation."	NEP 2020, Section 6.1 (p.24)
Equality	Mentions of equal rights, non discrimination, gender equality, and social equality.	"Promoting Gender Equality"	" The school curriculum will include, early on, material on human values such as respect for all persons, empathy, tolerance, human rights, gender equality, non-violence, global citizenship, inclusion, and equity.	NEP 2020, Section 6.20(p.28)
Liberty	Discussions of freedom of speech, freedom of expression, personal freedom, and autonomy.	"Encouraging Creativity and Innovation"	"Students will be given increased flexibility and choice of subjects to study, particularly in crafts, Skills secondary school - including subjects in physical education, the arts and vocational can ---so that they design their own paths of study and life plans"	NEP 2020, Section 4.9 (p.13)
Fraternity	Emphasis on brotherhood, national unity, social solidarity, and communal harmony.	"Fostering National Integration"	"Higher education plays an extremely important role in promoting human as well as societal well-- being and in developing India as envisioned in its Constitution - a democratic, just, socially conscious, cultured, and humane nation upholding liberty, equality, fraternity, and justice for all."	NEP 2020, Section 9.1(p.33)
Secularism	References to the separation of religion from the state, religious tolerance, and diversity.	"Upholding Secular Values"	"The school curriculum will include, early on, material on human values such as respect for all persons, empathy, tolerance, human rights, gender equality, non-violence, lobar citizenship, inclusion, and equity. It would also include more detailed knowledge of various cultures, religions, languages, gender identities, etc. to sensitize and develop respect for diversity"	NEP 2020, Section 6.20(p.28)

Democracy	Mention of democratic principles, participatory governance, rule of law, and citizen rights.	"Promoting Democratic Values"	"The public education system is the foundation of a vibrant democratic society, and the way it is run must be transformed and invigorated in order to achieve the highest levels of educational outcomes for the nation"	NEP 2020, Section 8.4 (p.31)
Human Dignity	References to respect for human dignity, rights, and personal integrity.	"Respect for Human Rights"	"All participants in the school Education system, including teachers, principals, administrators, counselors, and students will be sensitized to the requirements of all students, the notions of inclusion and equity, and the respect, dignity, and privacy of all persons.."	NEP 2020, Section 6.19(p.28)

The table 2 of constitutional values in NEP 2020 highlights key principles like justice, liberty, equality, and fraternity, emphasizing their integration into education. It stresses fostering respect for diversity, promoting unity, and ensuring secularism. Serving as a guide forembdiding these values, it aims to develop responsible citizens who uphold democratic principles. NEP 2020 promotes equitable access to quality education, supports inclusive learning environments, and fosters national unity. By focusing on these values, NEP 2020 seeks to create a fair, inclusive, and responsive education system for all students.

A critical analysis of the first five chapters of the book "Beehive" on the integration of constitutional values as reflected in NEP2020 was done and results are represented in Table 3.

Table 3: Critical Analysis of the First Five Chapters of "Beehive" on Integration of Constitutional Values as Reflected in NEP2020.

Chapter	Constitutional Values	Description	Quoted Text
Chapter 1: The Fun They Had	Equality	The story contrasts traditional schools with futuristic isolated education, reflecting the loss of equal educational opportunities and the	"All the kids from the whole neighborhood came, laughing and shouting in the schoolyard, sitting together in the schoolroom."

Chapter	Constitutional Values	Description	Quoted Text
		Importance of communal learning.	<p>"The mechanical teacher was on at half past eight because her mother said that little girls learned better if they learned at regular hours."</p> <p>"And all the kids from the whole neighborhood came, laughing and shouting in the schoolyard."</p>
	Liberty	<p>Margie's experience with a mechanical teacher</p> <p>highlights the lack of freedom in a rigid, automated learning environment, contrasting with the more liberal past.</p>	<p>"She had learnt to open her mind and body to sounds and vibrations. The rest was sheer determination and hard work."</p> <p>"Music poured in through every part of her body. It tingled in the skin, her cheekbones and even in her hair."</p>
	Fraternity	<p>The depiction of communal schooling in the past</p> <p>emphasizes the value of fraternity and social interaction among students.</p>	<p>"He was so big—his hands and his neck, especially his mouth when he yawned. Thinking about him alone was like thinking about a giant."</p> <p>"But suddenly one day he reached out for her, took her in his arms, laid her head on his</p>
Chapter 2: The Sound of Music	Dignity of the Individual	<p>The chapter showcases the perseverance and success of Evelyn Glennie despite her hearing impairment, promoting the dignity of individuals overcoming challenges.</p>	
	Equality	<p>It highlights the equality of opportunity in music, where talent and dedication, rather than physical ability, determines success.</p>	

<p>Chapter 3: The Little Girl</p>	<p>Humanism</p>	<p>The story focuses on the emotional bond between a father and daughter, emphasizing empathy, understanding, and the importance of family relationships.</p>	
	<p>Dignity of the Individual</p>	<p>It reflects the value of recognizing and respecting individual feelings, showcasing how</p>	
<p>Chapter 4: A Truly Beautiful Mind</p>	<p>Constitutional Values</p>	<p>Description</p>	<p>Quoted Text</p> <p>shoulder, and said, 'I've been a little girl too, you know.'</p> <p>"Einstein was deeply shaken by the extent of the destruction. This time he wrote a public missive to the United Nations."</p> <p>"But over the next decade, his fame spread across the world, and he became an intellectual icon, respected by all nations."</p> <p>"I was no mere image cut in granite. I was suddenly a man of flesh and blood. Still holding my breath, I got up from the chair."</p> <p>"In those moments of silence and cold, the doctor realizes his true self, his shortcomings, and vows to start life afresh."</p>
		<p>understanding can strengthen familial bonds.</p>	
<p>Chapter 5: The Snake and the Mirror</p>	<p>Equality</p>	<p>The life of Albert Einstein illustrates the value of equality, as he used his intellect to work for global peace and justice, irrespective of national or racial boundaries.</p>	
	<p>Secularism</p>	<p>Einstein's work transcends national and religious boundaries, promoting the idea of a unified global community that values knowledge and peace over division.</p>	
	<p>Liberty</p>	<p>The doctor's humorous experience reflects the freedom of thought, as here reflects on the vanity and simplicity of life, leading to personal growth and a deeper understanding of himself.</p>	
<p>Chapter 5: The Snake and the Mirror</p>	<p>Democracy</p>	<p>The story subtly conveys the value of personal choice and responsibility in one's actions, reflecting democratic principles of self-governance and accountability.</p>	

This table offers a detailed look at how constitutional values are embedded in the first five chapters of *Beehive*, using specific quotes to illustrate these principles. Each chapter not only engages students with compelling narratives but also subtly instills values central to India's constitutional ethos.

The *Beehive* textbook reflects constitutional values to varying degrees. The first chapter, "The Fun They Had," explores equality and liberty through contrasts in past and future education systems, highlighting communal learning and restricted freedom. Other chapters touch on justice and fraternity through characters and narratives, though explicit references to values like secularism are limited.

Findings of Study

1. NEP 2020 comprehensively incorporates constitutional values into the educational curriculum by focusing on justice, equality, liberty, fraternity, and secularism. The policy outlines specific strategies and initiatives to embed these values into various aspects of education, from curriculum development to teaching practices, ensuring that the education system aligns with the principles enshrined in the Indian Constitution.
2. The first five chapters of the *Beehive* textbook for Class 9 reflect several constitutional values through their narratives and characters. While explicit references to some values like secularism are limited, themes of justice, equality, liberty, and fraternity are present in various ways. The chapters collectively depict diverse experiences and emphasize different aspects of constitutional values, with a focus on personal growth, social interaction, and individual achievements.

Challenges in Implementation

- **Dependence on Educators:** The effective inculcation of values relies on how educators interpret and teach the content. While the policy and literature provide tools, student understanding depends on teachers' ability to guide discussions and reflections on these values.
- **Variability in Practice:** Though the policy and textbook content align with constitutional values, students' internalization of these values depends on teaching methods, classroom dynamics, and the overall educational environment.

Conclusion

This research highlights the alignment between NEP 2020 and the *Beehive* textbook in terms of integrating constitutional values into the educational curriculum. NEP 2020 effectively incorporates these values through its policies and strategies, ensuring that the educational system is equitable, inclusive, and respectful of diverse perspectives. The *Beehive* textbook makes a noteworthy effort to incorporate constitutional values such as justice, equality and fraternity through its stories, characters and narratives in first five chapters as studied.

For a more comprehensive integration of constitutional values, it is essential for educational materials to align closely with the principles outlined in NEP 2020. This could involve more explicit inclusion of values such as secularism and justice in textbooks, alongside the implicit values conveyed through literature. By bridging the gap between policy and practice, educators can better ensure that students are not only exposed to these values theoretically but also experience them practically through their learning materials like textbooks.

Future research could explore how other textbooks and educational resources align with NEP 2020 and examine the impact of such alignments on students' understanding and application of constitutional values. This would provide a broader perspective on the effectiveness of values integration in Indian education and contribute to the ongoing efforts to foster a values-based educational system.

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Empowering Teachers as Innovators: Navigating Digital Transformation in Education under NEP 2020

Anchal Aggarwal¹

Abstract

In the context of the rapidly evolving digital landscape, the role of educators has expanded beyond conventional pedagogical methods to encompass innovation and adaptability to emerging technologies. This research paper examines the function of teachers as innovators within the framework of India's National Education Policy (NEP) 2020, which emphasizes the integration of technology in education and acknowledges the crucial role of educators in facilitating change. The study investigates the adaptation of teachers in Delhi/NCR to digital tools and methodologies, identifying both the opportunities and challenges they encounter.

The research employs a mixed-methods approach, combining quantitative surveys of 200 educators and qualitative interviews with 20 teachers from government & private schools of Delhi/ NCR, to provide a comprehensive analysis of the current landscape of educational innovation. The findings indicate that while a significant proportion of educators regularly utilize digital tools, many face obstacles such as inadequate infrastructure, limited access to professional development opportunities and insufficient support systems. Notwithstanding these impediments, teachers exhibit a high degree of enthusiasm and confidence in their capacity to innovate.

The study underscores the importance of continuous professional development, adequate infrastructure and supportive policies to empower educators as innovators. The relevance of this research is particularly significant in light of the NEP 2020, which advocates for the adoption of educational technology to enhance learning outcomes and promote inclusiveness.

By addressing the identified challenges and leveraging the opportunities presented by digital tools, educators can play a transformative role in the digital age, ultimately enhancing the quality and inclusiveness of education in India. This paper contributes to the discourse on educational reform by highlighting the

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critical role of teachers as innovators and the necessity for systemic support to realize the objectives of the NEP 2020.

Keywords: Digital Age, Educational Technology, Educators, Innovation, NEP 2020, Teachers

Introduction

The advent of the digital era has precipitated unprecedented transformations across various sectors, with the field of education being no exception. The incorporation of technological advancements into educational methodologies possesses the potential to revolutionize the pedagogical experience, rendering it more interactive, engaging and accessible. As technological progress continues unabated, the role of educators is undergoing a concomitant evolution. Educators are no longer confined to the traditional parameters of classroom instruction; rather, they are now expected to assume the mantle of innovators, harnessing digital tools to enhance their instructional practices and optimize student learning outcomes.

In the Indian context, the National Education Policy (NEP) 2020 represents a significant paradigm shift in the educational landscape. This policy emphasizes the integration of technology in education and advocates for a holistic, multidisciplinary approach to learning. The NEP 2020 recognizes the pivotal role of educators as catalysts for change and innovation, advocating for their continuous professional development and the establishment of a robust infrastructure to facilitate the integration of digital tools in education.

This research paper endeavors to explore the concept of educators as innovators in the digital age, with a specific focus on the implementation of the NEP 2020 in Delhi. The primary objectives of this study are to elucidate how educators are adapting to the digital age, identify the innovative practices they are employing and delineate the challenges they encounter in this process. Furthermore, the paper aims to examine the impact of these innovations on student learning outcomes and the overall educational experience.

The significance of this study is twofold: firstly, it underscores the crucial role of educators in the successful implementation of the NEP 2020; secondly, it provides valuable insights into the current state of educational innovation in Delhi/NCR, offering substantive recommendations for policymakers and educational institutions. By examining the experiences of educators in Delhi/ NCR, this research seeks to contribute to the broader discourse on educational reform and the integration of technology in education.

