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Empowering Education: Realizing The Goals of NEP 2020

Fazlani Aishabai & Haji Abdul Latif Charitable Trust's

AISHABAI COLLEGE OF EDUCATION,

Municipal School Building, J. J Hospital Compound, Gate no. 14,
Building, Byculla, Mumbai, Maharashtra 400008

(Affiliated to SNDT Women's University)

EDUCATE, ELEVATE, EMPOWER:

Aishabai's National Conference on Learning – 2024
3E's ANCL 2024

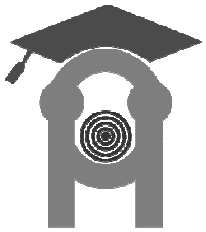
On

Empowering Education: Realizing The Goals of NEP 2020

16th April 2024

Conference Director
&
Chief Editor

Dr. Shumaila Patrawala Saif Siddiqui



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From Chief Patron's & Chairman Desk

Dr. Abdul Kadeer Fazlani

It is with great pleasure and anticipation that we welcome you to the Educate, Elevate, Empower: Aishabai's National Conference on Learning – 2024, themed "Empowering Education: Realizing The Goals of NEP 2020." As we gather for the 3E's ANCL 2024, we are reminded of the significant strides our educational community has made in embracing the transformative vision set forth by the National Education Policy 2020.

The NEP 2020 provides a robust framework for fostering holistic, inclusive, and multidisciplinary education that is designed to meet the needs of the 21st century. It emphasizes critical thinking, creativity, and lifelong learning, ensuring that our educational practices are aligned with global standards while remaining deeply rooted in our rich cultural heritage.

Our conference, under the guiding principles of Educate, Elevate, and Empower, served as a platform to explore innovative strategies and share best practices for achieving these ambitious goals. It was a unique opportunity for educators, policymakers, researchers, and thought leaders to engage in meaningful dialogue, collaborate on ground breaking ideas, and pave the way for the future of education in our nation.

As we delved into the various aspects of the NEP 2020, we focused on its core objectives: transforming curriculum and pedagogy, integrating technology in education, promoting equity and inclusion, and enhancing teacher education.

Together, we aim to foster an environment where every learner can thrive, equipped with the skills and knowledge necessary to succeed in an ever-changing world.

We extend our heartfelt gratitude to all participants, speakers, and organizers for their dedication and commitment to the cause of education. Your contributions are invaluable in shaping the educational landscape of our country.

Let us move forward with the shared vision of educating, elevating, and empowering every individual, ensuring that the goals of the NEP 2020 are not only realized but also surpassed. Together, we can create an educational system that is not only a beacon of excellence but also a pillar of equitable growth and sustainable development.

Welcome to 3E's ANCL 2024. Let us inspire and be inspired.

Warm regards,

Dr. Abdul Kadeer Fazlani
Chief Patron & Chairman

Message from Conference Director,
Convener And Chief Editor

Dr. Shumaila Patrawala Saif Siddiqui

Dear Esteemed Colleagues and Visionaries,

It is with immense pride and excitement that we reflect on the resounding success of the Aishabai's National Conference on Learning – 2024, aptly themed "Empowering Education: Realizing the Goals of NEP 2020." The 3E's ANCL 2024 has not only been a testament to our collective commitment to educational excellence but also a beacon of inspiration for future endeavors.

This year's conference underscored the pivotal role of the National Education Policy 2020 in shaping the future of our educational landscape. The NEP 2020's emphasis on holistic, inclusive, and multidisciplinary learning resonates deeply with our mission to educate, elevate, and empower every learner. Our gathering brought together a diverse and dynamic array of educators, policymakers, researchers, and thought leaders, each contributing their unique perspectives and insights.

The theme of Empowering Education guided us through profound discussions, innovative strategies, and collaborative efforts aimed at transforming our educational practices. We delved into the intricacies of curriculum and pedagogy reform, the integration of technology, the promotion of equity and inclusion, and the enhancement of teacher education. These discussions have paved the way for actionable solutions and groundbreaking ideas that will drive the realization of NEP 2020's ambitious goals.

As we move forward, the spirit of 3E's ANCL will continue to thrive, evolving into an annual tradition that fosters continuous improvement and innovation in education. Each year, we will gather to celebrate our achievements, confront our challenges, and chart new paths towards a brighter educational future.

The enthusiasm and dedication displayed by everyone involved have been truly inspiring. Your contributions have not only enriched this conference but have also laid a

strong foundation for future endeavors. It is through such collaborative efforts that we can create an educational system that is not only efficient but also equitable and inclusive.

Our heartfelt gratitude goes out to all participants, speakers, and organizers who made this conference a resounding success. Your passion, dedication, and unwavering commitment to the cause of education have been truly inspiring.

Let us carry the momentum of this conference into the future, steadfast in our resolve to educate, elevate, and empower every individual. Together, we will ensure that the vision of NEP 2020 not only comes to fruition but also sets a global standard of excellence and inclusivity in education.

Welcome to the future of education with 3E's ANCL Thank you once again for your invaluable participation and support.

Let us move forward with renewed vigor and determination to Educate, Elevate, and Empower and continue to inspire and be inspired, year after year.

Warm regards,

Dr. Shumaila Patrawala Saif Siddiqui
Principal,
Fazlani Aishabai & Haji Abdul Latif Charitable Trust's
Aishabai College of Education,
(Affiliated to SNDT Women's University)

Message from Organizing Secretary‘s

Dr. Nafisa Roopawalla

Warm greetings!!!

I want to express my gratitude to each and every one of you for coming to this incredible event, "Educate, Elevate, Empower: Aishaba's National Conference on learning-2024," and for contributing your knowledge. I am extremely proud of the college's accomplishments, including the publication of a research study in the peer-reviewed, refereed journal with the ISSN of 2278-5639VI. The sixth special issue of Volume XIIIth of the Global Online Electronic International Interdisciplinary Research Journal (GOEIIRJ) was released. As suggested by the title, this study magazine provides an overview of the diversity and breadth of our professors and students. Our mission is to provide the greatest education possible through 360-degree development, with a particular focus on empowering girls.

Eminent key note speakers presented their view in different perspectives. I hope that teachers and professionals who are interested in this subject will benefit from the Conference Proceedings as a comprehensive compilation of existing knowledge and experience.

In the end, the success of the conference depends on the many people who have worked with us to plan and organize this technical program. I'd like to congratulate the students whose papers are published in this issue of the journal.

Eventually, I would like to thank our Chairman Sir, Trustees, Principal for their guidance, support and motivation for the success of this National Conference on NEP 2020.

Dr. Nafisa Roopawalla

Organizing Secretary

INDEX

Sr. No.	Author Name	Title	Page No.
1	Dr. Cerena Aurin D'Cunha	Towards Excellence: Exploring International Best Practices and Perspectives on Educational Reform	01 to 09
2	Mahlaqa Sayed	Upholding the Importance of Experiential Learning in the Light of Existing Theories and Practices in the 21st Century	10 to 15
3	Shaikh Mumtaz Begum Salahuddin	To Study The Attitude Of The Secondary Students Towards Project-Based Learning Approaches	16 to 20
4	Dr. Madhuri Bendale	Effectiveness of learning resources developed using ICT Tools to facilitate learning while curriculum transaction	21 to 27
5	Sarah. Kachwala	Impact of Bilingualism in Teaching & Learning of English Language in Class 8th	28 to 35
6	Mohd Noor Alam And Dr. Aerum Khan	Teachers' Perspectives on Cloud-Based Platforms in Teaching Learning Process	36 to 43
7	Dr. Charu Varma And Dr. Saroj Malik And Khushnuda Bano	Principals' Perceptions and Feedback on Training for the School Leadership Development Program (SLDP): An Analysis of Improved Skills and Implications	44 to 60
8	Mrs. Joya Vrushal Chaudhari	Recommendations And Implementation Of Teacher Education In Nep- 2020	61 to 65
9	Dr. Aerum Khan	Flipped Learning: A Pedagogical Approach of Modern-Day Classrooms	66 to 74

10	Owaise Jan Kirmani And Altaf Ahmad Sheikh And Dr. Manzoor Ahmad Rather	Aligning the National Education Policy 2020 with Sustainable Development Goals: A Pathway to Inclusive and Quality Education In India	75 to 87
11	Dr. Sandhya Milind Khedekar	NEP 2020: Transforming Education through AI Integration	88 to 89
12	Dr. M. H. Mohamed Rafiq	Teaching English for special / Specific purposes	90 to 93
13	Ms. Rashmi Raja And Ms. Mitali Sankhe	The Transformative Potential of Digital Learning Platforms and Tools in the 21st Century Classroom	94 to 99
14	Dr. Aasia Ahmed Radiowala	Study of opportunities and challenges of Open-SourceSoftware in the Education system	100 to 110
15	Md. Ashique Husain And Prof. Jasim Ahmad And Dr. Aerum Khan	MOODLE: A Learning Management System	111 to 116
16	Ambrin Khanam And Jasim Ahmad	Indian Knowledge System and Scientific Literacy: An Analysis of NEP 2020 and NCFSE 2023	117 to 128
17	Dr. Shumaila Saif Siddiqui	Empowering Educators: Embracing the Transition from Guide to Guru for Holistic Learning	129 to 135
18	Dr. Anamika Singh And Mansi Sharma And Soumya Priyadarsani Panigrahi And Dr. Deepika Malhotra And Dr. Anjul Sharma And Dr. Aisha Islam	A Comprehensive Study of the Zero Classroom Wholistic Program	136 to 142
19	Ali Asgar And Shabir Ahmed Wani And Khalid waquair abid And Ihsan Ullah Lone	NEP 2020 and Inclusive Education: Making it Happen through Open Distance and Online Learning	143 to 151

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Towards Excellence: Exploring International Best Practices and Perspectives on Educational Reform

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Abstract:

In a rapid era of globalization, the pursuit of educational excellence surpasses national frontiers. This research explores the varied landscape of educational restructuring initiatives traversing different nations, targeting to identify international best practices and obtain insights into the diverse perspectives on educational revolution.

Drawing upon the review of literature from a wide array of sources, including scholarly articles, reports, and policy documents this study aims at synthesizing the findings of international Best Practices. By scrutinising case studies and comparing analyses from various regions, it throws light upon the methodologies to educational reform embraced by different nations.

Key themes explored in the research include curriculum development, pedagogic innovations, assessment strategies, teacher training, and the integration of technology in education. Through the international experience and research, the study focuses on discussing the challenges, accomplishments, etc. in implementing the best practices and reforms to enhance the quality of education.

Further the study delves into various factors shaping the educational reforms and highlights the importance of innovative practices and diverse perspectives and strategies that offervaluedcomprehensions for policymakers, educators, and researchers pursuing to navigate impact global change in education.

Finally, this research contributes to fostering exchange of ideas regarding the educational Best Practices and avenues for cross-cultural understanding.

Keywords: International Best Practices, Educational Reform, research literature review

Introduction:

In the era of globalization, rapid advancements in technology, and changing social requirements, the landscape of education is experiencing profound global transformations. The 21st century which is characterized by massive transformations in all sectors, highlight the pressing need for adaptation of educational systems to counter the increasing demands of a swiftly evolving world. Educational systems are ever more tasked with preparing students for a compound, interconnected world, where unusual challenges arise with unparalleled frequency. In reaction to these, educational reform has become a necessity, as countries seek to warrant that their

education systems are fortified to enable excellence, equity, and adaptability.