Objectives

- To explore the role of teachers as innovators in the digital age.
- To identify challenges faced by teachers in implementing digital innovations.

- To evaluate the influence of National Education Policy 2020 on adoption of digital tools and innovative practices by teachers.

Literature Review

The concept of educators as innovators is firmly grounded in the broader discourse surrounding educational reform and technological integration. Fullan and Langworthy (2014) posit that innovation in education encompasses the implementation of novel practices that result in substantial enhancements to student learning outcomes. The National Education Policy 2020 (Government of India, 2020) emphasizes the significance of technology in education, advocating for the professional development of educators to adapt to digital advancements.

Mishra and Koehler's (2006) research introduced the Technological Pedagogical Content Knowledge (TPACK) framework, which delineates the essential knowledge domains educators must integrate to effectively incorporate technology into their pedagogical practices. This framework has been widely adopted to inform and enhance teacher education programs globally. Moreover, studies conducted by Ertmer and Ottenbreit-Leftwich (2010) underscore the necessity of supportive policies and infrastructure to facilitate educators in becoming effective innovators.

Methodology

This research employs a mixed-methods approach, combining quantitative surveys and qualitative interviews. The quantitative component involves a survey of 200 teachers from government and private schools of Delhi/ NCR, assessing their use of digital tools and innovative practices. The qualitative component includes in-depth interviews with 20 teachers to explore their experiences and challenges in integrating technology into their teaching.

Analysis

The analysis of the survey and interview data reveals significant insights into the use of digital tools and teachers' roles as innovators in the digital age. The results are presented in two main sections: Survey data and Interview data.

A. Survey Data

The survey was conducted with 200 teachers from various schools in Delhi/ NCR. The primary focus was on their use of digital tools, their confidence in adopting innovative practices, challenges they faced and engagement of students.

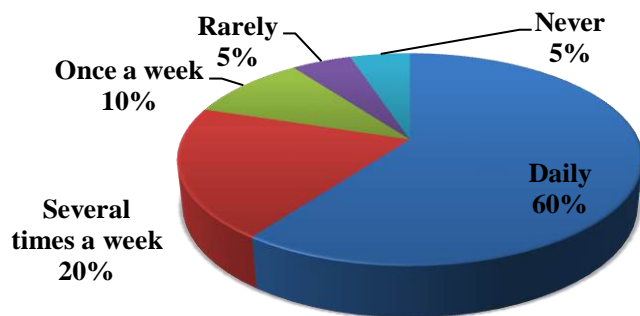


Figure 1: Frequency of Digital Tool Usage

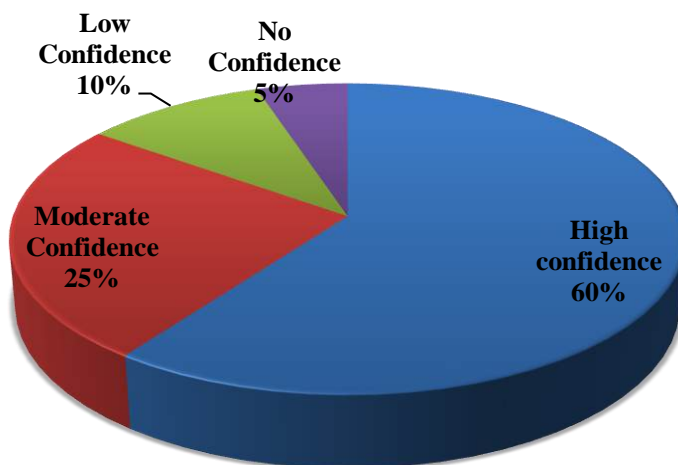


Figure 2: Confidence in Using Digital Tools

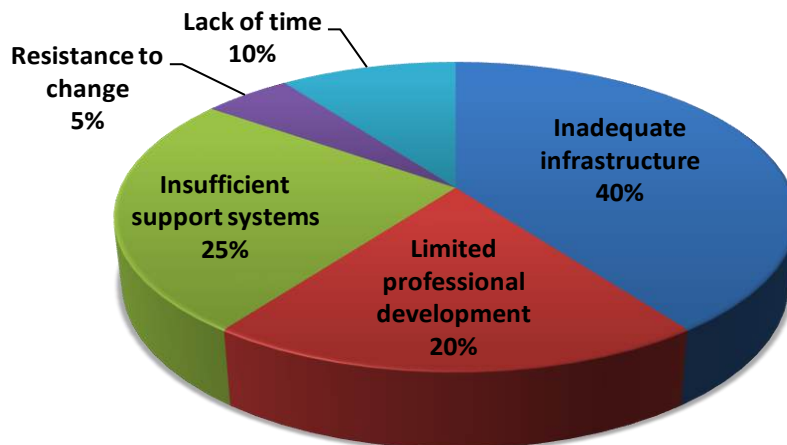


Figure 3: **Challenges Faced by Teachers**

Figure 1 indicates that 90% of teachers used digital tools regularly in their classrooms, with 60% using them daily. However, figure 2 indicates different confidence levels, with 60% of teachers expressing high confidence in using digital tools, 25% moderate confidence, 10% low confidence and 5% no confidence. Figure 3 shows the primary challenges identified include inadequate infrastructure (40%), limited access to professional development (20%) and insufficient support systems (25%). These findings are consistent with previous research, such as Ertmer and Ottenbreit-Leftwich (2010), which highlights the need for supportive policies and infrastructure to enable effective technology integration.

Furthermore, the data reveals a correlation between teacher confidence and frequency of digital tool usage. Teachers with high confidence levels are more likely to integrate technology daily, while those with lower confidence tend to use digital tools less frequently. This underscores the importance of targeted professional development to enhance teacher confidence and competence in educational technology. Interestingly, emerging technologies such as virtual reality and artificial intelligence were used by only a small percentage of teachers (10% and 5% respectively), suggesting potential areas for future growth and exploration. Regarding the impact on student learning, 75% of teachers reported observing increased student engagement when using digital tools, while 65% noted improvements in student collaboration. However, only 50% reported significant improvements in academic performance. These findings have important implications for educational policy and practice. They highlight the need for comprehensive strategies that address not only technology access but also teacher training, ongoing support, and infrastructure development. As noted by Mishra and Koehler (2006), successful technology integration requires a complex interplay of technological, pedagogical, and content knowledge.

B. Interview Data

The study conducted in-depth interviews with 20 teachers to gain a deeper understanding of their experiences and challenges in integrating technology into their teaching practices. The qualitative data provides rich insights into the personal and contextual factors influencing their ability to innovate. The responses from teachers were categorized into four main themes highlighting the enthusiasm of teachers for digital tools, the need for ongoing professional development, and the challenges related to infrastructure and support systems. These insights are crucial for understanding the complex dynamics of educational innovation and the role of teachers in this process.

- 1. Digital Tool Adoption:** Educators demonstrated significant enthusiasm regarding the integration of digital tools into their pedagogical practices. A substantial number of respondents emphasized the positive effects on student engagement and academic performance resulting from the implementation of interactive learning platforms and educational software. Results indicate that educators perceived these technologies as valuable assets in fostering a more dynamic and interactive classroom environment. Furthermore, it suggests a correlation between the use of digital tools and improved learning outcomes. This relationship merits further investigation to determine the specific factors contributing to these positive effects. It is essential to consider variables such as the type of digital tools employed, the frequency of their use, and the methods of integration into existing curricula. However, it is crucial to acknowledge potential challenges associated with widespread technology adoption in educational settings. These may include issues related to accessibility, digital literacy among both educators and students, and the need for ongoing professional development to ensure effective implementation of these tools.
- 2. Professional Development Requirements:** Educators underscored the necessity for ongoing professional development to maintain proficiency with technological advancements in the rapidly evolving educational landscape. The integration of cutting-edge tools and methodologies requires a concerted effort to stay abreast of current trends and best practices. Consequently, institutions are increasingly allocating resources towards comprehensive training programs and workshops designed to enhance educators' digital literacy and pedagogical skills. These initiatives not only bolster instructors' confidence in utilizing innovative technologies but also foster a culture of continuous learning within academic environments.
- 3. Infrastructure Limitations:** A prevalent concern among respondents was the insufficiency of adequate infrastructure, including but not limited to reliable internet connectivity and access to appropriate devices. This deficiency poses significant challenges to effective remote work and online learning, particularly in rural and economically disadvantaged areas. Results indicate that a substantial number of participants experienced frequent disruptions in their daily tasks due to subpar technological resources. Furthermore, the lack of proper infrastructure

exacerbates existing socioeconomic disparities, potentially widening the digital divide and hindering equal opportunities for professional and educational advancement.

- 4. Supportive Ecosystem:** Educators accentuated the significance of a supportive environment, encompassing administrative backing and peer collaboration, as crucial elements for successful implementation of digital tools in education. This emphasis on a supportive ecosystem extends beyond mere technological infrastructure. It encompasses the development of comprehensive professional development programs that equip teachers with the necessary skills and confidence to effectively integrate digital tools into their pedagogical practices. Furthermore, the establishment of clear institutional policies and guidelines regarding technology usage is deemed essential for creating a cohesive and consistent approach across educational institutions. The role of school leadership in fostering a culture of innovation and continuous learning is also highlighted as a key factor.

The qualitative data corroborates the survey findings, highlighting the enthusiasm of teachers for digital tools, the need for ongoing professional development, and the challenges related to infrastructure and support systems. These insights are crucial for understanding the complex dynamics of educational innovation and the role of teachers in this process.

Suggestions

Based on the findings of this research, several key suggestions can be made to support teachers in their role as innovators in the digital age:

- Organize ongoing professional development programs focused on the latest digital tools and teaching methodologies. This could include workshops, webinars, and online courses.
- Develop specialized training modules tailored to different subjects and teaching levels to ensure that all teachers receive relevant and practical skills.
- Establish platforms for peer learning and collaboration where teachers can share best practices, resources, and innovative ideas.
- Allocate sufficient funds to improve technological infrastructure in schools, including high-speed internet, modern devices, and digital learning platforms.
- Ensure that all students have access to necessary digital tools, reducing the digital divide and promoting equitable learning opportunities. Implement regular audits and updates to ensure that the technology used in schools remains current and effective.
- Provide dedicated technical support staff to assist teachers with the setup, maintenance, and troubleshooting of digital tools.

- Foster a culture of innovation by encouraging school administrators to support and recognize teachers' efforts in adopting new teaching practices. Develop clear policies that provide teachers with the time and resources needed to experiment with and implement digital innovations.
- Establish collaborative networks that connect schools, educational institutions, and technology providers to facilitate the sharing of resources and expertise.
- Promote partnerships with local and international educational organizations to bring in new perspectives and solutions. Engage the broader community, including parents, local businesses, and NGOs, in supporting digital education initiatives.
- Ensure that the implementation of NEP 2020 is aligned with the ground realities of schools and teachers. Identify specific challenges faced by teachers in different regions and contexts, and design targeted interventions to address these issues. Implement feedback mechanisms where teachers can report their challenges and receive timely support and solutions.
- Encourage the adoption of flexible teaching models that allow teachers to integrate digital tools at their own pace and according to their unique classroom needs.
- Explore hybrid teaching approaches that combine traditional methods with digital innovations to cater to diverse learning preferences.

By addressing these suggestions, educational institutions and policymakers can create an environment where teachers are empowered to innovate and leverage digital tools effectively. This will not only enhance the quality of education but also ensure that students are better prepared for the demands of the digital age.

Conclusion

The digital era presents both opportunities and challenges for the education sector. Educators, traditionally perceived as knowledge disseminators, are increasingly recognized as innovators who must integrate digital tools and methodologies to enhance the teaching and learning process. This research has examined the role of educators as innovators within the framework of the National Education Policy (NEP) 2020 in India, with a particular focus on the experiences of teachers in Delhi.

The findings indicate that a significant majority of educators are adopting digital tools regularly and demonstrate a high level of enthusiasm for these new technologies. However, despite their enthusiasm and confidence, educators face substantial challenges. Inadequate infrastructure, limited access to professional development, and insufficient support systems are the primary barriers that hinder their ability to fully embrace digital innovation. These findings align with previous research, such as Ertmer and Ottenbreit-Leftwich (2010), which underscores the necessity for supportive policies and infrastructure to enable effective technology integration.

The relevance of this study is underscored by the NEP 2020, which advocates for the adoption of educational technology to improve learning outcomes and inclusiveness. The

policy recognizes the critical role of educators as agents of change and emphasizes the need for their continuous professional development and the provision of adequate infrastructure.

To empower educators as innovators continuous professional development programs should be implemented to keep educators updated with the latest digital tools and teaching methodologies. Investment in technological infrastructure is essential to ensure that all educational institutions have access to high-speed internet and modern digital devices. Creating a supportive environment that includes administrative support and opportunities for peer collaboration is crucial for fostering innovation. Additionally, targeted interventions should be designed to address specific challenges faced by educators in different regions and contexts.

By addressing these challenges and leveraging the opportunities presented by digital tools, educators can play a transformative role in the digital age. This will not only enhance the quality and inclusiveness of education but also prepare students for the demands of the future. The findings of this research contribute to the broader discourse on educational reform and the integration of technology in education, highlighting the critical role of educators as innovators and the need for systemic support to realize the goals of the NEP 2020.

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New Trends in Educational Technology: Shaping the Future of Learning

Pinki Gupta¹

Abstract

This paper explores the rapidly evolving landscape of educational technology, focusing on the latest trends that are transforming teaching and learning processes. The study examines key innovations such as artificial intelligence, virtual and augmented reality, gamification, and adaptive learning systems, analyzing their potential to enhance educational outcomes. Through a review of recent literature and case studies, the paper highlights how these technologies are driving the shift toward more personalized, engaging, and efficient learning environments. Additionally, it discusses the challenges and considerations associated with integrating these technologies into diverse educational settings, including issues related to accessibility, teacher training, and digital equity. The research provides insights into the future directions of educational technology, emphasizing the need for strategic implementation to maximize benefits while addressing potential drawbacks. This study serves as a guide for educators, policymakers, and technology developers in navigating the complexities of the digital transformation in education.

Keywords: *Educational technology, emerging trends, personalized learning, digital transformation, gamification.*

Introduction

The landscape of education is undergoing a profound transformation, driven by rapid advancements in technology. As digital tools and platforms become increasingly integrated into educational settings, traditional methods of teaching and learning are being reimagined. The advent of new technologies such as artificial intelligence, virtual and augmented reality, and adaptive learning systems has the potential to enhance educational outcomes by making learning more personalized, interactive, and accessible. These innovations are not merely augmenting the educational process; they are fundamentally reshaping it, offering new opportunities for engagement, efficiency, and inclusivity. However, the integration of these technologies also presents significant challenges, including issues related to accessibility, teacher preparedness, and the

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digital divide. Understanding these emerging trends is crucial for educators, policymakers, and stakeholders who are tasked with navigating the complexities of the digital transformation in education. This paper aims to explore the latest trends in educational technology, examining both their potential benefits and the challenges they pose. Through a comprehensive analysis of current developments, this research seeks to provide insights into how these technologies are shaping the future of education, and the implications for teaching and learning practices worldwide.

Objectives of the Study

- a. To explore the latest trends and innovations in educational technology.
- b. To analyze the impact of emerging technologies on teaching and learning processes.
- c. To examine the potential benefits of educational technologies in enhancing student engagement and personalized learning.
- d. To identify the challenges associated with the integration of new technologies in diverse educational settings.
- e. To provide insights and recommendations for educators, policymakers, and stakeholders on effectively implementing these technologies in education.

Significance of the Study

- A. Provides valuable insights for educators, policymakers, and technology developers on how new trends can enhance teaching and learning.
- B. Offers practical recommendations for effectively integrating educational technologies in diverse settings.
- C. Identifies the potential advantages and obstacles associated with emerging technologies, helping stakeholders address issues proactively.
- D. Contributes to the body of knowledge on educational technology, paving the way for further research and innovation in the field.
- E. Aims to enhance student engagement and learning outcomes through the effective use of new technologies.

The Review of Related Literature

Kimmons, R. (2020) examines current trends in educational technology, identifying key areas of focus such as personalized learning, data-driven decision-making, and the integration of artificial intelligence. Kimmons highlights gaps in research, particularly the need for more studies on the ethical implications of technology use and the long-term effects on learners. The paper stresses the importance of bridging theory and practice, encouraging researchers to address practical challenges faced by educators. Kimmons also calls for a greater emphasis on inclusivity and equity in technology adoption, ensuring that educational tools benefit all learners regardless of their background.

Burbules, N. C., Fan, G., & Repp, P. (2020) identified five key trends in education and technology that are shaping a sustainable future. Burbules, Fan, and Repp discuss the

growing importance of digital literacy, the rise of online and blended learning models, and the increasing role of data analytics in education. They also highlight the shift towards more personalized and adaptive learning experiences, as well as the need for education systems to focus on sustainability and social responsibility. The authors emphasize that these trends must be aligned with global sustainability goals, ensuring that technological advancements in education contribute positively to societal and environmental well-being.

Martin, S., Lopez-Martin, E., Lopez-Rey, A., Cubillo, J., Moreno-Pulido, A., & Castro, M. (2018) analyze educational technology trends from 2010 to 2015, identifying key developments that have significantly impacted teaching and learning. The authors highlight the widespread adoption of mobile learning, the integration of cloud computing, and the use of big data analytics to personalize education. They also discuss the growing influence of social media as a learning tool and the emergence of gamification to enhance student engagement. Additionally, the paper emphasizes the increasing importance of online platforms for collaborative learning and the need for educators to adapt to these rapidly evolving technologies to meet the demands of modern education.

Ipek, I., & Ziatdinov, R. (2017) discussed the latest trends and innovative approaches in educational technology, focusing on both academic and industrial contexts. It highlights the increasing integration of digital tools and methods in teaching and learning, emphasizing the role of adaptive learning systems, virtual and augmented reality, and online collaborative platforms. The authors note the growing importance of personalized learning experiences and the shift towards more student-centered educational models. Additionally, the paper underscores the need for continuous research and development in educational technology to address the evolving demands of learners and educators in a rapidly changing technological landscape.

Winn, W. (2002) reviews current trends in educational technology research, with a focus on the study of learning environments. Winn emphasizes the shift from traditional instructional methods to the exploration of complex, interactive learning environments that incorporate digital tools. The research highlights how these environments support deeper understanding and active learning by allowing learners to engage with content in dynamic ways. Winn also notes the growing interest in studying the cognitive processes involved in learning within these environments. The paper calls for further exploration of how different technologies impact learning outcomes and how they can be optimized for diverse learners.

Ely, D. P. (1992) identifies and analyzes key trends in educational technology as of 1992. It highlights the increasing adoption of computers and multimedia resources in classrooms, alongside the shift towards more interactive and student-centered learning methods. The paper also discusses the growing interest in distance education, driven by advances in telecommunications and online platforms. Additionally, it emphasizes the importance of teacher training and professional development to effectively integrate technology into education. Ely calls for ongoing research and policy development to

keep pace with technological advancements and to ensure their effective application in educational settings.

These studies involve a lack of longitudinal studies assessing the long-term effectiveness of emerging technologies in education. While the paper identifies key trends like AI, personalized learning, and online platforms, there is limited research on their sustained impact on student outcomes, particularly across diverse learning environments. Additionally, the ethical considerations and equity issues associated with these technologies remain underexplored. More research is needed to understand how these innovations can be effectively and equitably integrated into different educational systems to ensure they meet the needs of all learners.

Methodology

This study employs a mixed-methods approach to analyze new trends in educational technology. Data collection includes an extensive literature review, surveys, and semi-structured interviews. The literature review will identify key innovations, while surveys will be administered to educators, administrators and students to gather quantitative data on technology usage and effectiveness. Qualitative data is collected through books, magazines, journals, websites etc. Quantitative data is collected via surveys to assess the prevalence and impact of these technologies across various educational settings. The combined results are analyzed to identify patterns, benefits and challenges associated with new technological trends. Ethical considerations, including participant consent and privacy, will be addressed. Limitations include the study's geographic scope and participant accessibility. This methodology provides a comprehensive understanding of how educational technologies are transforming teaching and learning processes.

Meaning of Educational Technology

Educational technology refers to the use of digital tools, resources, and systems to enhance teaching, learning, and educational administration. It encompasses a wide range of technologies, including computers, software, mobile devices, the internet, and multimedia content, aimed at improving the efficiency and effectiveness of education. Educational technology supports personalized learning, facilitates access to information, and enables innovative instructional methods. It also includes the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources in educational settings.

New Trends in Educational Technology -

Artificial Intelligence (AI): AI is being used to create personalized learning experiences, automate grading, and provide intelligent tutoring systems that adapt to students' needs.

Virtual and Augmented Reality (VR/AR): These technologies create immersive learning environments, allowing students to explore complex concepts through virtual simulations and interactive experiences.

Gamification: Integrating game elements like points, badges, and leaderboards into educational activities to increase student motivation and engagement.

Adaptive Learning Systems: These platforms use data analytics to adjust the learning content and pace according to the individual student's performance, providing a customized learning experience.

Microlearning: Delivering content in small, focused bursts that are easier for students to absorb and retain, often through mobile devices.

Blended Learning: Combining online and in-person instruction, giving students the flexibility to learn at their own pace while still benefiting from face-to-face interactions.

Blockchain Technology: Used for secure and transparent management of academic credentials, student records, and digital diplomas.

Learning Analytics: The use of data analysis to monitor student progress and inform teaching strategies, helping educators to tailor instruction more effectively.

Social Learning Platforms: Encouraging collaboration and peer-to-peer interaction through social media and online communities, fostering a more connected learning environment.

5G Technology: Enhancing the speed and reliability of online education, particularly in remote and hybrid learning environments, by providing faster internet connectivity.

What are the Impacts of Emerging Technologies on Teaching and Learning Processes?

Emerging technologies are profoundly transforming teaching and learning processes, reshaping traditional educational models into more dynamic, interactive, and personalized experiences. The integration of technologies such as artificial intelligence (AI), virtual reality (VR), and adaptive learning systems is enabling educators to tailor instruction to individual student needs, thereby enhancing engagement and improving learning outcomes. AI-powered tools can assess student performance in real-time, providing instant feedback and adjusting learning paths to address areas of difficulty. VR and augmented reality (AR) offer immersive learning experiences, allowing students to explore complex concepts in a hands-on, interactive manner that was previously impossible. Moreover, the use of gamification techniques has made learning more enjoyable and motivating, especially for younger learners, by incorporating game-like elements into educational content. These technologies also facilitate greater accessibility and inclusivity, making education more available to diverse student populations, including those with disabilities. However, the shift to technology-driven education requires educators to adapt to new teaching methods, necessitating continuous professional development and support. While these emerging technologies hold significant promise, they also present challenges, such as the digital divide and the need for substantial investment in infrastructure. Overall, emerging technologies are revolutionizing education, making learning more effective, personalized, and engaging.

Benefits of Educational Technologies in Enhancing Student Engagement and Personalized Learning -

Customized Learning Experiences: Educational technologies allow for the personalization of learning, tailoring content to individual student needs, strengths, and learning styles, leading to more effective and enjoyable learning experiences.

Increased Engagement: Interactive tools such as games, quizzes, and multimedia content capture students' attention and make learning more fun, helping to sustain their interest and motivation.

Immediate Feedback: Technologies like AI-powered platforms provide instant feedback on student performance, helping them understand their mistakes and improve their skills quickly.

Self-Paced Learning: Students can learn at their own pace, revisiting difficult topics and progressing faster through easier material, which reduces frustration and boosts confidence.

Enhanced Collaboration: Online platforms facilitate collaboration among students through discussion forums, group projects, and peer assessments, fostering a sense of community and shared learning.

Access to Diverse Resources: Students have access to a wide range of online resources, such as videos, articles and simulations that complement traditional learning materials and offer varied perspectives.

Adaptability: Adaptive learning systems adjust the content and difficulty based on student performance, ensuring that each student is appropriately challenged and supported.

Engagement beyond the Classroom: Educational technologies enable learning to continue outside the classroom through online courses, mobile apps, and digital assignments, keeping students engaged in their education at all times.

Integrating New Technologies into Diverse Educational Settings Presents Several Challenges -

- Unequal access to technology and the internet creates disparities in learning opportunities.
- High costs of acquiring and maintaining new technologies strain educational budgets.
- Teachers often lack training and skills needed to effectively use new technologies.
- Resistance to change can slow down the adoption of innovative tools.
- Inadequate infrastructure, such as outdated hardware and insufficient bandwidth, hampers technology integration.
- Data privacy and security concerns arise with the increased use of digital tools.