The quest of excellence in education is not limited by national boundaries; rather, it is a mutual endeavor that surpasses geographical frontiers and cultural dissimilarities. Exploration of the successful strategies and innovative approaches employed by various institutions could fuel insights gained from global contexts and further inspire efforts to enhance the quality of education worldwide.Through a methodical review of prevailing literature, case studies, and experiential research, this research paper aims to explicate the common themes, effective strategies, and areas that portray international efforts in the direction of educational excellence.

As we embark on this journey of investigation, this research paper will serve as a valued resource for policymakers, educators, and stakeholders dedicated to enhancing educational outcomes and nurturing excellence in education on aninternational scale. By fusing insights from varied sources and viewpoints, this research aspires to contribute to the ongoing efforts in the direction ofconstructing more inclusive, open, and effective education system for the benefit of present and future generations.

There are various dimensions of educational reform, including curriculum development, pedagogical approaches, assessment strategies, teacher professional development, and the integration of technology in education. This research paper aims to focus on identifying common themes and patterns regarding educational best practices around the world, identifying and examining prevalent successful best practices from contemporary point of view, comprehending the cultural and contextual factors to sustain the practices, assessing the challenges and opportunities thus contributing to policy changes and knowledge exchange.

Methodology and Scope of the study:

The researcher selected a qualitative research methodology for this study and employed systematic approach to conceptualize and review the related literature exploring international best practices and perspectives on reforms in education.The literature review process followed a systematic approach identifying, selecting, and analysing literature from relevant sourceslike academic journals, reports, and other scholarly publications.

The researcher began by defining the inclusion criteria to include specific key words for focussing upon specific international best practices and perspectives in educational reform viz. ‘curriculum development’, ‘pedagogical approaches’, ‘assessment strategies’, ‘teacher professional development’, and the ‘integration of technology in education’.

In the second step, a comprehensive literature search was conducted using academic databases using Boolean operators to retrieve articles, case studies, published reports etc. In the next step, screening and selection of retrieved literature was done on the basis of relevance to the research topic and the articles which met the criteria were selected to be included in the study. Duplicative research articles were excluded. After this, relevant data was extracted for analysis. The extracted data was then synthesized and analysed to detect common patterns and themes and was critically appraised to synthesize the findings and interpretation of results.

Aim: Toexplore International Best Practices and Perspectives on Educational Reform.

Objectives of the Study:

1. To identify common themes and patterns evolving from international best practices in education by analysing varied approaches adopted by different nations.
2. To examine the effective strategies employed in educational reforms across different global contexts.
3. To provide insights into cultural and contextual factors which sustain the Best Practices in educational reform.
4. To assess the challenges and opportunities related to the educational reform on an international level.
5. To contribute to knowledge exchange and multicultural discourse in the arena of educational reform.

Review of Relevant Literature on International Best Practices:

The literature review in this section is classified into five different categories focussing upon specific international best practices and perspectives in educational reform viz. 'curriculum development', 'pedagogical approaches', 'assessment strategies', 'teacher professional development', and the 'integration of technology in education' as follows:

Literature on Best Practices related to Curriculum Development:

Margot Schumacher (2012) proposed curriculum design which is objective driven wherein he proposed experiential learning activities and electronic-learning which is integrated in the learning environment; resulting in overall improved student gratification, enjoyment, and assessment result. Curriculum objectives assist as the foundation for curriculum design, which help align the key concepts in lecture and assignment activities. Sketchy lecture notes are accompanied by précised outcomes at the culmination of the week, boosting student learning experiences. The usage of e-learning situations complement the learning procedures with online deliberations, student's portfolio managing, and assignment submissions and evaluation activities.[1]

Aaisha Haquea, Solomon Arulraj David b (2022) studied the barriers to effective curriculum implementation and provided remedies for the same in their paper titled 'Effective curriculum implementation for optimal teaching and learning experience: a study from a private school in Dubai' They identified and divided the barriers for effective curriculum transaction in 3 categories viz. the students, the teachers and the management. The reforms they suggested were as follows: in order to have a high student achievement ratio, the management must work on policy framework to ensure effective learner engagement. Teachers must be involved in meaningful professional training, ensure high teacher turnover, devise instructional strategies, and involve teachers in curriculum building processes. Management should ensure transparent feedback systems and ensure intrinsic motivation. Schools should include stakeholders in ensuring reformed vision, thus ensuring timely reformed curriculum as per the needs to ensure value added curriculum.[2]

Literature on Best Practices related to Pedagogical Approaches:

Salhab, Reham & Hashaykeh, Shireen & Abd-Rabo, Aysha & Khlaif, Zuheir & Salha, Soheil & Affouneh, Saida conducted a research to identify the best practices employed by the schools in Palestine during COVID-19 pandemic. The results show that teachers used numerous free tools such as Google Classroom and Zoom. Teachers explored and used new instructional strategies to involve their students and sustain them fervently during the COVID-19 crisis. Moreover, teachers were dedicated and motivated to self-learn and exchange experiences with colleagues.[3]

Dr. Zaffar Ahmad Nadaf (2020) in his qualitative research envisaged modern practices to ensure catering to students' differential needs. The paper reflected on teachers' sound and suitable decision-making skills when selecting teaching strategies. The paper focused on varied strategies that could be used in different circumstances to ensure optimum learning. The paper discussed the strategies of employing cooperative learning as an effective teaching procedure that focusses on positive interdependence, face-to-face interaction, individual and group accountability, interpersonal and social group skills and group processing.[4]

Alshuraiaan and Almefleh (2023) explored the pedagogical approaches and strategies to enhance English Language Learning in Kuwait. The study envisaged the need to employ strategies like Communicative Language teaching (CLT), Task Based Learning, Learner- Centered Approaches, using technological tools in English Language Learning, employing Computer-Assisted Language Learning, using Online Resources and Platforms, Task-Based Communicative Approaches etc. to enhance the quality of English language learning.[5]

Herodotou Christothea, Sharples Mike, Gaved Mark, Kukulska-Hulme Agnes, Rienties Bart, Scanlon Eileen, Whitelock Denise (2019) in their paper discussed six approaches to teaching and learning and stressed the significance of transformation of future educational practices. The six approaches being 'Formative analytics' which is assisting the student to reflect on whatever is learned, what can be enhanced, which objectives can be attained, and how to move onward. 'Teachback' is a way for two or more persons to reveal that they are moving ahead to a common understanding of a composite topic.'Place-based learning' stems learning opportunities from indigenous community situations, which help learners attach abstract ideas from the classroom and textbooks with applied challenges encountered in their own neighbourhoods.'Learning with robots' might help educators to make available time for repetitive tasks, and offer scaffolding to pupils.'Learning with drones' is used to provide for exploration by augmenting students' competence to explore outdoor physical settings.'Citizen inquiry'defines ways that members can study by starting or joining shared inquiry-led scientific inquiries.[6]

Literature on Best Practices related to Assessment Strategies:

Nagowah & Nagowah (2009) underscored that assessment is a tacticintended at improving students` performance and the fundamentaladvantages of the valuation process are methodical and consistentevidence about learning. The educator can advance an assessment strategy for each pupil and the classroom, assessing pupils' learning styles and requirements, contributingdiverse

assessment methods and thus collectingvaried evidence of educational outcomes. Some of the strategies outlined by the researcher include Formative assessment, Summative assessment, Continuous assessment, Norm-directed assessment, Criterion-directed assessment, Subjective assessment, Objective assessment, Open book assessment, Practical assessment, Oral assessment, Situational assessment, Process assessment, Formal assessment, Informal assessment, Peer assessment and Self Assessment.[7]

Buzzetto-More & Alade, (2006)provided an insight into the geneses, evolution, and fundamental concepts of assessment and illustrates certain of the ways in which e-Learning aid in being a promising device for sustaining assessment goals and objectives.The study highlighted strategies which included online diagnostic tests, competitive simulations, rubric for evaluation, student dialogues, recorded presentation, and e-portfolios. It described the use of WebQuests, Simulations, Case Studies, student portfolios being employed for assessment as per situational and need based criteria.[8]

Hannah Kitchen, George Bethell, Elizabeth Fordham, Kirsteen Henderson and Richard Ruochen Li (2019) highlights Turkey's education system and its success stories in terms of outperforming school system. The suggests how assessment practices could more effectively support student achievement and thus provides recommendations for enhancement of teachers' assessment practices. The study suggests to employ practical tools like rubrics, diagnostic assessments, age-appropriate formative assessments to better report learning outcomes, standardized assessments to monitor learning like essays, experimentation, presentations, student portfolios, projects, group work, open-ended tests, problem based assignments etc. The study suggests School based Moderation Initiatives and improving teacher preparation to ensure effective classroom assessment. The study gives policy recommendations aiming at ensuring richer assessment resources and supports competency/ skill development.[9]

Literature on Best Practices related to Teacher Professional Development:

Dr. G. R. Angadi (2013) in his study highlighted the paradigm shift in knowledge society and focussed on need based professional development practices to sustain the contemporary needs. He focussed on models of teacher preparation given by Gaible and Burns (2005) viz. 1.Standardized Teacher Professional Development aiming at investigation of novel concepts and the demonstrating and modelling competency based skills. 2. Site-based Teacher Professional Development primarily focussing on the explicit, situational problems that teachers come across as they try to apply new methods in their classroom. 3. Self-directed Teacher Professional Development involves originating and planning their ownprofessional development, share resources and designs as well as deliberateupon challenges and resolutions.[10]

Desimone, L. M., & Garet, M. S. (2015). This paper deliberates upon the best practices in teachers' professional development (PD) in the United States. It describesconclusions from U.S. based researches that tested the five features, highlighting outcomes of arduous randomized controlled trials. Several insights aided to perfect the framework. Five features for PD are (a) changingpractical classroom behaviour is simpler than refining content mindfulness or inquiry-

oriented instruction techniques; (b) educators vary in response to the like PD; (c) PD is additionallyefficient when it is linked to classroom teaching; (d) leadership has a important role in motivatinginstructors to apply in the concepts and methods they acquired in the PD.[11]

Literature on Best Practices related to Integration of Technology in Education:

A study on Best Practices for Online Learning validated by Marzano Research (2023) suggested four best Practices to enable students reap highest benefits from online learning. Following are the best practices highlighted by the research: Best Practice 1: 30 minutes per week should be allotted for practicing using online programs by students. Best Practice 2: Dispense practice over numerous sittings, which consists of at least one session of 15 minutes or more. Best Practice 3: Inspire learners to set goals. Best Practice 4: Assign time period for self-reflection. Keeping to these strategies, it was noticed that students' interest and motivation to handle and learn online tools was increased.[12]

A literature study done by Johns Hopkins school of Education. Center for Research and Reform in Education (2020) highlight two prominent frameworks viz. Technological Pedagogical Content Knowledge (TPACK model)and Integrating Technology for Inquiry (NTeQ), for effective inclusion of technology in education. Further, eight best practices were proposed for integration of technology in classroom: Best Practice 1: Increase/ease differentiation and personalization- information on choosing software and apps that offer differentiated experiences by means of games and adaptive devices.Best practice 2: Avoidance of techno centric tactics to lesson planning- instructional methods instead of instructional media must be given prominence. Best practice 3: Incorporate computation thinking into day to day curriculum- age appropriate compute use promote critical thinking, problem solving, reasoning and cooperation skills.Best practice 4: Integrate collaborative learning prospects.Best practice 5: Stimulate inquiry-based knowledge- use technology to guide specific application and virtual simulation to promote STEM education. Best Practice 6: Select games and supplementary courses prudently.Best Practice 7: Strategically leveragewhat technology can provide. Best Practice 8: Ensure educators obtain suitable professional development.[13]

The article by Drexel University School of Education suggests ways to foster student learning, student engagement, catering to learning styles etc. by use of technology. The article points at judicial and age-appropriate integration of simple technologies like Power Point, educational apps like Kahoot etc. game based learning, internet researched homework assignments (via learning platforms like Blackboard, Brightspace, and Moodle) and online grading systems, Classroom Tablets, Listserv. The article also suggests implementation variations for different age groups.[14]

Results and Discussion:

1. **Common themes and patterns include:**

Student-Centered Approaches: Education highlights personalized learning paths, experiential undertakings, and tailored instruction to involve students and enhance understanding.