- Technologies may not easily adapt to different cultural and educational contexts.
- Over-reliance on technology risks reducing fundamental skills and face-to-face interactions.

Recommendations for Educators, Policymakers, and Stakeholders on Effectively Implementing these Technologies in Education -

- Provide continuous training and support for educators to help them integrate technology into teaching.
- Ensure equitable access to technology and the internet for all students, addressing the digital divide.
- Invest in upgrading infrastructure, including hardware and internet connectivity, in schools.
- Develop clear policies for data privacy and security to protect student information.
- Adapt technologies to fit the specific cultural and educational needs of diverse student populations.
- Encourage collaboration among educators, policymakers, and tech developers to align educational goals with technological innovations.

Findings of the Study

- ❖ Emerging technologies like AI and adaptive learning systems are effectively tailoring educational content to individual student needs, improving engagement and learning outcomes.
- ❖ Tools such as gamification, VR, and AR are enhancing student motivation and interaction, making learning more dynamic and immersive.
- ❖ Technology is improving access to education for diverse populations, though disparities in digital access still exist.
- ❖ Educators are increasingly adopting new technologies but require ongoing training and support to effectively integrate them into their teaching practices.
- ❖ Schools face issues related to cost, infrastructure, and digital divide, which can impact the successful integration of new technologies.

Suggestions

- Schools should invest in professional development to ensure educators are proficient in using new technologies and integrating them effectively into their teaching.
- Efforts should be made to bridge the digital divide by providing equal access to technology and the internet for all students, especially those in underserved areas.
- Schools need to upgrade their technological infrastructure, including hardware and internet connectivity, to support the effective use of new tools.

- Implement robust measures to protect student data and ensure compliance with privacy regulations when using educational technologies.
- Technology should be customized to fit the cultural and educational needs of diverse student populations to maximize its effectiveness.

Conclusion

In conclusion, the rapid evolution of educational technology is profoundly reshaping the way education is delivered and experienced. The integration of emerging technologies such as artificial intelligence, virtual and augmented reality, gamification, and adaptive learning systems is not just enhancing traditional methods but also creating entirely new paradigms for teaching and learning. These innovations hold great promise for making education more personalized, engaging, and inclusive, offering students learning experiences that are tailored to their individual needs and preferences. They also empower educators with new tools and data-driven insights that can help improve instructional effectiveness and student outcomes. However, the taking on of these technologies is not without its challenges. Issues such as digital equity, the digital divide, and the need for adequate teacher training must be addressed to ensure that the benefits of educational technology are accessible to all students, regardless of their socio-economic background. Additionally, there is a need for ongoing research and critical evaluation to assess the long-term impacts of these technologies on educational outcomes and to ensure they are implemented in ways that truly enhance learning. As we look to the future, it is clear that educational technology will continue to play a central role in shaping the landscape of education. Stakeholders—including educators, policymakers, technology developers, and researchers—must work collaboratively to harness the potential of these innovations while addressing the challenges they present. By doing so, we can create a more equitable, effective, and future-ready education system that meets the needs of all learners in a rapidly changing world.

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Metacognitive Awareness among Prospective Teachers of Ranchi District in Jharkhand

Debanjali Ghosh¹ & Vijay Kumar Yadav²

Abstract

Metacognitive awareness among the prospective teachers enables them to reflect on and regulate their own learning so that they would be equipped enough to model and teach these crucial and essential skills to their students in the future. This study aims to find out whether gender differences, different Teacher Education Programmes, and various pedagogy subjects are vital factors for variation in metacognitive awareness levels among prospective teachers. It also attempts to find out the overall metacognitive awareness level among the prospective teachers. Descriptive survey methods for research design and simple random sampling techniques for selecting samples have been followed in this study. The sample consists of 160 prospective teachers from B.A. B.Ed., B.Sc. B.Ed. and B.Ed. programs from the Teacher Education Institute of Ranchi district, Jharkhand. The data were collected by the "Scale to Assess Metacognitive Awareness Level" developed and standardized by the researchers with content validity and reliability coefficient of 0.871. To analyze the data descriptive statistics t-test, and ANOVA were employed.

The present study concludes that, gender differences, different Teacher Education Programmes, and various pedagogy subjects are not the factors that impact the variations in metacognitive awareness level among the different groups of prospective teachers. The result of the study also reveals that the maximum number of prospective teachers possessed low metacognitive awareness among them.

Keywords: Metacognitive Awareness, Prospective Teachers, Gender, Teacher Education Programme, Pedagogy Subjects.

Introduction

Metacognition, the awareness and understanding of one's thought processes, has drawn significant attention in the educational field for its profound implications on learning outcomes and cognitive development (Sahoo et al., 2021). Bloom classified

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metacognitive awareness into 5 levels namely, remember, understand, apply, analyze, evaluate, and create. Within the realm of teacher education, the cultivation of metacognitive awareness among prospective teachers emerges as a crucial aspect in fostering effective instructional practices and student engagement (Balcikanli, 2011). Prospective teachers must cultivate a strong sense of metacognitive awareness. This awareness enables them to critically reflect on their learning strategies, identify areas for improvement, and adapt their teaching methods to cater to the diverse needs of their future students. By fostering metacognitive awareness, prospective teachers can enhance their problem-solving abilities, develop a growth mindset, and ultimately become more active and effective facilitators of learning in the classroom. This study seeks to explore broadly two dimensions, namely, Practical knowledge and contextual understanding. Under Cognitive regulation, there are five sub-dimensions, namely, strategizing, understanding monitoring, data management tactics, problem-solving strategies, and evaluation. To promote reflective practices and facilitate lifelong learning in educational contexts, metacognitive awareness among prospective teachers should be understood. So to illuminate the intricacies of metacognitive processes in the domain of teacher education, a deeper understanding of how prospective teachers can harness metacognitive awareness to optimize their teaching effectiveness and support the students should be fostered.

Theoretical Background of the Study

The concept of Metacognition was first introduced by John Flavell in 1970 and referred to as awareness and understanding of one's own thoughts. Metacognitive Awareness is the conscious recognition of one's metacognitive processes. It involves knowing how one thinks, learns, and solves any problem. It has two components metacognitive knowledge and metacognitive regulation. It is related to self-regulated learning. In Flavell's model of metacognition, he proposed that metacognition consists of metacognitive knowledge and metacognitive experiences (Flavell, 1979). Wherein, Brown's model of metacognition emphasizes the role of executive control in metacognition (Brown, 1987). Zimmerman's Self-Regulated Learning Model focuses on how metacognitive awareness processes regulate own learning (Zimmerman, 2000). Metacognitive awareness is also important for prospective teachers as it helps the teachers to reflect on their own teaching and learning practices.

Need for the Study

Metacognition plays a critical role in effective teaching and learning. So, this research study is essential for improving the quality of teacher education programs and, consequently, enhancing the overall educational landscape in the region. By exploring the metacognitive awareness in prospective teachers, the study can identify gaps in current training approaches and inform targeted interventions to develop these critical skills. The findings of this research have the potential to guide policy decisions, curriculum development and improvement and finally foster metacognitive awareness in prospective teachers. This study is basically a catalyst to create a ripple effect among

the prospective teachers, by contributing to long-term improvements in educational outcomes across the district and potentially the state.

Review of Related Literature

Kumari et al. (2024) in their study, compared the metacognitive awareness level between the rural and urban prospective teachers and revealed that particularly for planning and evaluation systems, urban prospective teachers showed a higher metacognitive awareness level. A comprehensive research work conducted by Aslan and Ince (2023) revealed that there is a positive correlation between the higher metacognitive awareness and perceived teaching efficacy among prospective teachers. A research work by Kumar and Singh (2019) concluded that prospective teachers of Ranchi district had moderate levels of metacognitive awareness with significant differences in metacognitive awareness levels based on gender. A study by Ayaz (2019) investigated the metacognitive awareness levels of pre-service mathematics teachers. They found that while the participants had moderate levels of metacognitive awareness overall, their declarative knowledge (knowledge about one's cognitive processes) was higher than their procedural knowledge (knowledge about how to regulate cognitive processes). La Misu and La Masi (2017) found that female students had better metacognitive awareness than male students. The researchers emphasized the importance of incorporating metacognitive strategies into teacher education programs to enhance prospective teachers' metacognitive skills. Similarly, Koc & Kuvac (2016) examined the metacognitive awareness levels of pre-service science teachers and found that they possessed moderate levels of metacognitive awareness. The study revealed that female prospective teachers tended to have higher metacognitive awareness levels.

Considering a low number of studies on the awareness level of prospective teachers and their inconsistent findings, the present study aims to make a connection between prospective teachers' metacognitive awareness with different teacher education programs, pedagogies, and gender.

Objectives of the Study

1. To find out the metacognitive awareness level among the Prospective teachers.
2. To compare the mean scores of male and female prospective teachers' metacognitive awareness.
3. To compare the mean scores of metacognitive awareness among the prospective teachers of B.A. B.Ed., B.Sc. B.Ed., and B.Ed. programs.
4. To compare the mean scores of metacognitive awareness among the prospective teachers of Social Science, Science, Language, and Mathematics pedagogy.

Hypotheses of the Study

H₀-1: There is no significant difference in the mean scores of male and female prospective teachers' metacognitive awareness.

H₀-2: There is no significant difference in the mean scores of metacognitive awareness among the prospective teachers of B.A. B.Ed., B.Sc. B.Ed., and B.Ed. programs.

H₀-3: There is no significant difference in the mean scores of metacognitive awareness among the prospective teachers of Social Science, Science, Language, and Mathematics pedagogy.

Research Design

A quantitative descriptive survey design has been followed to fulfill the study's objectives. Here Metacognitive awareness is considered as a dependent variable whereas gender, different teacher education programs, and pedagogy subjects are considered as independent variables. For testing the null hypothesis, the Scale to Assess Metacognitive Awareness Level was developed and administered by the researcher and the data was collected and analyzed by following descriptive statistics.

Population of the Study:

All the Teacher Education Institutes of Jharkhand were considered as the population of the present study.

Sample of the Study

To fulfill the objectives of the study, 160 prospective teachers from B.A. B.Ed., B.Sc. B.Ed. and B.Ed. programs from the Teacher Education Institute of Ranchi district, Jharkhand were selected as a sample through the random sampling method.

Tool used:

1. To assess the level of metacognitive awareness of prospective teachers, a self-made four (4) point Likert scale has been developed, named "Scale to Assess Metacognitive Awareness Level".
2. This scale has two broad dimensions: namely, Cognitive awareness and cognitive regulation. Under Cognitive awareness, there are two sub-dimensions, namely, Practical knowledge and contextual understanding. Under Cognitive regulation, there are five sub-dimensions, namely, strategizing, understanding monitoring, data management tactics, problem-solving strategies, and evaluation.
3. The scale was standardized by using content validity and checking the reliability coefficient of 0.871 by Cronbach's alpha. This scale contains 33 items with four responses. i.e. Always, Often, Rarely, Never. The points for the chosen response are assigned as 4, 3, 2, and 1 respectively. The minimum and the maximum values of this scale are 33 and 132 respectively. The result of the study will be interpreted as of low metacognitively aware if the prospective teachers have a metacognitive awareness score below the mean score of 112.37 and high if the score is equal to or above the mean score, of 112.37.

Data Analysis and Interpretation:

Objective 1: To find out the metacognitive awareness level among the Prospective teachers.

Table 1: Level of Metacognitive Awareness among Prospective Teachers

Variable	Mean value of Metacognitive Awareness level (M)	Level of Metacognitive Awareness	No. of Prospective teachers	Percentage of Prospective Teachers	Remarks
Metacognitive Awareness level	112.37	high awareness (≥ 112.37)	62	38.75%	Maximum prospective teachers are with low metacognitive awareness.
		low awareness (< 112.37)	98	61.25%	

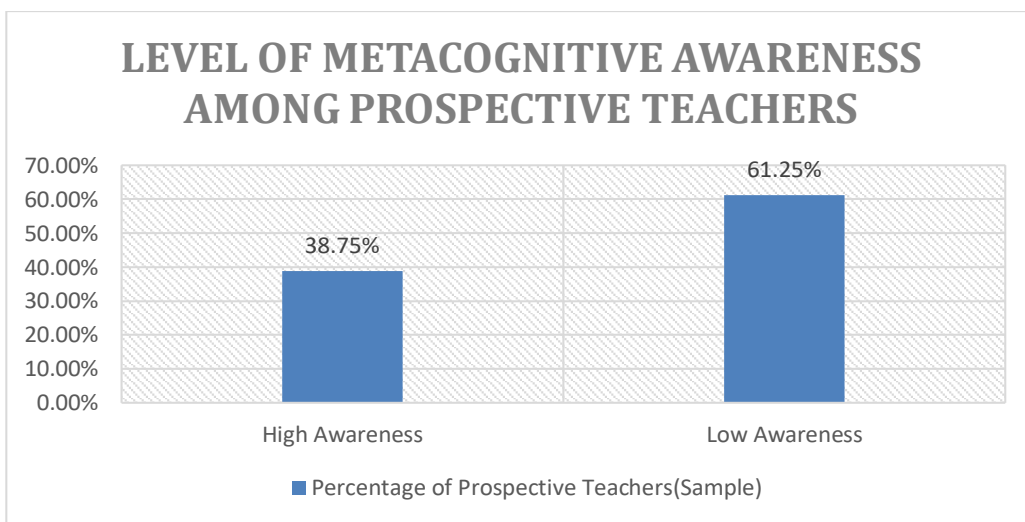


Fig. 1- Level of metacognitive awareness among prospective teachers

The result in Table 1 and Fig. 1, indicates that there are 38.75% of prospective teachers have high metacognitive awareness and 61.25% of prospective teachers have low metacognitive awareness with a mean metacognitive awareness of 112.37. Hence it can be said that, maximum prospective teachers have low metacognitive awareness.

Objective 2: To compare the mean scores of male and female prospective teachers' metacognitive awareness.

To compare the mean scores of male and female prospective teachers' metacognitive awareness levels, the mean and standard deviation scores were calculated, which are mentioned in Table 2. To determine whether the two groups have

significant differences in their metacognitive awareness level scores, the independent t-test was administered. The obtained values are tabulated below.

Table-2: comparison of the mean scores of male and female Prospective teachers' metacognitive awareness

Variable	Male (N= 74)		Female (N= 86)		t-Value	Degrees of Freedom (Df)	Remarks
Metacognitive Awareness level	Mean	Standard Deviation (SD)	Mean	Standard Deviation (SD)	4.5811	158	Significant
	108.30	9.611	115.89	11.347			

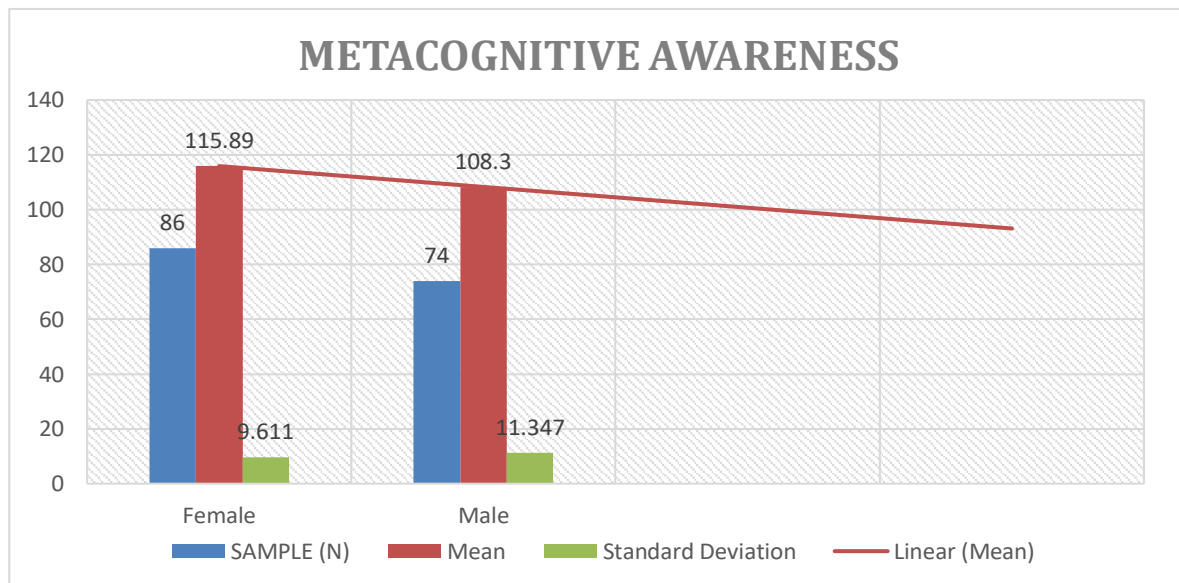


Fig. 2- Metacognitive awareness among Female and Male Prospective teachers

From the above Table-2 and Fig. 2, the mean score and standard deviation of metacognitive awareness of females are 115.89 and 9.611, and for males, 108.30 and 11.347 respectively. When their differences in mean scores were tested through a t-test it was found that $df = 158$ and a t-value is 4.5811 which is greater than the values for 0.01 and 0.05 levels of significance. Hence the null hypothesis H_0-1 is rejected. So, it is inferred that there is significant difference in the mean scores of metacognition awareness between the Male and Female Prospective teachers. Hence, it can be said

that gender is a factor that affects the metacognitive awareness of prospective teachers and female prospective teachers are found to be more metacognitively aware than male prospective teachers.

Objective 3: To compare the mean scores of metacognitive awareness among the prospective teachers of B.A. B.Ed., B.Sc. B.Ed., and B.Ed. programs.

To compare the mean scores of metacognitive awareness among the prospective teachers of B.A. B.Ed., B.Sc. B.Ed., and B.Ed. programs, F- value was calculated, which is mentioned in Table 3.

Table-3: comparison of the mean scores of metacognitive awareness among the prospective teachers of B.A. B.Ed., B.Sc. B.Ed., and B.Ed. programs

Variables			Source of variation	Sum of Squares	Df	Mean Square	F- Value	Level of Significance
Background		Dependent						
Teacher Education Programme			Between Group	474.160	2	237.080	2.173	H ₀₋₂ is accepted at a 0.05 level
B.A. B.ED.	B.Sc. B.Ed.	B.Ed.	Within Group	16478.022	151	109.126		

The result in Table- 3 clearly shows that the calculated F-value is 2.173, which is less than the table value at a 0.05 level of significance. Thus, the null hypothesis **H₀₋₂** is accepted. It can be interpreted from the result that there is no significant difference in the metacognitive awareness among prospective teachers of B.A. B.Ed., B.Sc. B.Ed. and B.Ed. program. So, the teacher education program is not a factor that affects the metacognitive awareness level of the prospective teachers.

Objective 4: There is no significant difference in the mean scores of metacognitive awareness among the prospective teachers of Social Science, Science, Language, and Mathematics pedagogy.

To compare the mean scores of metacognitive awareness among the prospective teachers of Social Science, Science, Language, and Mathematics pedagogy, the F- value was calculated, which is mentioned in Table 4.

Table-4: comparison of the mean scores of metacognitive awareness among the prospective teachers of Social Science, Science, Language, and Mathematics pedagogy

Variables				Source of variation		Sum of Squares	Df	Mean Square	F- Value	Level of Significance
Background			Dependent							
Pedagogy subject				Metacognitive Awareness	Between Group	327.358	4	81.839	0.733	H ₀₋₃ is accepted at a 0.05 level
Social Science	Science	Language	Math		Within Group	16624.824	149	111.576		

The result in Table 4 indicates that the calculated F-value is 0.733, which is less than the table value at a 0.05 level of significance. Thus, the null hypothesis H_0-3 is accepted. It can be interpreted from the result that there is no significant difference in the metacognitive awareness among prospective teachers of different pedagogy subjects like Social Science, Science, Language, and Math. So, the Pedagogy Subjects in the teacher education program is not a factor that affects the metacognitive awareness level of the prospective teachers.

Major Findings of the study:

1. An overall high metacognitive awareness level among the prospective teachers has been found.
2. Metacognitive awareness levels between male and female prospective teachers differ significantly. It is found that female prospective teachers are more metacognitively aware than male prospective teachers.
3. Metacognitive awareness levels among different groups of prospective teachers enrolled in B.A. B.Ed., B.Sc. B.Ed. and B.Ed. programs does not differ significantly.
4. Metacognitive awareness levels among language, Social Science, Science, and Mathematics pedagogy prospective teachers do not differ significantly.

Recommendations and Suggestions:

Based on the findings of the study the researcher has suggested for following recommendation to the stakeholders of the Teacher Education Programme to improve metacognitive awareness levels among prospective teachers.

1. Stakeholders should understand the variation in the metacognition awareness level based on the gender and consider the individual differences to execute necessary instructional strategies in the class so that the prospective teacher's metacognition awareness will be enhanced especially for male prospective teachers.
2. Teacher Education programs must include modules or courses emphasizing metacognition techniques and strategies such as self-regulation, self-monitoring, goal setting, and reflection so that students can learn how to apply these strategies in their learning process as well as how to teach them to future learners.
3. During instruction teacher educators should model metacognitive practices, such as thinking aloud while solving problems, explicitly discussing their thought process, and encouraging prospective teachers to do the same.
4. Encouraging reflective practices such as journaling, peer feedback, self-assessment, etc. must be incorporated into the Teacher Education Program curriculum, which enables prospective teachers to reflect on their learning experiences, weaknesses, strengths, and areas for improvement.
5. Prospective teachers should be provided opportunities to practice metacognitive strategies in real or simulated classroom settings, which may involve lesson planning

exercises, microteaching sessions, or field experiences. In this process, constructive feedback from faculty and peers can help the prospective teachers identify areas of improvement and refine their metacognitive skills.

6. Integrating technology tools such as digital portfolios, learning management systems, etc. can support metacognition development by facilitating self-reflection and goal setting. Virtual reality environments and interactive simulations can provide opportunities for prospective teachers to practice metacognitive strategies in different scenarios.
7. Teacher education programs must collaborate with experienced in-service teachers, who effectively incorporate metacognitive strategies in their classrooms so that the teachers can share their best practices, experiences, and insights to foster a deeper understanding of metacognition in real-world teaching scenarios.
8. Metacognitive awareness should be a continuous process that is not limited to the initial teacher education program. Hence, through workshops, seminars online resources, etc. stakeholders should provide opportunities for ongoing comprehensive professional development in enhancing their metacognitive skills throughout their careers.

Conclusion

Being metacognitively adept by enhancing metacognitive awareness among prospective teachers is essential for the learners and the teachers of the 21st century as it is crucial for promoting critical thinking, lifelong learning, and academic success. The present study concludes that the female prospective teachers are more metacognitively aware than their male counterparts. It is also found, that, there does not exist any significant difference in the mean scores of metacognitive awareness among the prospective teachers based on Teacher Education Programs, and Pedagogy subjects. The overall metacognitive awareness of the prospective teachers is found to be low. It is suggested that all prospective teachers must be equipped with effective metacognitive strategies and involved in the practice of reflection so that they can be self-regulated learners themselves and consequently better equipped to nurture metacognitive skills in their students by making them think and think about thinking effectively and act accordingly and purposefully.

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Constitutional Values and Ethics of the Indian Constitution: An Educational Imperative

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Abstract

The Indian Constitution, one of the most comprehensive and longest in the world, lays down the framework for the governance of the country. Beyond its legalistic and structural elements, the Constitution embodies core values and ethics that are vital to the social, cultural, and political fabric of India. These values—justice, equality, liberty, and fraternity—are essential for fostering an inclusive, equitable, and vibrant society. This paper explores the integration of these Constitutional values of our Indian Constitution into the education system, emphasizing and creating a learning environment that nurtures these values to create ideal citizens of India. By embedding these values into the curriculum, educators can equip students with the skills and awareness needed to become responsible and successful citizens.

Keywords: Constitutional values, Indian Constitution, Social justice, Equality, Liberty, Fraternity

Introduction

The Indian Constitution is not merely a legal document but a testament to the aspirations, values, and ethics of the people of India. It lays down the foundation for a society based on justice, equality, liberty, and fraternity—values that are integral to the development of a democratic and pluralistic society. Our Constitution is a resolve to constitute India into a sovereign, socialist, secular democratic Republic. It is, in fact, a promise to the people to secure them socio-economic and political justice, liberty and equality; liberty of thought, expression, belief, faith and worship; equality of status and opportunity; and to promote among all – fraternity, assuring the dignity of the individual and the unity of the nation. As educators, there is a significant responsibility to impart

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these values to students, shaping them into informed and conscientious citizens through our curriculum.