Integration of Technology: Technology integration provides personalized experiences, facilitates

collaboration, and develops 21st-century skills inlearners.

Professional Development: Continuing teacher training and sustenance are vital for implementation of effective instructional strategies and integration of technology in education.

Assessment for Learning: Assessment practices emphasize on formative assessment, continuous feedback, and diverse assessment methods to promote student engagement and improvement.

Collaboration and Stakeholder Engagement: Collaboration among stakeholdersfosters transparent communication and partnerships to address diverse needs to meet the challenges of the 21st century.

2. Effective strategies employed in educational reforms:

Objective-driven curriculum design incorporating experiential education and e-learning. Recognizing and addressing hurdles to curriculum implementation, involving stakeholders. Employing free tools and innovative strategies for sustained learning.Employing varied assessment methods affiliated with learning objectives.Providing continuing professional development for teachers, focussed on individualized, need-based training.Integrating technology through best practices like differentiated learning, collaboration, and inquiry-based methods. Applying age-appropriate technology integration and fostering student engagement through diverse digital tools and platforms.

3. Cultural and contextual factors sustaining Best Practices:

(1) Adapting curriculum design to support objectives, incorporate experiential learning, and use electronic platforms. (2) Address obstacles to curriculum implementation by involving stakeholders, encouraging teacher training, and fostering intrinsic motivation. (3) Changing pedagogical approaches in crises, using free tools, and endorsing teacher collaboration and self-learning. (4) Integrating technology effectively via differentiated instruction, collaborative learning, and tactical use of digital resources. (5) Implementing assessment strategies affiliated with learning objectives and providing professional development designed to instructors' needs and settings. (6) Fosteringpupil engagement through age-appropriate technology integration and wide-ranging instructional methods.

4. **Challenges and opportunities**:

The literature review on curriculum development, pedagogical approaches, assessment strategies, teacher professional development, and integration of technology in education depicts both challenges and opportunities. Challenges comprise barriers to effective curriculum execution, diverse pupil needs, and needs for custom-made professional development. However, prospects exist in applyingadvanced pedagogical approaches, leveraging technology for improved learning experiences, and applying best practices for valuation. Addressing challenges via collaborative efforts, stakeholder involvement, and strategic planning can unlock the potential for creating more effective educational environments that meet the needs of diverse learners and promote continuous improvement.

5. Contribution to knowledge exchange:

The literature review provides valuedperceptions into best practices in curriculum

development, pedagogical approaches, assessment strategies, teacher professional development, and technology integration in education. These findings contribute to knowledge exchange by contributing to practical recommendations for augmenting teaching-learning experiences, addressing challenges in curriculum implementation, improvising assessment practices, and upholding effective teacher development. By amalgamating research from diverse contexts and disciplines, this review facilitates the exchange of ideas and strategies among educators, policymakers, and researchers, ultimately fostering collaboration and innovation in the field of education.

Conclusion:

The literature review underlines key themes in educational best practices, comprising student-centred approaches, technology incorporation, teacher professional development, assessment for learning, and stakeholder collaboration. Operative strategies involve curriculum design, barrier reduction, innovative teaching, continuing teacher training, and technology amalgamation. Cultural context is significant, shaping curricula, overcoming barriers, adapting pedagogy, integrating technology, and engaging pupils. Regardless of challenges like implementation barriers and diverse student needs, opportunities exists in pioneering pedagogy, tech incorporation, and assessment practices. Overall, the review offers practical recommendations for enhancing education through collaboration, innovation, and addressing challenges, contributing valuable understandings to knowledge exchange.

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Upholding the Importance of Experiential Learning in the Light of Existing Theories and Practices in the 21st Century

Mahlaqa Sayed

Abstract:

All education gives us experience. However, persistence and its effects can be observed depending on the variation in the learning process. Although experiential learning is not new in the 21st Century, its demand and necessity are widely observed today. As the complexity of the modern world increases, so does the need for various innovative approaches to prepare students. This article will attempt to draw insights from existing theory and practice by exploring the enduring importance of experiential learning. With that, an attempt will be made to highlight the relevance of experiential learning in the 21st Century.

Key Words: Experiential Learning, 21st Century, Theoretical Perspectives, Vicarious Learning, Constructivist Approach

Introduction:

Experiential learning is desirable in the present age but can also be traced back to the ancient Indian education system. Aparavidya was one of the streams of the curriculum at that time. It encompasses practical knowledge needed for daily living. Where students learn through experience, on the other hand, Paravidya deals with self-actualization. The Guru-Sishya relationship was based on experiential learning. Guru helps Sishya make their own experiences rather than answering, lecturing, or providing knowledge. At that time, the students also had to perform daily household chores. Among those tasks, the mundane had to be done, and self-awareness, self-regulation, and self-meditation were also part of education. The discussion and application of experiential learning can also be seen in the medieval Islamic education system and British education.

Efforts and applications of experiential learning can be observed in our country and different parts of the world. Various educators and philosophers emphasized his experiential learning and discovered new theories. It has an excellent emphasis on being a teaching and learning approach to facilitate the acquisition of knowledge, attitudes, and skills in the 21st Century (Wright, 2015). These approaches were propounded by some of the most prominent scholars of the 20th Century. They are William James, John Dewey, Kurt Lewin, Jean Piaget, Lev Vygotsky, Carl Rogers, Carl Rogers, and Paulo Freire. They identify and recognize the importance of individual learning styles, the need for diverse learning styles, and their experiential and holistic learning strategies. It is also based on the idea that learning is a continuous and comprehensive process where students practice their education with theory and practices and actively engage in teaching-learning (Villarroel et al., 2020). This approach is related to some activities associated

with the practice, such as work-based Learning, cooperative education, collaborative Learning, professional developmental Learning, hands- on experience, internship, and practices. In the 21st-century competitive world, learning with experience is more emphasized than traditional education. All the higher educational institutions in India seek to prepare students to be contributing members and leaders of national and global communities, and they will be able to apply acquired knowledge to real- life problems. That is why universities emphasize generating students who are self- competent, self-directed, self-sufficient, and competent futuristic persons.

Experiential learning is a student-centered learning process. Here, students can learn, explore, explain, and apply their creative thinking process in their own space. Through the sense organs, they can sense, perceive, relate, and accomplish any task with the help of previous knowledge and experiences. The process recognizes and applies individual learning styles according to their needs and interests. It also can allow students to make mistakes, analyze consequences, find the actual solution, and accomplish the task according to their own needs and interests in their suitable learning environment.

This learning process helps students learn, recall, and retain power for a long time because they do their task with full consciousness, attention, and interest and accomplish it using their full potential. At that time, mind and body work according to the student's intention. That is why they can recall and retain something for a long time. As a result, the intended learning objectives are also achieved.

Edger Dale's cone of experience substantiates the above statement aptly. In his learning model, he discussed about 11 levels of learning. Among the 11 levels, direct and purposeful learning is the most essential because the learning objective can be fulfilled with 90 percent accuracy. Direct hands-on activities help to achieve specific outcomes. After all, learners can see, touch, smell, taste, and feel these learning experiences. As such, learners can use more sense to build knowledge at this level.

In Flander's interaction analysis, Flanders tried to analyze the learning behavior of teachers and students in classroom settings. Here, verbal and non-verbal activities are essential concerns in analyzing learning experiences. Galloway's interaction analysis also emphasizes verbal and nonverbal activities in a teaching-learning situation.

The National Education Policy 2020 also emphasizes experiential learning in the Indian education system. The policy aims to shift traditional rote learning and content-based education to a competency-based approach that can help learners apply their knowledge in real-life situations. After looking at all the above content, the title of this article will be able to justify the main concern adequately.

Aim of the Study:

This study aims to explore the significance and importance of experiential learning in the 21st Century. Existing theories and practices are taken to be an exploration manual.

Theoretical Foundations of Experiential Learning:

Experiential Learning Theory:

David A. Kolb created experience Learning Theory (ELT) in response to John Dewey's desire to establish an intellectual framework for experience learning. ELT is a multidimensional model of the dynamic, holistic theory of the adult development process. The foundation of this exaggerated concept is William James, John Dewey, Kurt Lewin, Jean Piaget, and L. S. Vygotsky's work (Kolb & Kolb, 2017). This theory emphasizes integrating hands-on actions, reflection, sensory experience, real-life experience, and the present situational concept in the learning cycle.

Constructivist Perspectives:

It is closely related to EL (Experiential Learning). It mainly emphasizes the role of the learner in constructing knowledge through hands-on experience. This perspective shows that learners construct knowledge based on their experiences rather than passively receiving information and knowledge from external sources. This perspective completely aligns with experiential learning, which emphasizes the importance of hands-on experiences in the learning process.

Socio-cultural Theories:

Many prominent scholars made their contributions to socio-cultural theories. Some of the well-known personalities are Lev Vygotsky and Jean-Lave. This theory emphasizes the role of social interaction in the learning process. This theory suggests that learners construct their knowledge by cultivating the social sphere. Interaction with others and new environments can give learners real-world experiences and social consciousness.

Neuroscientific Insights:

The theoretical foundation of experiential learning is also based on the neuroscientific insight. Neuroscience research and studies show that neuroplasticity can ameliorate brain structure and function according to their constructive motion (Beard, 2022). Research suggests that experiential learning can profoundly impact the brain and the human learning process. Emotion also plays a crucial role in this process.

Importance of Some Existing Experiential Learning Theories:

In higher education, Kolb's experiential learning theory is a well-known educational theory that presents a way of structuring an entire course using a learning circle (Healey & Jenkins, 2000). The four cycles of Kolb's model, concrete experience, reflective observation, abstract conceptualization, and active experimentation, help learners learn something holistically (Kolb, 1984). Teachers can use this theory and Kolb's separate learning styles to evaluate critical learning provisions and to develop appropriate learning opportunities.

Dewey's philosophy of experiential learning emphasizes amalgamating real-life experiences with relevant and meaningful education for learners (Dewey, 1938). He strongly believes that learning is an active conscious process that engages the mind and the whole person.

According to Dewey, learners should be actively involved in their learning, which will help them experience their whole things. This learning philosophy is essential in the 21st-century modern and dynamic era.