The Ethical Foundation of the Indian Constitution

The Indian Constitution, drafted by the Constituent Assembly and adopted on 26th January 1950, is deeply rooted in ethical principles that aims to ensure justice, equality, and liberty for all citizens. Dr. B.R. Ambedkar, the principal architect of the Indian Constitution, was deeply committed to ensuring that these values were ingrained into the very fabric of the Constitution. Having personally endured severe social injustice and discrimination due to the caste system, Dr. Ambedkar was determined that no individual should suffer the same indignities and hardships that he faced. His efforts were crucial in embedding the principles of social, economic, and political justice, along with liberty of thought, expression, belief, faith, and worship, into the Constitution. He worked to ensure that future generations would inherit a society built on equality and justice, where discrimination based on caste, gender, or religion would be abolished. His advocacy for the abolition of untouchability (Article 17), as well as the establishment of reservations for Scheduled Castes, Scheduled Tribes, and Other Backward Classes, demonstrates his commitment to rectifying historical injustices and providing a framework for social upliftment.

This section hence, has explored the key constitutional values along with their implementation through various programs in schools and colleges.

A. Justice (Social, Economic, and Political)

1. Social Justice

Social Justice refers to the elimination of social inequalities and the provision of equal opportunities for all individuals, regardless of caste, gender, religion, or social status. It ensures that no one is discriminated against and that everyone has access to basic rights and resources. The Constitution's Abolition of Untouchability (Article 17) and the provision of reservations for Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC) in education and employment are practical examples of social justice.

Implementation in Schools/Colleges

Inclusive Policies: Implement policies that prevent discrimination based on caste, gender, or religion within the institution.

Scholarships and Reservations: Provide scholarships, financial aid, and reserved seats for students from marginalized communities to ensure equal access to education.

2. Economic Justice

Economic justice ensures the fair distribution of wealth, opportunities, and resources. It aims to reduce the gap between the rich and the poor by providing equal economic opportunities to all citizens. The Directive Principles of State Policy (DPSP) advocate for

the state to work toward securing a living wage, ensuring equal pay for equal work, and protecting the rights of workers. This is seen in policies like the Minimum Wages Act.

Implementation in Schools/Colleges

Equal Access to Resources: Ensure that all students, regardless of their economic background, have access to the same educational resources, including textbooks, lab equipment, and extracurricular activities.

Work-Study Programs: Introduce work-study programs where students can earn money while studying, thereby reducing the financial burden on economically disadvantaged students.

Skill Development: Offer vocational training and skill development courses to help students from economically weaker sections gain employable skills.

3. Political Justice

Political justice ensures that all citizens have an equal voice in the political process, including the right to vote, the right to participate in governance, and the right to hold public office. The universal adult suffrage guaranteed by the Constitution (Article 326) is a prime example of political justice, ensuring that every citizen over the age of eighteen has the right to vote, irrespective of their caste, creed, or gender.

Implementation in Schools/Colleges

Student Councils: Establish democratic student councils where students can participate in decision-making processes. This helps inculcate a sense of political justice and democratic values.

Mock Elections: Conduct mock elections to teach students about the electoral process and the importance of voting.

Debates and Discussions: Organize debates and discussions on current political issues to encourage political awareness and active participation among students.

Implementation Strategies in Educational Settings

1. **Curriculum Integration:** Integrate the principles of social, economic, and political justice into the curriculum through subjects like social studies, civics, and ethics. Use case studies, historical events, and current affairs to illustrate these concepts.
2. **Awareness Campaigns:** Conduct awareness campaigns on constitutional rights and duties, focusing on how students can practice justice in their daily lives.
3. **Workshops and Seminars:** Organize workshops and seminars on topics like human rights, gender equality, and economic empowerment. Invite speakers who have worked in these fields to share their experiences.

4. **Community Engagement:** Encourage students to engage in community service projects that promote social and economic justice, such as volunteering with NGOs, participating in social welfare activities, or organizing fundraising events for underprivileged groups.

By fostering an environment that upholds the principles of social, economic, and political justice, educational institutions can play a crucial role in preparing students to be responsible, aware, and active citizens who contribute positively to society.

B. Liberty (Thought, expression, belief, faith and worship)

Liberty of Thought

Liberty of Thought refers to the freedom to hold and form one's own opinions, ideas, and beliefs without interference from the state or society. The right to freedom of thought is implicit in the broader right to freedom of conscience, which allows individuals to think independently, critically analyze information, and form their own opinions on various matters.

Implementation in Schools/Colleges

Encouraging Critical Thinking: Promote activities that encourage students to think critically, question assumptions, and develop their viewpoints.

Debates and Discussions: Organize debates, group discussions, and essay competitions on diverse topics to foster independent thinking among students.

Freedom in Learning: Allow students to choose subjects and areas of study that interest them, encouraging them to pursue their intellectual curiosities.

2. Liberty of Expression

Liberty of expression refers to the right to freely express one's opinions, ideas, and beliefs through speech, writing, art, or any other medium, without fear of censorship or punishment. Article 19(1)(a) of the Indian Constitution guarantees the freedom of speech and expression, allowing individuals to express their views on any matter, whether it be political, social, or personal, as long as it does not harm public order, morality, or national security.

Implementation in Schools/Colleges:

Student Publications: Support student-run newspapers, magazines, or blogs where students can freely express their thoughts and opinions on various issues.

Open Forums: Create platforms for students to voice their opinions on school policies, current events, or societal issues through open forums, town halls, or suggestion boxes.

Creative Freedom: Encourage students to express themselves creatively through art, music, drama, or literature, allowing for diverse forms of expression.

3. Liberty of Belief

Liberty of Belief ensures that individuals have the freedom to hold any religious or non-religious beliefs without coercion or discrimination. The Indian Constitution, through Article 25, provides every citizen the freedom of conscience and the right to freely profess, practice, and propagate their religion. This ensures that individuals can hold and maintain their religious or philosophical beliefs without interference.

Implementation in Schools/Colleges

Respect for Diverse Beliefs: Foster an environment of respect for all religious and non-religious beliefs by incorporating lessons on religious tolerance and secularism into the curriculum.

Cultural Awareness Programs: Organize cultural awareness programs that educate students about different religions, philosophies, and belief systems, promoting mutual respect and understanding.

Inclusive Policies: Ensure that school policies and activities do not favour any particular religion or belief system, allowing students to freely observe their beliefs.

4. Liberty of Faith

Liberty of Faith refers to the freedom to have faith in any religion or spiritual belief system, or to have no faith at all, and to follow the practices and rituals associated with that faith. Liberty of faith is protected under the same constitutional provisions as liberty of belief (Article 25), allowing individuals to follow their chosen faith or change it without any legal or social repercussions.

Implementation in Schools/Colleges

Celebration of Diversity: Celebrate various religious festivals and observances inclusively, allowing students to share and experience different faith traditions.

Flexible Attendance Policies: Implement policies that allow students to take leave for religious observances without penalty, recognizing the importance of faith in their lives.

5. Liberty of worship guarantees the freedom to worship following one's faith and practices, either individually or collectively, in private or public. The freedom to build places of worship, perform religious rituals, and participate in religious gatherings without interference is protected under the Constitution, as long as it does not disrupt public order or violate the rights of others.

Implementation in Schools/Colleges

Respect for Worship: Ensure that students who wish to observe religious practices, such as prayer times or fasting, are given the necessary support and respect from the institution.

Inclusive Assemblies: Design school or college assemblies to be inclusive of all religions, offering moments of silence or universal prayers that respect the diversity of faiths.

Implementation Strategies in Educational Settings

Curriculum Integration: Integrate the principles of liberty of thought, expression, belief, faith, and worship into subjects like social studies, civics, and moral education. Use case studies and real-world examples to illustrate these concepts.

1. Awareness and Sensitivity Training: Conduct workshops and seminars for both students and staff on constitutional rights and the importance of respecting and upholding these liberties.
2. Conflict Resolution Mechanisms: Establish mechanisms to address and resolve conflicts that may arise from differences in beliefs, ensuring that such conflicts are handled with sensitivity and respect for individual liberties.
3. Promoting a Culture of Dialogue: Create a school or college culture that values open dialogue, where students and staff feel safe to express their thoughts, beliefs, and faiths without fear of judgment or retribution. By fostering an environment that respects and upholds these liberties, educational institutions can play a vital role in developing responsible, tolerant, and open-minded citizens who contribute positively to a diverse and democratic society.

C. Equality (Status and Opportunity)

Equality of Status

Equality of Status refers to the absence of discrimination on the grounds of caste, creed, gender, religion, race, or social standing. It ensures that all individuals are treated with the same respect and dignity, and are provided the same legal status and recognition in society. Articles 14 to 18 of the Indian Constitution deal with equality before the law and the prohibition of discrimination. For instance, Article 15 prohibits discrimination on the grounds of religion, race, caste, sex, or place of birth, ensuring that all citizens have equal access to public spaces and services.

Implementation in Schools/Colleges

Anti-Discrimination Policies: Enforce strict anti-discrimination policies to ensure that no student or staff member faces discrimination based on their caste, gender, religion, or socio-economic status.

Diverse Representation: Ensure that students from all backgrounds are represented in various school activities, clubs, and leadership positions, reflecting the diversity of the student body.

Inclusive Education: Implement inclusive education practices that accommodate students with disabilities or special needs, ensuring they receive equal opportunities to participate in all aspects of school life.

2. Equality of Opportunity

Equality of opportunity refers to the provision of equal chances for all individuals to achieve their potential, regardless of their starting point in life. It means that everyone should have the same access to education, employment, and other opportunities that lead to personal and professional development. The Constitution's provisions for affirmative action, such as reservations in education and employment for Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC), are examples of efforts to level the playing field and provide equal opportunities to historically disadvantaged groups.

Implementation in Schools/Colleges

Merit-Based Opportunities: Ensure that academic and extracurricular opportunities are based on merit and effort rather than favouritism or bias. This includes fair and transparent admission processes.

Scholarships and Financial Aid: Offer scholarships and financial aid to economically disadvantaged students to ensure they have the same opportunities to access quality education as their peers.

D. Fraternity

Fraternity as enshrined in the Indian Constitution refers to a sense of brotherhood and mutual respect among all citizens. The Constitution emphasizes fraternity to ensure that every individual is treated with dignity and that the nation remains united and integrated. This principle is vital for fostering a sense of solidarity, belonging, and collective responsibility in a diverse society like India.

1. Assurance of the Dignity of the Individual

The dignity of the individual refers to the respect and value accorded to every person, recognizing their inherent worth and rights as human beings. The Constitution guarantees fundamental rights that protect individual dignity, such as the right to equality (Article 14), the right to freedom of speech and expression (Article 19), and the right against exploitation (Article 23). These rights ensure that every individual is treated with respect and is free from discrimination and oppression.

Implementation in Schools/Colleges

Respectful Environment: Create a school culture where every student and staff member is treated with respect, regardless of their background or beliefs. Encourage respectful communication and discourage any form of bullying or harassment.

Value Education: Incorporate value education into the curriculum, teaching students about the importance of respecting the dignity of others, empathy, and kindness.

Inclusive Practices: Ensure that all students, including those with disabilities, from marginalized communities, or with different learning needs, are included in all aspects of school life and are provided with the necessary support to succeed.

2. Assurance of Unity and Integrity of the Nation

Unity and integrity refer to the strength and solidarity of the nation, ensuring that all regions, communities, and individuals work together towards the common good, respecting the diversity that exists within the country.

The Preamble and various provisions of the Constitution, such as those related to the preservation of the Union (Article 1) and the promotion of harmony among various sections of society (Article 51A), emphasize the importance of national unity and integrity. These principles are crucial in preventing secessionist tendencies and fostering a sense of national identity.

Implementation in Schools/Colleges

National Integration Programs: Organize programs and activities that promote national integration, such as cultural exchanges, inter-school competitions, and celebrations of national festivals that highlight the unity in diversity of India.

Patriotism and Civic Responsibility: Teach students about their civic duties and responsibilities, such as respect for the Constitution, national symbols, and the importance of maintaining the unity and integrity of the nation.

Conflict Resolution Education: Provide training on conflict resolution and mediation, helping students learn how to address and resolve differences peacefully and constructively, thereby contributing to social harmony.

Promoting Fraternity in Educational Settings

Peer Support Systems: Establish peer support systems, such as buddy programs or mentorship initiatives, where students help and support each other, fostering a sense of fraternity and solidarity.

Collaborative Learning: Encourage collaborative learning through group projects, team-based activities, and peer tutoring, where students work together towards common goals, learning the value of cooperation and mutual respect.

Implementation Strategies in Educational Settings

1. **Curriculum Integration:** Integrate the concept of fraternity into subjects like social studies, history, and civics, using examples from Indian history and contemporary society that demonstrate the importance of brotherhood, unity, and respect for diversity.
2. **School Events and Celebrations:** Celebrate important national days, such as Independence Day, Republic Day, and Gandhi Jayanti, with activities that promote the values of fraternity, unity, and national integrity. Encourage participation from all students, reflecting the diverse nature of the school community.
3. **Anti-Bullying Campaigns:** Implement anti-bullying campaigns that emphasize respect for all individuals and promote a zero-tolerance policy towards any form of

discrimination or harassment. Educate students on the importance of fraternity in creating a safe and supportive school environment.

Conclusion

In conclusion, the four core values of the Indian Constitution—justice, liberty, equality, and fraternity—serve as the foundation for building a just and inclusive society. Justice ensures fairness and equal treatment, fostering social, economic, and political equity. Liberty empowers individuals with the freedom of thought, expression, belief, faith, and worship, enabling them to live with dignity. Equality guarantees that all citizens have equal status and opportunities, removing barriers of discrimination and prejudice. Lastly, fraternity nurtures a sense of brotherhood and unity, ensuring the dignity of every individual and strengthening the integrity of the nation. Together, these values not only define the essence of democracy but also guide the nation towards a harmonious and progressive future. It is of supreme importance that these constitutional values are instilled among the younger generation, and for this, strategies and policies must be developed to incorporate them into the Indian educational curriculum. This should be prioritized, and schools and colleges must ensure the effective implementation of these principles. Additionally, rules should be established to guarantee that these virtues are ingrained in the youth, shaping responsible and conscientious citizens of the future.

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P₃ of Effective Teaching - Learning: ICT Integration, Gagne's Events of Instruction, and Kirkpatrick's Model of Evaluation

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Abstract

The integration of Information and Communication Technology (ICT) in education has revolutionized the teaching and learning processes, offering immense potential benefits. This study explores the realm of integrated ICT education, focusing on the use of Gagne's Nine Events of Instruction and Kirkpatrick's Model of Evaluation. By scrutinizing these fundamental instructional design principles and evaluation frameworks, this research assesses how effectively and efficiently technology integration can enhance the realms of teaching, learning, and assessment in educational settings. Through a meticulous examination of the existing literature, this study sought to uncover strategies for optimizing ICT integration to enrich educational outcomes. The results of this study hold the potential to offer valuable insights and recommendations aimed at advancing the quality of ICT-integrated educational practices, thereby contributing to the continual improvement of educational experiences for both students and educators.

Keywords: Evaluation, ICT, Instruction, Integration, Quality.

Introduction

Quality in ICT-integrated education refers to the effective and efficient use of technology to augment teaching and learning. It involves the appropriate selection and use of technology, tools and resources, and the development of digital literacy skills among students and teachers. Quality additionally means that ICT is used to support and enhance the curriculum, rather than being the focus of instruction. It should be integrated seamlessly into teaching and learning activities and used to create meaningful and authentic learning experiences for students (Hassan &

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Mirza, 2021). Despite its potential benefits, several challenges and factors affect the quality of ICT-integrated education. This study aims to discuss these challenges and factors in detail, providing insights on how they can be addressed to ensure that ICT-integrated education is of high quality and effectiveness. It also explores integrated ICT education, focusing on utilization of Gagne's Nine Events of Instruction and Kirkpatrick's Model of Evaluation. The quality of ICT-integrated education is dependent upon several factors, such as the quality of technology infrastructure, ease of use of digital resources, pedagogical approaches, teacher training, and curriculum (Bati & Workneh, 2021).

Importance of ICT-Integrated Education

ICT-integrated education is crucial for ensuring increased student interest, engagement, and academic performance while also assisting students in acquiring the digital literacy skills necessary for success in the modern world.

To deliver ICT-integrated education of the highest quality, it requires careful planning, ongoing professional development, and the right use of technology to complement the curriculum and learning objectives. The investigators ensure that ICT is used in a way that improves teaching and learning and positions students for a successful future by adhering to best practices (Bati & Workneh, 2021).

In recent years, ICT integration in education has gained popularity. The integration of ICT substantially improves student learning, engagement, motivation, etc. However, the efficiency of ICT-integrated education depends on its quality. ICT integration enhances engagement and accessibility during teaching-learning activities, Gagne's Events ensure systematic instructional design, and Kirkpatrick's model evaluates program effectiveness. The proposed model enhances student engagement and motivation; improves instructional design and delivery; measurable learning outcomes and ROI; data-driven decision-making and increases teacher confidence etc. Therefore, the P3 Model integrates Information and Communication Technology, Gagne's Nine Events of Instruction, and Kirkpatrick's Four-Level Evaluation Model to create a comprehensive framework for effective instructional and learning activities, necessitates for 21st-century education, fostering innovative teaching practices and exceptional learning experiences. Nonetheless, in the present context P3 Model offers a holistic approach to teaching and learning by leveraging technology, a systematic instructional design, and comprehensive evaluation. This framework invigorates educators to optimize instructional effectiveness, improve student outcomes, and demonstrate measurable impacts.

This study intended to focus on three pillars of teaching-learning through the quality of integration of ICT by revisiting Gagne's nine events of instruction and Kirkpatrick's method of evaluation and entitled it as 'P₃ of Effective Teaching - learning: Gagne's Instruction, Kirkpatrick's Evaluation, and ICT Integration'.

Research Questions

The investigation is intended to search for answers to the following.

- Do the factors and challenges affect the quality of ICT-integrated education in relation to instruction and evaluation?
- Does integrating ICT in instruction and evaluation leverage teaching-learning activities?

Objectives of the Study

- To study the factors and challenges that affects the quality of ICT-integrated education in relation to instruction and assessment.
- To explore the realm of integrated ICT education, focusing on the use of Gagne's Nine Events of Instruction and Kirkpatrick's Model of Evaluation.

Methodology

The study is descriptive. The required data were gathered from various articles, books, journals, and theses published in the area of Information and Communication Technology, Gagne's Nine Events of Instruction, and Kirkpatrick's Model of Evaluation from the databases JSTORE, Web of Science (WoS), Wiley and Google scholar to study the objectives. The data collected for the period 2005 to July 2024 as NCF 2005 recommends the implementation of integration of ICT in the teaching-learning process.

Discussion

Factors Affecting the Quality of ICT-Integrated Education

Ertmer and Ottenbreit-Leftwich (2013) highlighted the significance of teacher proficiency when using ICT for educational objectives. Effective training and professional development opportunities for teachers can improve the quality of ICT-integrated education, while Brun & Hinostroza (2014) discussed the "importance of the availability of technology resources and a sufficient ICT infrastructure". Anderson and Dron (2011) explored the significance of educational techniques in ICT-integrated education in depth. Learning outcomes can be significantly affected by the choice of instructional tactics. Lim (2007) discussed how the efficiency of ICT integration was highly impacted by teacher training and ICT skill proficiency.

Lu et al. (2015) emphasized the importance of the availability of ICT infrastructure and fair access to technology because unequal access may worsen education gaps.

Onwuagboke et al., (2015) argued that a carefully thought-out curriculum that supported educational objectives was necessary for effective ICT integration. ICT should supplement conventional teaching strategies and, not replace them. Zweekhorst & Maas (2015), suggested that when used imaginatively, ICT resources can increase student involvement. Online chats, gamification, and interactive multimedia were a few techniques that improved the learning processes.

The quality of ICT-integrated education is affected by several important elements and difficulties highlighted in this literature review. The success of ICT integration is significantly influenced by teacher competency, infrastructure, pedagogical approaches, technological obstacles, digital literacy, and a pedagogical shift. Further Infrastructure, curriculum design, teacher preparation, and student participation impact the quality of ICT-integrated education.

Challenges in ICT-Integrated Education

Ghavifekr (2016) examined technical challenges such as network and program compatibility, which may hamper the usefulness of ICT in education where as Sarwat et al., (2023) examined “the concept of digital literacy and its effect on the caliber of ICT-integrated education”. Both teachers and students must be digitally literate.

Onwuagboke et al., (2015) presented “a framework for technological pedagogical content knowledge (TPACK)”. Transitioning from conventional techniques to ICT-integrated approaches can be difficult. Gorski (2005) noted that discrepancies remained in accessing technology and the internet, which contributed to the digital divide. For educational equity, this gap must be filled.

McGrath (2012) pointed out that changes in teaching strategies were frequently necessary for ICT implementation. Education professionals’ resistance to change can be a major obstacle. Richardson (2011) noted that the learning process may be hindered by technical obstacles such as system breakdowns, connectivity problems, and program compatibility whereas Hassan & Mirza (2021) emphasized that ICT-integrated education’s top priorities include protecting student information and guaranteeing online safety.

However, for successful development and effective implementation of ICT-integrated education, difficulties with the digital divide, pedagogical changes, technical problems, and privacy must be addressed. This assessment lays the groundwork for future investigations in the rapidly changing field of ICT in education.

Benefits of Quality ICT-Integrated Education

Both students and teachers can benefit greatly from the proper and efficient integration of ICT. It can increase students’ motivation, engagement, and academic performance. It can also help pupils develop the digital literacy skills they need to succeed in the twenty-first century. High-quality ICT-integrated education can help teachers deliver lessons more effectively and efficiently. It can optimise the opportunities for cooperation between teachers and students, formative assessment, and differentiated instruction. In addition, it can also assist teachers with emerging technologies and trends in education (Mir, 2019).

Best Practices for Achieving Quality ICT-Integrated Education

It is crucial to use best practices to deliver ICT-integrated education of the highest calibre. In addition to ensuring instructors’ ongoing professional development, these

include giving them access to technology and dependable internet connectivity. To ensure that technology is used to complement the curriculum and learning objectives, it is crucial to properly plan and coordinate its use. Other recommended practices include giving students opportunities for collaboration and creativity, involving them in the technology integration process, and employing technology to tailor each student's learning experiences (Brun & Hinostroza 2014).

Integration of ICT and Gagne's nine Events of Instruction

Gagne's nine Steps of Instruction is a model developed by Robert Gagne, a prominent educational psychologist, to design effective instructional materials. The following steps provide a systematic approach to creating instruction that is conducive to learning and helps learners acquire new knowledge and skills (Naidoo, Akhras, & Banerjee, 2020).

Gain attention: This step is crucial in ICT-integrated education because, it enables educators to capture students' attention and motivate them to learn (Gagne, 1985). Using multimedia resources, interactive simulations, and real-world examples, educators can stimulate students' interest and curiosity, making complex ICT concepts more engaging and accessible (Bati & Workneh 2021). This initial step sets the stage for effective learning because "students are more likely to invest time and effort in learning when they are interested and motivated" (Gorski, 2005). By incorporating attention-grabbing ICT-based activities, educators can create a learner-centered environment that fosters active learning, collaboration, and critical thinking (Koehler and Mishra 2009). Some technological tools & software that help students gain attention, such as multimedia presentations (e.g., Powtoon, Prezi), Interactive simulations (e.g., PhET Interactive Simulations), and Gamification tools (e.g., Kahoot, Quizlet) may be used.