In this age of advanced technology of the 21st Century, social communication and relationships between people are disappearing. As a result, it has become a significant challenge to understand how different or compatible the reality of society is with the truth of life. In this case, Vygotsky's Social Development Theory is an appropriate way of connecting the individual with society. He believes that a learner can learn best when he tries to explore and engage in social activities with others. His theory also shows that the social nature of learning can help to develop a learner's cognitive development (Vygotsky, 1978). His theory presents collaborative learning, cooperative learning, and teamwork, enabling us with the power of group learning and allowing individuals to strengthen individual capacities and abilities.

Piaget's theory of constructivism upholds the concept that learners can actively construct their understanding of the natural world through interaction with their environment (Piaget, 1970). In his theory, he mainly emphasizes the learner's role. The learner should have the freedom to choose problems, prioritize their own needs, construct new thinking, and solve problems in their own space. The constructivist foundation also deals with them. That's why we can say that Piaget's theory of constructivism is more significant in the 21st Century.

Bandura's social learning theory also consists of learners' active participation and conscious activities in their environment. The basis of his theory is learning through observation, another named vicarious learning, which emphasizes learners' active participation and observation to learn new things from another person (Bandura, 1977). Imitation, which is a significant aspect of this theory, can make learners active with their full consciousness and potentialities.

These theories are essential and significant in the 21st Century. They help us to understand learner and their learning style and help to make desirable learning frameworks to draw out better learning outcomes. All the theories emphasize hands-on experiences, activities, active participation, conscious living, reflection, social interaction, and incredibly individual personality.

Experiential Learning and NEP 2020:

The concept of multidisciplinary learning is directly or indirectly based on experiential learning. National Educational Policy 2020 talks about holistic and all-round sustainable development. The goal of holistic development is only fulfilled by involving hands-on experiences in education. The NEP 2020 also recommends that the pedagogy should be equipped with inquiry-based, holistic, integrated, competency-based, flexible, discussion- based, and learner-centered. The document also shows concern with the technological empowerment of students. Another concern regarding vocational education is learning other digital tools to make the learning more effective in their interest. Through experiential learning and practices, the NEP 2020 document tried to establish the concept of inclusion in present Indian education.

Conclusion:

Education is necessary for all living beings to live a healthy, holistic, peaceful life. Adaptation has been the dominant feature of animal life, but the changing needs of humans have changed this concept a lot today. Humans learn in the environment through problem- solving and inventing new methods and materials. Hence, the prevalence of experiential learning in education can be observed in ancient times. Along with the household chores given by the Guru, the disciple also had to do the work of studies. The prevalence of experiential learning can also be observed in the modern education system of the 21st Century. However, this education has taken different forms depending on time and place. Experiential learning methods and theories discovered by some eminent educators helped form the foundation of this educational system. Therefore, to make education robust and future-proof in this 21st Century, the place of experience in education is essential. The National Education Policy has sought to strengthen experiential learning through improved technology and tools. As discussed earlier, according to Edger Dale, experiential learning is the highest learning method. In this education, the student is mentally engaged and has to learn by connecting with the physical and surrounding world. So, this research article has become as significant as experiential learning.

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To Study The Attitude Of The Secondary Students Towards Project-Based Learning Approaches

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Abstract

Project based learning has been a growing emphasis on innovative teaching methodologies to enhance students' engagement and learning outcomes. Like other teaching-learning approaches project-based learning to have its own unique features and benefits, it encourages students to explore and tackle with real-world problems and challenges through hands-on experience via projects, group discussions, assignments, presentations fostering critical thinking, collaboration and creativity. With the implementation of the NEP 2020 which advocates for a more holistic and child centric approach to education, many schools are embracing project-based learning as a mean to align with these principles. Understanding the impact and effectiveness of project-based learning in educational setting is of paramount importance, as it has the potential to transform traditional classroom practices and empower students to become more active participants in their self-learning journey. This action research seeks to identify the impact and attitude of secondary students towards project-based learning, its integration within the framework of NEP 2020, and its implications. Through this research study we shall understand how project - based learning is effective in real classroom setting, and does students find it useful, interesting or they have a negative attitude towards the same.

Keyword: Holistic approaches, Multidisciplinary, Project based, Self- learning, Critical thinking.

Introduction

The inclusion of Project-Based Learning (PBL) within the framework of the National Education Policy (NEP) is a significant step toward promoting a more holistic and experiential approach to education. The NEP, with its emphasis on holistic development, skill enhancement, experiential learning, and assessment reform, provides an ideal setting for incorporating PBL into educational practices. PBL complements the NEP's goal by providing a pedagogical paradigm that encourages transdisciplinary learning, critical thinking, teamwork, and problem- solving abilities in students. At its foundation, PBL reflects the NEP's goal of developing well-rounded persons capable of flourishing in an increasingly complicated and dynamic world. PBL enables students to apply their knowledge and abilities by immersing them in real-world projects that force them to confront actual obstacles. In important circumstances. This experiential learning technique not only improves comprehension and retention, but it also fosters a stronger sense of participation and ownership of the learning process. Furthermore, PBL responds to the NEP's request for a change to competency-based assessment by emphasizing the display of skills and comprehension through project-based work rather than traditional exams. This is consistent with the NEP's overarching

goal of creating a culture of continual learning and skill development that goes beyond traditional concepts of academic performance. In conclusion, incorporating Project-Based Learning into the National Education Policy is a significant step toward envisioning education as a transformative force for individual empowerment and society advancement. Embracing PBL allows educators to create learning environments that foster curiosity, creativity, and resilience, ultimately preparing students to negotiate the difficulties of the modern world confidently and competently.

Literature Review:

1. Du and Han (2016). discuss project-based learning (PBL) as a student-centered approach that structures learning around projects, which has garnered attention and demonstrated positive impacts in second language education. Their paper provides a selective review of research on PBL, encompassing its definition, the process involved, and related studies. The aim is to offer assistance to teachers utilizing PBL to varying extents, offering insights into its implementation and potential benefits in educational practice.
2. O'brein (2020). studied, project-based learning is an active method that develops the maximum involvement and participation of students in the learning process. It requires the teacher to energize the teaching-learning procedure by promoting the cooperation of students to investigate, make decisions and respond to the challenges of the project assuming them as real-life situations.

Statement of the problem:

To check/study whether the project-based learning approaches are effective in teaching-learning process for the secondary students.

Operational Variable Definition of Terms:

Attitude: The opinion of the secondary school students in towards projects-based learning activities.

Secondary school students: Students of class 8th to 10th.

Project-based learning activities is a mode of instruction that gives students the opportunity to apply theoretical knowledge to real-world problems in the classroom. It includes activities like classroom debates, community service activities, field trips, role play 3D model construction etc.

Aim and Objectives of Research:

Aim: To study the attitude of the secondary students towards the features of NEP 2020 that is Project based learning approaches.

Objectives:

1. To study the students' attitude towards project-based learning.
2. To study whether the students have developed the cognitive, psychomotor and affective domain through project-based learning.
3. To study the attitude of students towards the developing creative capacity to work through difficult problems commonly in small group.

Scope and Delimitation of research:

With the ever-changing needs of the classroom, the teaching-learning strategies must be altered. NEP2020 has introduced several new approaches for teaching-learning. Out of several activities/approaches for teaching-learning under NEP 2020, this research is limited to only one approach that is Project based learning. The respondents for this research are precisely from South Mumbai area. Among the entire secondary education students, the researcher has selected only the students of class 9. Since the school is an only girl's school the respondents of the research are confined to only girls.

The scope of this study is to determine whether students are motivated towards project-based learning approaches or not and what is their opinion towards project-based learning approaches.

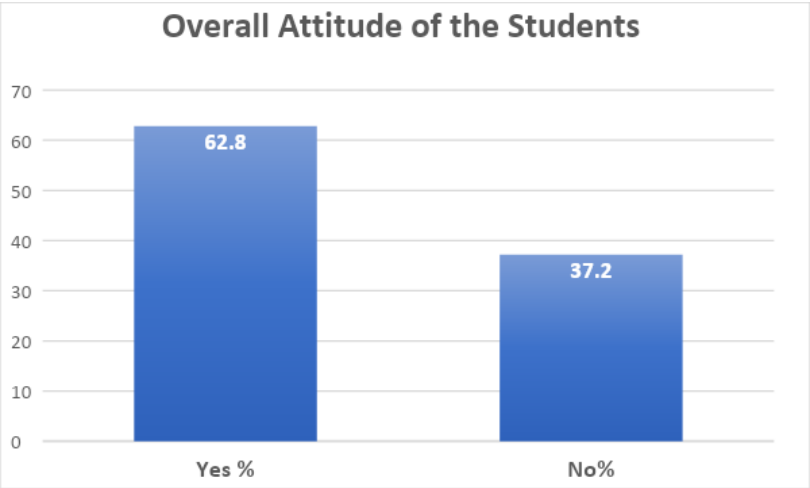
Sample: The sample for this study consists of 120 pupils of Secondary School from South Bombay area. The sampling technique used was simple random sampling.

Tools and Techniques:

A collection of 25 (Yes / No) questions meant to determine students' attitudes toward project-based learning. A survey tool used to design and transmit questionnaires to participants. Procedures implemented to preserve respondents' anonymity and privacy, such as not gathering personal information and data security. Participants were given clear instructions on how to fill out the questionnaire, ensuring consistency and accuracy in their responses.

Analysis and Interpretation:

Number of questionnaires	Number of questions of the questionnaire	Yes (positive)	NO (negative)
120	25	1884 (62.8%)	1116 (37.2%)



Discussion:

NEP 2020 aims to include Project-Based Learning (PBL) for various reasons. Research shows that students really like PBL. They prefer it over traditional teaching methods because it's more interesting and helps them think critically, solve problems, and work with others. Students believe PBL helps them understand things better, making learning easier and more enjoyable for all subjects.

Apart from academics, students think PBL is good for personal and professional growth. They feel it teaches them to work alone, getting them ready for real-life challenges and helping them remember and use what they learn. Also, students feel motivated and involved when doing PBL, and they think it works well for all subjects. PBL also helps them manage time better and be more creative, showing it's useful in many ways beyond just school stuff.

Conclusion:

The findings underscore the significance of PBL as a pedagogical approach aligned with the NEP's objectives of holistic development, skill enhancement, and experiential learning. The majority of surveyed students exhibited positive attitudes towards PBL, highlighting its effectiveness in fostering critical thinking, teamwork, and problem-solving skills. Moreover, PBL resonates with the NEP's call for competency-based assessment by emphasizing skill demonstration through project-based work. However, the study also reveals areas for improvement, including the need for greater gender balance in participant representation and ongoing support for educators in implementing PBL effectively. Overall, the research underscores the potential of PBL to transform education by empowering students to navigate the complexities of the modern world with confidence and competence, in line with the NEP's vision for educational reform.

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Effectiveness of learning resources developed using ICT Tools to facilitate learning while curriculum transaction

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Abstract

Technological advancements and innovation go hand in hand and they have brought about incredible changes in the way the students learn. Students are more exposed to technology and hence traditional methodology and traditional classroom settings are transforming, expanding beyond the four-walled cubes into the "virtual" amorphous cyberspace classroom. The use of ICT focuses on student-centered learning. Due to technology-driven communication and growing student diversity, we as teacher educators have a great responsibility to be more innovative and technological in our pedagogical approaches. The use of ICT offers a constructivist approach to learning through the provision of interactive learning experiences and thereby providing students with a repertoire of resources to enhance learning. The purpose of this paper is to provide ways to create a learning environment by using innovative teaching-learning strategies. This paper reveals the use of VSDC and Piktochart software to prepare learning resources to make the learning environment facilitate learners. The study is conducted on IX Std students by carrying out the teaching-learning process through traditional ways as well as by using ICT resources. The interpretation of the result is done by comparing the mean values of two groups, the one taught in a traditional way and the other by using ICT resources. Further, the paper discusses the major findings of the study.

Keywords: Innovation, Technology, Incredible, VSDC, Piktochart, Student-centered, Pedagogical approaches

Introduction

National Education Policy, 2020 (NEP) envisions a massive transformation in education through– "an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high quality education to all, thereby making India a global knowledge superpower." The NEP 2020 is founded on the five guiding pillars of Access, Equity, Quality, Affordability and Accountability[1].In school education, the National Education Policy 2020 stresses on the core values and principle that education must develop not only the cognitive skills, that is, – both 'foundational skills' of literacy and numeracy and 'higher-order' skills such as critical thinking and problem solving – but also, social and emotional skills – also referred to as 'soft skills' -including cultural awareness and empathy, perseverance and grit, teamwork, leadership, communication, among others[1a].The problems of the 21st century are vastly different and more complex than

previously imagined. This means that the demands placed on the next generation workforce will be very different and they will need to be prepared to be more innovative. Compared to the previous generations where the knowledge required was static, the newer generations will need a different set of skills to solve the more complex problems being faced by the 21st century[2]. In order for our students to be successful in the workforce, they need to have deep knowledge, the ability to solve complex problems, and also know how to practically use their knowledge and skills across different contexts. To build these life skills students need what is referred to as the 4C's of 21st Century skills: Critical thinking, Creativity, Collaboration and Communication[2a]

Audio-visual aids play a very important role in the teaching-learning process. When we keep students engage using technology, it arouses interest in the learners and helps the teacher to explain the concepts easily. Here, the researcher uses two groups, for one group the teacher delivers the content by using traditional methods and for the other group by using ICT tools such as VSDC and Piktochart

Need and importance of the study

The main purpose of the researcher is too identify and gain knowledge about the grasping skills and understanding level of the students through different methods of teaching-learning styles. It plays a vital role for finding solutions to problems, broadening the knowledge and levelling up our understanding about the aid required to tailor students need. To understand the diverse students requirement in order to cater them with proper aid ,implementation of ICT is one of the ways in which the teacher can use to achieve and bridge the gap between the learners and teachers or the learners and education. The importance of this research was to determine which method is more effective in promoting learning outcomes. Through comparing these different method or types it help the researcher in identifying the change that has to be brought by the Government of India by initiating the enhancement of technology integration whether it would be effective or not by using ICT in facilitating learning. The learners of 21st century are more engrossed and gains comprehensive knowledge when they are added to learn with the help of ICT tools. The Government of India has been making plans to bring changes in the curriculum by making it more technological integrated in order to develop the 4C's in the learners. The government also aims that caters the diverse needs of learners through ICT tools which can be one of the best ways that should be implemented in the classroom. Hence to see the impact of use of technology in curriculum transaction I have chosen this topic.

Review of Related Literature

1. **Allen Jim and Rolf Van der Velden (August 2012)**[3]. *Skills for the 21st century: Implications for education.* In this paper the authors say that the world is changing rapidly in a lot of ways, but the dominant change is in ICT. They say that these changes play an important role or are a driving force for the major changes such as globalization and flexibilization. They bring into sight the importance of 21st century skills in education and says that educational policy and practice should proceed from the insight that skills of individual human beings form a complete

interdependent package of all these three kinds of skills ; basic skills , specific skills and 21st century skills

2. **C. Cigdemoglu, H. Akay (2016)[4].** *Use of ICT tools and their effect on teaching and learning; students' and instructor's views.* This paper studied the use of Information Communication Technology (ICT) tools that contribute to high quality lessons since they have potential to increase students' motivation, connect students to many information sources, support active in-class and out-class learning environments, and let instructors allocate more time for facilitation. Therefore, use of ICT tools in the teaching and learning process becomes a great area of research for many educators. These technologies increase students' motivation, self- confidence and self-esteem to learn. Additionally, new technologies usually encourage independent and active learning, as a result, the students feel more responsible for their own learning. Considerable number of research on the contribution of ICT in modernizing learning and teaching, triggers attempts to incorporate these technologies in order to benefit in terms of quality of education, flexibility, access, and its cost.

Statement of the Problem

Effectiveness of learning resources developed using ICT Tools to facilitate learning while curriculum transaction

Variables of the Study

1. **Dependent variable** or the variables also kept constant to observe the result or act as the effect in the presence or absence of the constant.

- Questionnaire on useful microbes

Independent variable or the variable manipulated by the researcher for the present study to act as a treatment or the condition that is supposed to be the cause

- Teaching-learning process by using ICT tools such as VSDC and Piktochart

Operational Definition of Variable

1. **Learning resources:-** According to the researcher, the learning resources means that the aids that are used to help the learner in understanding the concept of harmful and useful bacteria.
2. **ICT:-** According to the researcher, the information communication technology which acts as an umbrella that contains all the required information in both forms audio as well as visual to help the learner deepen the understanding of the concept of harmful and useful bacteria through VSDC and Piktochart.

Aims of the Study

1. To develop the teaching-learning process by using learning materials prepared by using ICT tools for IX std students.
2. To implement the teaching-learning process by using learning materials prepared by using ICT tools for IX std students.
3. To study the effectiveness of teaching-learning process by using learning materials

prepared by using ICT tools for IX std students.

Objectives of the Study

1. To develop the teaching-learning process by using learning material prepared by using ICT tools for IX std students.
2. To develop the teaching-learning process by using traditional method for IX std students.
3. To compare the mean scores of both the groups of IX std students I,e., group A taught by traditional method and group B taught using ICT tools.

Scope of the Study

Defining the scope of the study and demarcating its frontiers ensure greater specificity and precision besides keeping at bay the unwarranted inferences. Therefore the researcher has spelled out the following boundaries for the present study.

Being an experimental study, the study is focus on the students studying in IX std. The study concentrates on developing the teaching-learning process by using learning materials prepared by using ICT tools such as VSDC and Piktochart.and study its effectiveness.

The study includes only the English medium IX std students of Dr, Babasaheb Ambedkar Municipal school.

Delimitations of the Study

Delimitations are the boundaries of study, which restrict the conclusions of the study to the sampled population.

- The study does not take into account the other medium of IX std students.
- The study included English medium IX std students from Dr. Babasaheb Ambedkar Municipal school only .

Sample

Group A :- 30 students (both boys and girls) of Std IX A from Dr. Babasaheb Ambedkar Municipal English medium school, worli for traditional way of teaching.
Group B:- 30 students (both boys and girls) of std IX B from Dr. Babasaheb Ambedkar Municipal English medium school, worli for teaching-learning process by using ICT tools such as VSDC and Piktochart.

Subject:- Science

Topic:- Useful and Harmful microbes

Sub-topic:-

1. Different types of microbes
2. Concept of useful microbes
3. Examples of useful microbes

i. Lacto bacilli
ii. Rhizobium

Medium of Instruction:- English

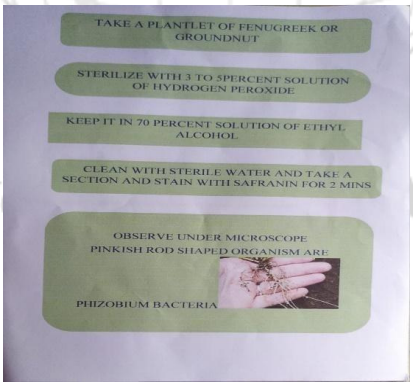
Lesson Plan:-

Group A:- Teaching-learning process planned by traditional method.

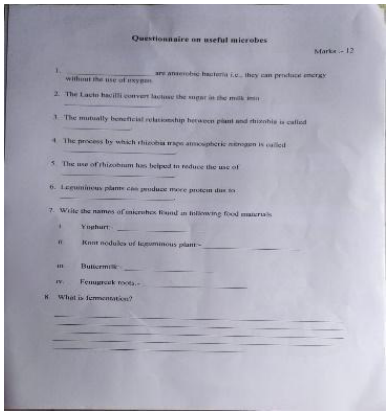
Group B:- Teaching-learning process planned by using learning materials prepared by using ICT tools such as VSDC and Piktochart

Treatment: -

- The research commenced after selection of school, standard, subject and lesson to be taught.
- The school selected was totally untouched for carrying out the teaching-learning process by using ICT tools.
- The class of IX std was selected as the objectives of the study matched with the age level of the students.
- The subject chosen was science and the topic was useful and harmful microbes.
- Teacher carried out the teaching-learning process for both the groups i.e., Group A was taught by the traditional way and Group B was taught by Using ICT tools.
- Questionnaire was prepared on useful microbes and given to both the groups to solve after implementation of the teaching-learning process.
- Students' performance and achievement was evaluated by scores achieved by them.
- Mean scores are compared of both the groups and results were interpreted.



Tool:- Questionnaire on useful microbes


Questionnaire on useful microbes

Marks :- 12

1. _____ are anaerobic bacteria i.e., they can produce energy _____ without the use of oxygen.
2. The Lacto bacilli convert because the sugar in the milk into _____
3. The mutually beneficial relationship between plant and rhizobia is called _____
4. The process by which rhizobia traps atmospheric nitrogen is called _____
5. The use of rhizobium has helped to reduce the use of _____
6. Leguminous plants can produce more protein due to _____
7. Write the names of microbes found in following food materials
   i. Yoghurt:- _____
   ii. Root nodules of leguminous plant:- _____
   iii. Buttermilk:- _____
   iv. Fenugreek roots:- _____
8. What is fermentation?

Analysis and Interpretation

- To compare the mean scores of both the groups.

Groups	Sample	Method of Teaching-learning process	Mean scores
Group A	30	Traditional way	**5.72**
Group B	30	By using learning materials prepared by using ICT tools	**7.79**

From the above table and graph it can be interpreted that the mean scores of Group B (content taught using ICT tools) is greater than the Group A.(content taught by traditional way). Therefore we can interpret that the teaching-learning process planned by using ICT tools is effective and makes students understand better.

Discussion

VSDC Free Video Editor does not require any specialized hardware to run properly. The layout consists of timeline area, scene area, status bar, quick access toolbar, editing tools, command bar with media library, properties window and resource window[5a].

Any digital object may be dragged and dropped anywhere on the timeline. Once on the timeline, video can be duplicated, split, cut, muted, cropped, flipped, rotated, played backward, resized, etc., its speed can be slowed down or increased; audio may experience amplitude and delay effects, filters, tempo and rate change, reverse effect, etc. color corrected and enhanced. VSDC Free Video Editor gives the opportunity to save an output file to a computer hard disk drive. Cropping, rotating, transparency, and creating picture-in-picture video effects are quite easy in VSDC[5b].

Piktochart is a web based infograhic application which allows users without intensive experience as graphic designers to easily create professional-grade info graphics using themed templates. An important feature of Piktochart is its HTML Publishing capability, which generates infographics that are viewable online with multiple clickable elements for users. Additionally, the program provides tools to add interactive maps, charts, videos and hyperlinks. It provides many templates which can be edited by using more advanced functions and can be customized as desired.[6]

Hence both these tools can be used for making learning materials and can be used during the teaching-learning process to make the lesson more effective and support students to enhance their achievements.