Inform learners of the objectives: This enables students to understand the purpose and scope of the lesson, fostering a sense of direction and focus (Gagne, 1985). In ICT-integrated education, communicating learning objectives helps students understand how to navigate digital tools and resources, ensuring that they stay on track and achieve desired learning outcomes (Koehler & Mishra, 2009). By explicitly stating their objectives, educators can also help students connect to new information, facilitate meaningful learning, and promote the transmission of learning to the required situations. Well-defined objectives guide educators in selecting appropriate ICT resources and activities, ensuring alignment with learning goals, and promoting effective integration of technology (Bati & Workneh 2021). Some tools are suggested here that help in this step viz., Learning Management Systems like Canvas, Blackboard, or Moodle, Clear instructions, and learning objectives in digital documents (e.g., Google Docs, Microsoft Word)

Stimulate recall of prior knowledge: This is also a critical step in Gagne's model because it helps to make learning meaningful. In ICT-integrated education, this step is vital because, it enables learners to build upon their existing knowledge of ICT concepts and skills (Koehler & Mishra, 2009), make connections between theoretical concepts and practical applications (Bati & Workneh 2021), and develop a deeper understanding of

ICT-related topics and concepts. By stimulating the recall of prior knowledge, educators can help learners activate, their existing schema and mental models, facilitate the integration of new information (Anderson & Dron 2011), and develop a stronger foundation for new learning, leading to improved retention and recall. In ICT-integrated education, stimulating the recall of prior knowledge is essential for developing learners' metacognition, enhancing learners' ability to apply ICT concepts to real-life situations, and fostering learners' creativity and innovation in using ICT tools and resources. Some software and tools suggested for integration of ICT for stimulating recall of prior knowledge are Quizlets and assessments (e.g., Quizlet, Kahoot), Concept mapping tools (e.g., Mind Meister, Coggle), Collaborative note-taking tools (e.g., Google Docs, Microsoft OneNote), etc.

Present the content: This enables learners to acquire new knowledge and skills in ICT-integrated education. This step involves delivering instructional content through various media (Gagne, 1985). In ICT-integrated education, presenting content is essential for delivering high-quality instructional content that aligns with learning objectives (Koehler & Mishra, 2009), utilizing multimedia resources to enhance learner engagement and understanding, and providing opportunities for learners to explore and interact with ICT tools and resources (Bati & Workneh 2021). By effectively presenting the content, educators can facilitate understanding of complex ICT concepts and skills, support 21st-century skills, and encourage learners to apply ICT knowledge to real-world scenarios. In ICT-integrated education, presenting content is critical for developing learners' digital literacy and ICT skills, enhancing learners' understanding of ICT-related topics and concepts, and fostering learners' creativity and innovation in using ICT tools and resources. Interactive video lectures, Virtual labs and simulations (e.g., Labster, Simulation Studio), Interactive eBooks, and digital textbooks (e.g., VitalSource, McGraw-Hill Connect) help to present more interactive content.

Provide guidance: This step involves offering learners support and direction in engaging with ICT tools and resources (Gagne, 1985). In ICT-integrated education, providing guidance is essential to help learners develop their digital literacy and ICT skills (Koehler & Mishra, 2009), and support learners' effective use of ICT tools and resources (Bati & Workneh 2021). It also facilitates learners' understanding of complex ICT concepts and skills (Wang, 2008). By providing guidance, educators can offer personalized support to learners, address their individual needs and learning styles, promote autonomy and self-directed learning, and foster a collaborative learning environment in which they can share knowledge and expertise. In ICT-integrated education, providing guidance is vital for ensuring learners' successful integration of ICT skills and knowledge, promoting 21st-century skills in using ICT tools and resources. Here are some suggested tools and software for this process viz., interactive discussion forums (e.g., Blackboard, Canvas), Collaborative project management tools (e.g., Trello, Asana), and real-time feedback tools (e.g., PollEverywhere, Top Hat)

Elicit performance: This step enables learners to demonstrate their knowledge and skills in ICT-integrated education. This step involves asking learners to perform tasks, answer

questions, or complete assignments that assess their understanding of ICT concepts and skills (Gagne, 1985). In ICT-integrated education, eliciting performance is essential for assessing learners' understanding of ICT concepts and skills (Koehler & Mishra, 2009). In ICT-integrated education, eliciting performance is vital for ensuring learners' mastery of ICT skills and knowledge, preparing learners for real-world applications and problem-solving, and fostering learners' critical thinking and creativity in using ICT tools and resources. Suggested tools are Online quizzes and assessments (e.g., Quizlet, Kahoot), Interactive simulations and games (e.g., PhET Interactive Simulations, Duolingo), and Project-based learning platforms (e.g., GitHub, Google Workspace) to assist in eliciting performance.

Provide feedback: This enables learners to understand their strengths and weaknesses and adjust their learning accordingly. In ICT-integrated education, providing feedback is essential for helping learners understand their progress and achievements in ICT skills and knowledge, encouraging learners to reflect on their learning, and setting goals for improvement (Koehler & Mishra, 2009). By providing feedback, educators can use assessment data to inform instruction and adjust teaching strategies, provide learners with guidance and support to improve their performance and foster a growth mindset. In ICT-integrated education, providing feedback is vital for ensuring learners' mastery of ICT skills and knowledge, preparing learners for real-world applications and problem-solving, and fostering learners' critical thinking and creativity in using ICT tools and resources. For better feedback, there are some suggested tools and software viz., automated grading and feedback tools (e.g., Gradescope, Turnitin), Peer review and feedback tools (e.g., PeerMark, Feedback Studio), and real-time feedback tools (e.g., PollEverywhere, Top Hat).

Assess performance: This step enables educators to evaluate learners' skills and knowledge. In ICT-integrated education, assessing performance is essential for evaluating learners' understanding of concepts and skills (Koehler & Mishra, 2009), identifying areas where learners need additional support or review, and instructing and adjusting teaching strategies (Bati & Workneh 2021). By assessing performance, educators can use a variety of strategies, such as formative, summative, and self-assessment, to evaluate learners' ability to apply ICT knowledge to real-world scenarios and provide learners with feedback and guidance to improve their performance. In ICT-integrated education, assessing performance is vital for ensuring learners' mastery of skills and knowledge, preparing learners for real-world applications and problem-solving, and fostering learners' critical thinking and creativity using ICT tools and resources. Online assessment and evaluation tools (e.g., Quizlet, Kahoot), Learning analytics platforms (e.g., Canvas, Blackboard), and Rubric-based assessment tools (e.g., Rubric-O-Matic, Assessment Rubrics) help assess learners' performance.

Enhance retention and transfer: This step encourages learners to apply what they have learned to real-world situations, which helps reinforce their understanding and retention of knowledge (Koehler & Mishra, 2009). Further, it fosters critical thinking by providing opportunities for learners to use ICT tools and resources to solve problems

and complete tasks, which helps to develop critical thinking and creativity. Enhancing retention and transfer can be tailored to individual learners' needs and learning styles, which helps create a more personalized and effective learning experience (Bati & Workneh 2021). Learners work together to apply acquired skills and knowledge in enhancing retention, thereby promoting collaboration and communication skills (Gagne, 1985). Moreover, it supports continuous learning by enhancing retention and transfer and helps learners continue learning by integrating ICT during the learning process (Gagne, 1985). Spaced repetition tools (e.g., Anki, Quizlet), Gamification and point systems (e.g., Classcraft, ClassDojo), and Collaborative review and practice tools (e.g., Google Docs, Microsoft OneNote) help enhance retention and transfer knowledge among learners.

These nine steps provide a systematic approach to designing effective instructional materials that promote learning and retention, which can be enhanced by the integration of ICT. By following these steps, instructional designers and educators can create engaging and effective instruction that facilitates learners' acquisition of new knowledge and skills in an effective manner (Tambi et al., 2018).

Integration of ICT and Kirkpatrick's Model of Evaluation

Kirkpatrick's Model, often known as Kirkpatrick's Four Levels of Evaluation, is a commonly used framework for assessing the efficacy of training and educational initiatives. The approach, created by Donald Kirkpatrick in the 1950s, has four stages that assess various aspects of training results (Trivino et al., 2011).

Level 1: Reaction - provides feedback on the effectiveness of instruction, which helps educators identify areas for improvement. It also evaluates learner engagement, that is, it evaluates how learners respond to instruction, which helps educators determine whether learners are engaged and motivated. This level also assesses the learning environment, which includes the ICT tools and resources used to ensure that they support learner engagement and achievement. Improves Instructional Design by evaluating learner reactions, educators can improve the instructional design and delivery of ICT-integrated education to better meet learner needs (Kirkpatrick, 1994). Survey tools (Survey Monkey, Google Forms) to collect feedback, Polling tools (PollEverywhere, Top Hat) to gauge reactions, and social media analytics (Hootsuite, Sprout Social) to monitor sentiment may be used.

Level 2: Learning – At this level, Learning evaluates the knowledge and skills learners acquire during teaching-learning, ensuring that they understand and can apply what they have learned. “Enhancing learner engagement helps educators identify strategies to increase learner engagement and motivation, leading to improved learning outcomes” (Kirkpatrick 1994). Quizzes and assessments (e.g., Quizlet, Kahoot) to measure knowledge, learning management systems (LMS) like Canvas, Blackboard, or Moodle to track progress; and online course evaluation tools (e.g., CourseEval, EvaluationKit) assist to assess learning outcomes.

Level 3: Behavior-Evaluate Application. Behavior evaluates how learners apply what they have learned to real-world scenarios, ensuring that they can demonstrate their knowledge and skills in practical situations. It also helps to assess the Transfer of Learning; that is the extent to which learners can transfer their learning to new contexts and situations, a critical aspect of education. Further, it informs the Instructional Design by evaluating learner behaviour, educators can refine instructional design and delivery to support the application of learning better and promote transfer. “Enhancing learner autonomy, and behavior helps educators identify strategies to promote learner autonomy and self-directed learning, which are essential for effective ICT integrated education” (Kirkpatrick, 1994). Performance management software (Workboard, 15Five) to track behaviour changes, 360-degree feedback tools (Lighthouse, 15Five) to assess on-the-job performance, and sales or customer service software (Salesforce, Zendesk) was used to monitor behavioural changes.

Level 4: Results - Evaluation of the impact of teaching-learning on learner achievement, organizational performance, and broader social outcomes provides a comprehensive understanding of its effectiveness. Return on investment (ROI) is assessed by integrating ICT, helping educators and administrators make informed decisions about resource allocation. By evaluating the results, educators can inform strategic planning through resource allocation to optimize ICT-integrated education and achieve the desired outcomes. ICT tools viz., Business intelligence and analytics tools (e.g., Tableau, Power BI) may be employed to measure results, Key performance indicator (KPI) tracking software (e.g., Klipfolio, Geckoboard) to monitor outcomes, and ROI analysis tools (e.g., ROI Calculator, Training Evaluation Software) to calculate return on investment.

Conclusion

In conclusion, the quality of ICT-enhanced education is influenced by various factors, including technological infrastructure, digital resources, pedagogical techniques, teacher preparation, and curriculum. When these factors are adequately addressed, students can receive a top-notch education that prepares them for the challenges of the digital era. The effectiveness of ICT integration in education depends on a combination of these factors. When these factors are effectively addressed, ICT can become a potent tool for improving teaching and learning outcomes. Technology has transformed education by introducing innovative methods for effective teaching and learning. However, to significantly harness the potential of technology in education, it is essential to ensure that quality issues are addressed.

Gagne's nine events of instruction provide a systematic approach to designing effective instructional materials that promote teaching learning and retention, which can be enhanced by the integration of ICT tools and resources with the nine events of instruction. By incorporating these resources, educators can create engaging, interactive, and personalized learning environments that cater to diverse learning needs. This approach, which incorporates ICT, improves student learning outcomes, increases learner engagement, and develops essential skills for the technology-driven world. As education continues to advance in the 21st century, the synergy between ICT

and Gagne's Nine Events of Instruction can revolutionize teaching and learning, preparing students for success in an increasingly complex and interconnected world.

The integration of ICT through various tools can optimize Kirkpatrick's four levels of evaluation, which assess the learning environment, learner engagement, and motivation, promoting learner autonomy and self-directed learning. By using the four levels of evaluation—Reaction, Learning, Behavior, and Results—educators and trainers can systematically measure the impact of teaching-learning on learners' outcomes. This study demonstrated the potential of Kirkpatrick's model in evaluating the efficacy of ICT-based training initiatives, providing insights into the cognitive, affective, and behavioural changes that occur as a result of such programs. As technology continues to evolve and play an increasingly important role in education, the integration of ICT and Kirkpatrick's Model of Evaluation remains a valuable tool for ensuring that teaching-learning initiatives meet their intended objectives and yield meaningful results. By implementing this framework, educators and trainers can optimize their integrated ICT programs, ultimately enhancing the learning experience and fostering a more effective and efficient educational environment.

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