These tools can also be used for revision purposes and can be sent to students by mail so that they can refer to it at their own pace.

Conclusion

Usage of innovative learning resources is the need of the hour, from the above write-up we gain an insight on developing learning resources using VSDC and Piktochart that would benefit

students to do self paced learning and be an active participant in the process of learning.it will not only help to enhance quality of teaching and learning but also helps the learners to achieve desired outcomes.

It helps students to feel more motivated and confident and they would be stimulated to be life long learners.

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Impact of Bilingualism in Teaching & Learning of English Language in Class 8th

Sarah. Kachwala

Abstract

Exploring the intricate relationship between bilingualism and English language education, this research project investigates the impact of utilizing two languages, the native language and English, in the teaching and learning processes within an English classroom setting, particularly focusing on Class 8th students. By analyzing how bilingualism influences educational practices, the study aims to deepen our understanding of how language diversity shapes the acquisition of English language skills among secondary school students. Through a nuanced examination of bilingual education dynamics, the research endeavors to develop tailored teaching methods that accommodate the diverse linguistic backgrounds of learners, thereby contributing to enhanced English language education outcomes in the secondary school milieu.

Keywords : Bilingualism, English Classroom, Teaching and Learning, Educational Impact, Secondary Education, Language Skills, Multilingual Education, Linguistic Diversity.

Introduction

Bilingualism, the ability to speak and understand two languages, is a prevalent phenomenon in India, where multilingualism is a defining characteristic of its diverse cultural fabric. This research investigates the impact of bilingualism, particularly the use of Hindi alongside English, on the teaching and learning processes within the educational context more specifically in an English Classroom, the National Education Policy (NEP) also promotes bilingualism, emphasizing the importance of multilingual education for holistic development. Understanding the dynamics of bilingualism in this context is essential for shaping effective language instruction and curriculum design that cater to the linguistic diversity of learners. Through this exploration, we aim to contribute to a deeper understanding of the role of bilingualism in enhancing English language education outcomes in Secondary Education Our focus is on understanding how bilingualism impacts the acquisition of English language skills among secondary school students. By studying this, we aim to develop more effective teaching methods tailored to the diverse linguistic backgrounds of learners. We're exploring how blending Hindi and English in instruction benefits students, while also addressing challenges they may encounter, such as varying proficiency levels in each language or potential biases. In essence, our research seeks to deepen our understanding of the role of bilingualism in English language education in Indian secondary schools, aiming to improve teaching practices to better accommodate linguistic diversity and promote inclusive learning environments In the context of English language education in secondary schools, understanding the nuances of bilingualism

becomes crucial. Hindi, as one of the most widely spoken languages in India, often interacts dynamically with English in educational settings. This interaction can manifest in various ways, such as code-switching (alternating between languages within a conversation), translanguaging (using elements of both languages seamlessly), or even language blending in instruction and curriculum materials. This study aims to help us understand how knowing two languages affects learning English in Indian high schools. By figuring out the challenges and benefits of teaching in two languages, we want to give teachers better methods to support students who speak different languages. Our goal is to create classrooms where everyone can succeed academically and appreciate different cultures

Review of Related Literature

Michael Lalremtluanga, (2020) *Experimental Teaching Using Bilingual Method: A Study on English Language Education in Mizoram*. Michael Lalremtluanga's study on the Bilingual Method in English language education in Mizoram highlights the effectiveness of incorporating the mother tongue in the classroom. The research demonstrates that using the mother tongue alongside English instruction improves students' comprehension and learning outcomes. By providing equivalents for unfamiliar words, the Bilingual Method enhances language proficiency and saves time in the classroom. The study emphasizes the importance of integrating the mother tongue to support English learning in multilingual environments like Mizoram, suggesting practical implications for educators and policymakers in enhancing language teaching practices.

Statement of the Problem

Impact of Bilingualism in Teaching & Learning of English Language in Class 8th

Variables of the Study

1. Independent Variable:
   - o Bilingualism (the ability to speak and understand two languages)
2. Dependent Variables:
   - o Pre-Test Scores of the Secondary School Students
   - o Post-Test Scores of the Secondary School Students
   - o Mean Value of the Scores Acquired by Secondary School Students in Pre-Test and Post Test

Aims of the Study

1. To deepen the understanding of the role of bilingualism in English language education in Indian secondary schools.
2. To investigate how bilingualism affects the comprehension of English language in classroom settings.
3. To identify the challenges encountered by 8th-grade students in understanding and comprehending English language.

Objectives of the Study

1. To identify the challenges encountered by 8th-grade students in understanding and comprehending English language
2. To improve 8th-grade students' comprehension and understanding of English language within bilingual instructional settings
3. To find out the difference between the pre-test and post-test scores of 8 th std English medium students in understanding English Language

Hypothesis of the study

Null hypothesis: -

- English medium students of 8 th std do not face any difficulties in comprehending English Language
- There is no difference between the pre-test scores and post-test scores of 8 th std English medium students in understanding English

Scope of the Study

The scope of the study is focused on the impact of bilingualism in teaching and learning of the English language in 8th-grade students. It includes identifying the challenges encountered by students in understanding and comprehending English, improving their comprehension and understanding within bilingual instructional settings, and finding out the difference between pre-test and post-test scores of 8th-grade English medium students in understanding English language. The study is limited to one school in Mumbai, and specifically to 25 students of the 8th standard in the 2023-24 session. The research methodology involves the use of qualitative tools such as pre-tests, post-tests**,**

Delimitations of the Study

Delimitations are the boundaries of study, which restrict the conclusions of the study to the sampled population.

1. The present study is limited to only one school of Mumbai city
2. The present study is focused only on the 8th standard English medium students.
3. The present study is limited to difficulties related to comprehending the English language in an English subject classroom.
4. The study consists of only 25 students.
5. This study is limited to the students of session 2023-24.

Sample

The sample of the study consists of 25 students from the 8th grade at an English Medium School. The sampling technique used was purposive sampling, which involved selecting students from the 8th class of the SSC board at Rosary High School using a random sampling technique.

Lesson Plan:-

Pre-Test Lesson Plan:

Subject: English
Grade: 8th
Language of Instruction: English only
Duration: 30 minutes
Content: The teacher explains the concepts and instructions using only English.
Assessment: The pre-test question paper consists of 20 marks and includes questions related to the comprehension of English language concepts.

Post-Test Lesson Plan:
Subject: English
Grade: 8th
Language of Instruction: Hindi and English
Duration: 30 minutes
Content: The teacher explains the concepts and instructions using both Hindi and English to facilitate better understanding for bilingual learners.
Assessment: The post-test question paper consists of 20 marks and includes questions related to the comprehension of English language concepts.
It's important to note that the use of bilingualism in the post-test lesson plan aims to enhance the understanding of English language concepts for students who may face challenges in a multilingual environment.

Tool:-

The researcher used self –constructed pre-test and post-tests questionnaire. Following questionnaire were used for data collection:

1. 20 marks Pre-test Questionnaire
2. 20 marks Post- Test Questionnaire

Grade: 8th
Subject: English
Date:
Marks: 20
Time: 30min
Note – All Questions Are Compulsory
The Figures in the bracket indicate the correct marks

Q1. Read the following passage carefully and answer the following questions that follow:

As the sun slowly descended, the sky transformed into a canvas of pretty colours like orange, pink, and purple. The gentle wind whispered through the trees, causing the leaves to sway daintily The air carried the delightful fragrance of nearby flowers, creating a pleasant atmosphere. As it got darker, everything embraced a tranquil calm, as if nature itself was taking a restful break after a bustling day.

1. What happened when the sun went away? (2)
2. Describe the colours of the sky as the sun set. (1)
3. Create a sentence using the word "sway" in a different way. (1)
4. What does "it got darker" tell you about the time? (1)
5. Give the meaning of the word descended (1)
6. Use the word 'delightful' and make a sentence (1)
7. Explain the meaning of the word you used in question 6. (2)
8. How does the author make you feel calm in the passage? (2)
9. What is the main idea of the passage? (2)
10. How would you feel in the described setting? (2)
11. Give a word from the passage that means 'Calm' (1)
12. Give a word from the passage that means full of activity (1)
13. Give the antonym of the word delightful (1)
14. Identify the phrase in the passage which suggests that the day ended on a very calm note (2)

Grade: 8th
Subject: English
Date:
Marks: 20
Time: 30 min
Note - All Questions Are Compulsory
The Figures in the bracket indicate the correct marks

Q1. Read the following passage carefully and answer the following questions that follow:

As the moon descended (उतरी), the city lit up with vibrant colours – reds, blues, and yellows. The first rays hit and the city shone with light. A gentle breeze made the city lights sway (झूलना) delicately. The air carried the lively energy of the urban scene, creating a pleasant (सुखद) atmosphere. As morning approached, everything embraced a calm tranquillity (शांति), as if the city itself was taking a peaceful break getting ready for a bustling(हलचल) day.

1. What happened when the moon went away? (2)
2. Describe the colours of the sky as the moon went away. (1)
3. Create a sentence using the word "sway" in a different way. (1)
4. What does "the city shone with light" tell you about the time? (1)
5. Give the meaning of the word descended (1)
6. Use the word 'delightful' and make a sentence (1)
7. Explain the meaning of the word you used in question 6. (2)
8. How does the author make you feel calm in the passage? (2)
9. What is the main idea of the passage? (2)
10. How would you feel in the described setting? (2)
11. Give a word from the passage that means 'Calm' (1)
12. Give a word from the passage that means full of activity (1)
13. Give the antonym of the word delightful (1)
14. Identify the phrase in the passage which suggests that it was still calm in the morning. (2)

Treatment: -

1. In this research study, the treatment used was the implementation of bilingual teaching (using both Hindi and English) in an 8th-grade classroom to explore its impact on students' comprehension of English. The treatment was administered as follows:
2. Pre-test: The students were given a 20 marks Pre-test Questionnaire in English to assess

their understanding of the language before the treatment.

3. Treatment: The bilingual teaching approach (Hindi along with English) was implemented in the classroom to help students better comprehend English.
4. Post-test: After the treatment period, the students were given a 20 marks Post-Test Questionnaire in English to evaluate any improvement in their comprehension of the language.
5. The effects of the treatment were measured by comparing the scores of the pre-test and post-test questionnaires. The difference in scores would indicate the impact of the bilingual teaching approach on students' learning outcomes.

Analysis and Interpretation

Mean Value of the Score Acquired by the students in Pre-Test

Sr.No.	Test	Total Number of the students	Mean(M)
1	Pre-test	25	6.96

Interpretation:

Table 4.1 shows that the pre-test scores of class 7th standard who faced problems.

Mean Value of the Score Acquired by the students in Post-Test

Sr.No.	Test	Total Number of the students	Mean(M)
1	Post-test	25	13.2

Interpretation:

Table 4.2 shows the post-test scores of class 7thstandard which indicates improvement after remedial classes.

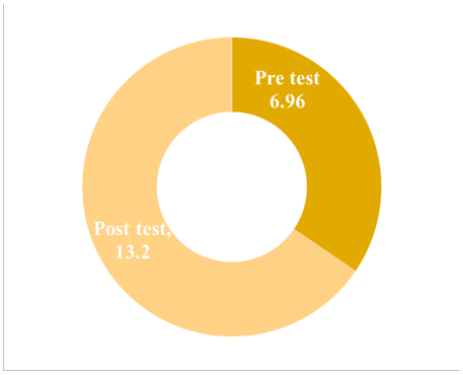
Sr.No.	**Test**	**Total Number of the students**	**Mean (M)**	**Difference of Mean (M2-M1)**
1	**Pre-test**	**25**	**8.45**	**6.24**
2	**Post-test**	**25**	**16.8**	

Interpretation:

Mean of the pre-test and post-test of students is calculated in table 10.1.

It is clear that mean of post-test scores (13.2) is higher than that of mean of pre-test scores (6.96). The difference in the mean is __6.24___which is significant.

It can be concluded that Null- hypothesis is rejected.



Discussion

Understanding and mastering English remains a pivotal goal in the Indian educational landscape, primarily due to its widespread utility and global recognition. However, the road to English proficiency is often fraught with challenges, especially within the heterogenous linguistic environment of an SSC board 8th standard classroom. This paper attempts to dissect the role of bilingualism, with a focus on the incorporation of Hindi—the lingua franca of India—into English language instruction. The rationale behind this bilingual approach is to facilitate a better grasp of English as well as the subject content by weaving in students' mother tongue, which in this context, is often Hindi. The linguistic tapestry of India paints a complex picture where the integration of native language instruction could potentially offer a bridge to understanding the English language better. By harnessing bilingual teaching methods, educators can utilize the cognitive and linguistic resources that students bring to the classroom, thereby potentially enhancing comprehension and retention. This research is crucial not only for societal inclusivity but also for the individual educational advancement of students. The objective of this study is to pivot away from a 'one size fits all' methodology and instead, embrace the diversity of linguistic backgrounds of the learners. We delve into how the strategic use of Hindi in English lessons can impact students' understanding, engagement, and overall competence in the English language. We also seek to contribute to the broader dialogue on educational equity, recognizing language as a conduit for knowledge and not a barrier to it. In navigating the complex interplay between language acquisition and pedagogical strategies, this research emphasizes the need for adaptability in teaching practices to accommodate linguistic diversity. It posits that the integration of students' primary language, Hindi, alongside English, may pave the way for a richer, more effective learning experience. Through this exploration, our aim is to illuminate pathways for leveraging bilingualism as an asset rather than an impediment, thus redefining the contours of English language education in an Indian state-board context

Conclusion

In summary, this study aimed to explore how using Hindi alongside English affects teaching English in an 8th grade classroom of an Indian state board. It shows that teaching in both languages can help students understand English better, especially in diverse classrooms. The research found that including Hindi in English lessons not only improves comprehension but also

helps students build a stronger foundation in both languages. It also respects students' cultural backgrounds and language skills, showing that education can support their heritage. The hope is that this study will add to the knowledge about inclusive teaching methods. By recognizing and using students' languages in class, teachers can make learning more enjoyable and effective. The research emphasizes the importance of embracing language diversity and how bilingual education can make education fairer and better in India's changing society. Looking ahead, this study can guide policymakers and educators in developing teaching methods and school programs that value students' languages. By empowering teachers and engaging students, bilingual education can enhance learning experiences and improve education quality in India.

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Teachers' Perspectives on Cloud-Based Platforms in Teaching Learning Process

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Abstract

In today's digital age, technology has a big impact on education, and cloud computing is a major part of this change. The Government of India has launched various cloud-based learning platforms like SWAYAM, SWAYAM Prabha, PM e-Vidya, e-Pathshala, and DIKSHA, to enhance educational accessibility and effectiveness. These platforms can be accessed by learners at any time and from anywhere. The aim of this paper is to study the perception of secondary school teachers of using cloud-based learning platforms in teaching-learning process. The findings of the study revealed that the prevalent lack of awareness among teachers regarding these platforms, highlighting a gap in knowledge and understanding. It is also found that the low registration rates of teachers for courses offered on cloud-based learning platforms, indicating a potential need for increased awareness campaign and incentives to encourage engagement.

Keywords: Cloud-based Platforms, SWAYAM, SWAYAM Prabha, PM e-Vidya, DIKSHA

Introduction

In today's digital age, technology has become an integral part of our daily lives, affecting every aspect including communication, entertainment, and education. In the contemporary era of education, the integration of technology has become indispensable, revolutionizing traditional teaching methodologies and learning environments. One of the most prominent technologies that is revolutionizing the education sector is cloud computing. The Government of India has been proactive in promoting the integration of technology in education to enhance accessibility, inclusivity, and effectiveness. The potential for MOOCs in the Indian platform to significantly enhance the higher education system if implemented properly with appropriate guidelines. (Ahmed, M., et. al, 2019)

Recognizing the potential of cloud-based platforms, various initiatives have been launched to leverage their capabilities in transforming the educational landscape. One such initiative is the

National Mission on Education through Information and Communication Technology (NMEICT), spearheaded by the Ministry of Education. NMEICT aims to provide quality education to all by harnessing the power of ICT tools, including cloud computing, to bridge the digital divide and empower learners and teachers across the nation. Major e-learning initiatives launched by the Indian government, such as DIKSHA, SWAYAM MOOCS, E-Shodh Sindhu, Swayam Prabha TV, and others, have played a crucial role in facilitating education continuity and access to learning resources during the pandemic (Mir, 2022).

SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is an ambitious initiative by the Government of India that provides access to high-quality educational content developed by experts from premier institutions. It caters to learners of all ages and backgrounds, enabling them to pursue education at their own pace and convenience. Teachers can leverage SWAYAM to supplement traditional teaching methods, offering students additional resources and opportunities for self-directed learning. Teachers perceived SWAYAM courses as beneficial for gaining knowledge. (Sikarwar, Gupta, & Vishnoi, 2022).

Complementing SWAYAM, SWAYAM Prabha is another initiative aimed at leveraging technology to disseminate educational content widely. It comprises a bouquet of 32 high-quality educational channels offering round-the-clock access to curriculum-based content for school and higher education. By harnessing cloud-based broadcasting technology, SWAYAM Prabha ensures widespread access to educational resources, especially in remote and underserved areas where traditional infrastructure is limited. Kumar A. (2017) described the objectives of Swayam Prabha channels. It is stated that Swayam Prabha covers higher education as well as school education and assist students (Class XI and Class XII) for competitive examinations.

The Government of India launched the PM e-Vidya initiative during COVID-19 pandemic that leverages cloud-based technologies to provide holistic support for online learning, offering access to digital resources, virtual classrooms, and interactive learning tools.

e-Pathshala is an innovative digital platform developed by the National Council of Educational Research and Training (NCERT) to provide access to digital textbooks, audio-visual resources, and supplementary materials for K-12 education. Hosted on a cloud-based infrastructure, e-Pathshala offers a wealth of educational content aligned with the national curriculum framework, catering to diverse learning needs and preferences.

DIKSHA is a pioneering digital platform developed by the Ministry of Education to offer personalized learning experiences for teachers and students. It provides access to a vast repository of digital resources, including textbooks, lesson plans, assessments, and teacher training modules. Hosted on a cloud-based infrastructure, DIKSHA enables teachers to discover, customize, and share educational content seamlessly, fostering collaboration and knowledge exchange within the education community. Educators can leverage DIKSHA to enhance their professional development, access innovative teaching resources, and promote interactive learning experiences in the classroom.

The present study aims to understand the awareness level of teachers about the cloud-based

learning platforms and how they are using these platforms in their teaching-learning process.

Objectives of the Study

1. To know the perception of secondary school teachers about cloud-based learning platforms.
2. To study the application of cloud-based learning platforms in secondary school education.
3. To know the awareness level of teachers about the use of cloud-based learning platforms.
4. To investigate the major challenges faced by teachers in using cloud-based learning platforms.

Methodology

In the present study, a quantitative research design was used to know the perception, usage and the challenges faced by the secondary school's teachers in using cloud-based learning platforms. In order to collect data, the researcher developed a self-constructed questionnaire after reviewing related literature. The questionnaire contains 15 items (14 close ended and 1 Open ended). The data has been analyzed as per the objectives of research. MS-Excel is used to analyze the collected data and the descriptive statistics including graphical representation and percentages are used to provide a general view.

Data Analysis

Demographic information of Teachers

The total sample for the present study is 40 teachers in which 50% are male and 50% are female. Among 40 teachers, 50% teachers are PGT level i.e. teaching senior secondary students and 50% of teachers are TGT, teaching secondary school students. 100% sample has been collected from Jamia Senior Secondary School only.

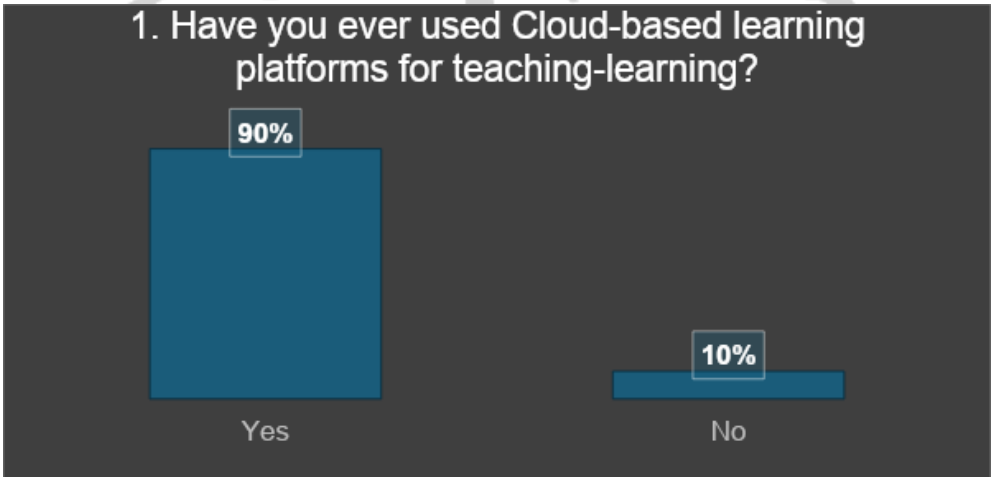

Fig. 1

About 90% of teachers have utilized Cloud-based learning platforms in teaching-learning however, approximately 10% have not yet incorporated these platforms into their teaching practices, suggesting potential areas for further training or exploration of alternative methods. (Fig. 1)

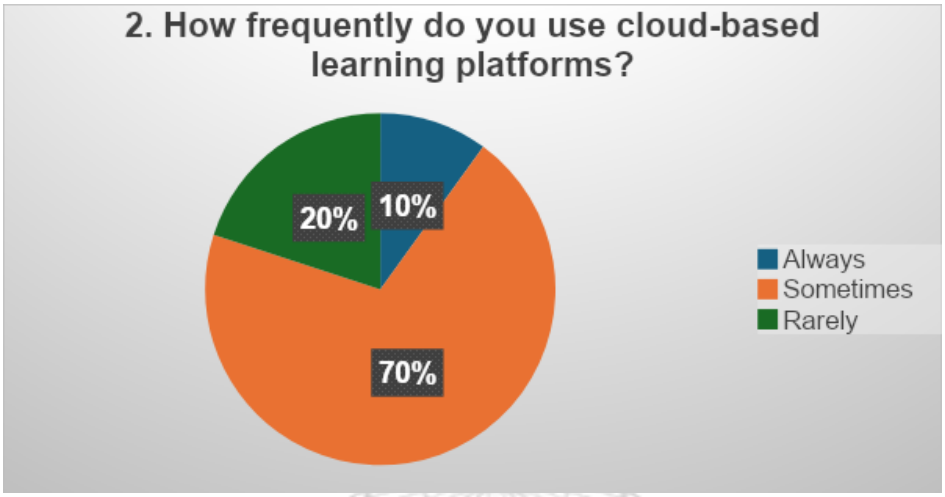

Fig. 2

The majority of respondents, about 70%, use cloud-based learning platforms sometimes, about 20% use them rarely while only 10% use them always, indicating a smaller but consistent user base who heavily rely on these platforms for teaching-learning process. (Fig. 2)

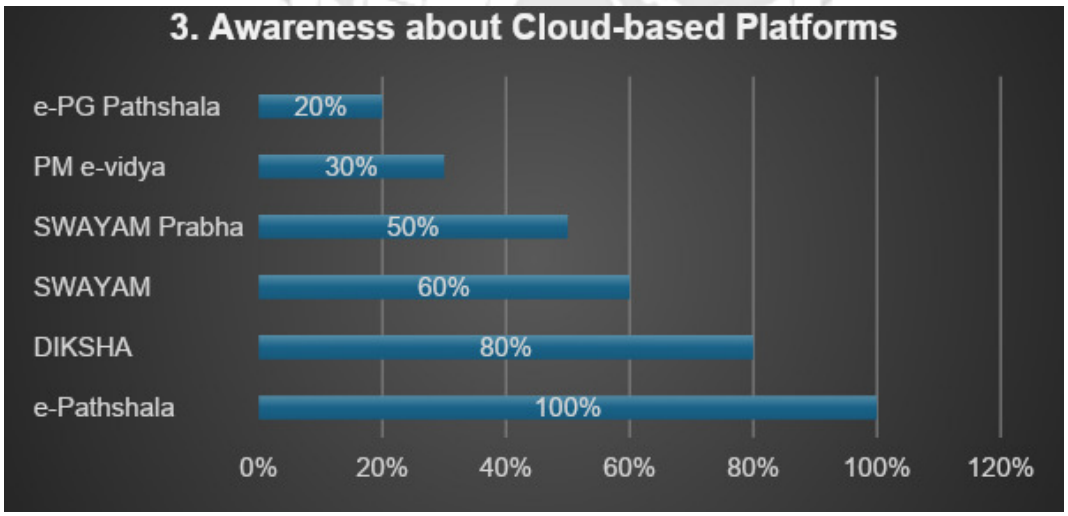

Fig. 3

The results indicate a high level of awareness among teachers regarding e-Pathshala, with 100% of respondents being familiar with this cloud-based platform. 80% of teachers are aware about DIKSHA. SWAYAM, another prominent platform, is known to 60% of respondents, while SWAYAM Prabha is familiar to 50% of the teachers surveyed. PM e-vidya is a platform initiated by the GoI during Covid-19 pandemic but it is known by only 30% of teachers, indicating moderate familiarity. Finally, e-PG Pathshala has the lowest awareness level among teachers, with only 20% being familiar with it. These percentages suggest varying degrees of adoption and promotion of these cloud-based platforms in educational settings, with some platforms being more widely recognized and utilized than others.

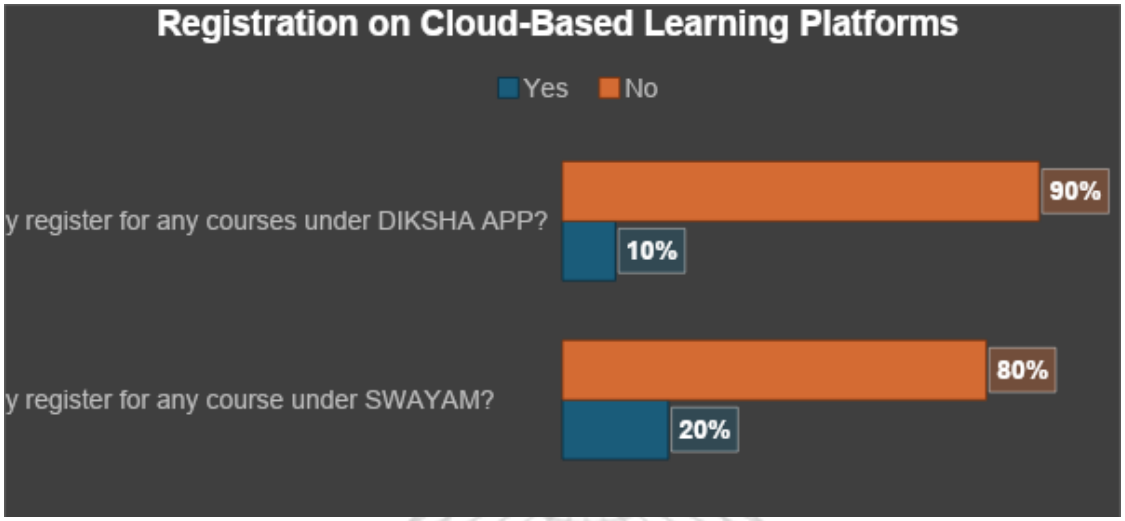

Fig. 4

Only 10% of teachers voluntarily register on DIKSHA app for courses, while the majority, 90%, do not. This suggests that there may be lower awareness, interest, or perceived utility of the courses offered on the DIKSHA platform among the surveyed teachers. On the other hand, for SWAYAM, 20% of teachers voluntarily register for courses however, the majority, 80%, still do not register for any courses. these results highlight the need for both platforms to enhance their offerings, increase awareness, and possibly provide incentives or support mechanisms to encourage more teachers to voluntarily register for and engage with their courses. (Fig. 4)

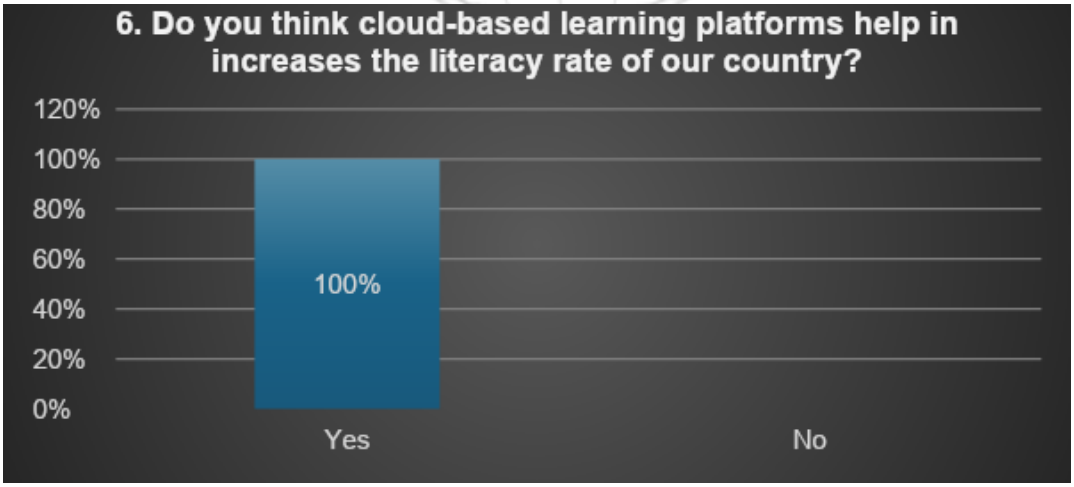

Fig. 5

100% of respondents believing that cloud-based learning platforms contribute to increasing the literacy rate of the country, suggests a strong conviction among teachers regarding the potential of these platforms.

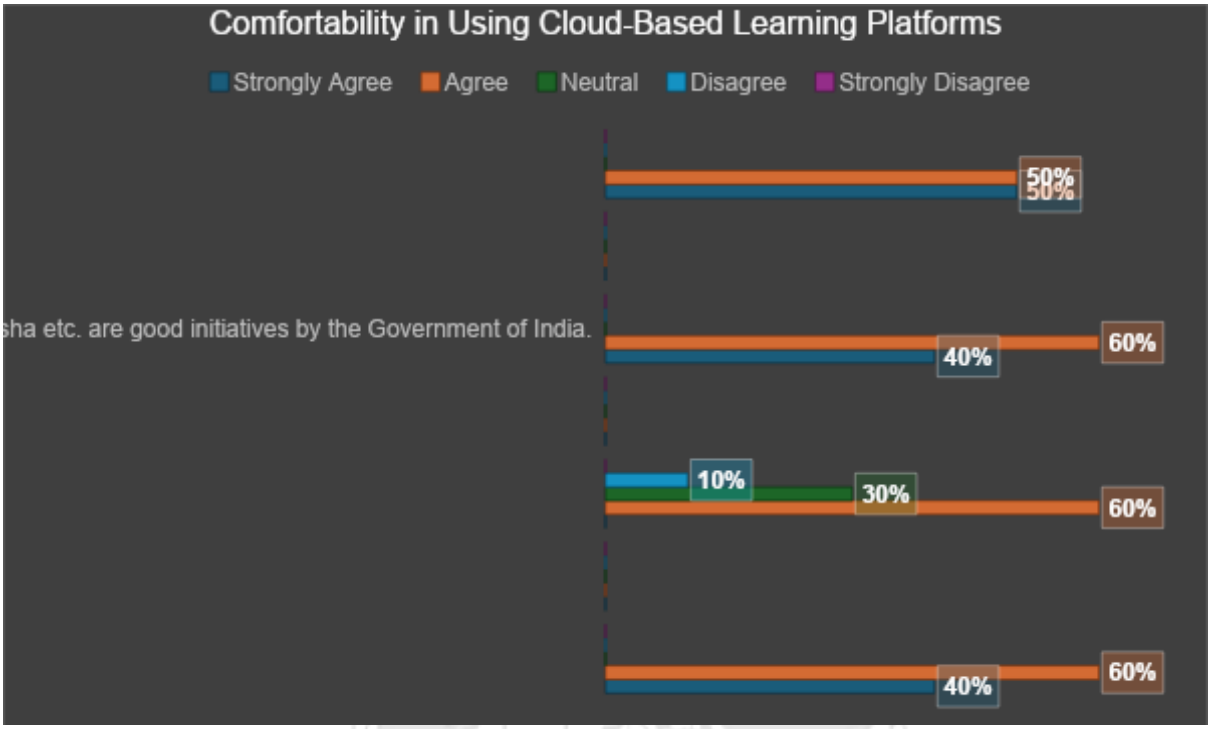

Fig. 6

All respondents, a combined 100%, either strongly agree (50%) or agree (50%) that they are comfortable using technology for teaching and learning. 40% of respondents strongly agreed and majority of respondent i.e. 60% agreed with the statement that platforms like SWAYAM, Swayam Prabha, PM eVidya, DIKSHA, etc., are good initiatives. This suggests a strong endorsement and belief in the effectiveness and value of these platforms in advancing education. 60% of respondents agree that they are more comfortable using the DIKSHA mobile app/web for teaching and training. 30% of respondents are neutral, indicating they neither agree nor disagree with the statement while only 10% of respondents disagree with the statement. 40% of respondents strongly agree with the statement, indicating a significant degree of comfort and confidence in utilizing these platforms to access educational materials. A majority of 60% agree with the statement, further emphasizing widespread comfort among teachers in downloading books from e-Pathshala and the DIKSHA portal. 40% of respondents strongly agreed and 60% of respondents agreed that they are comfortable in downloading books from e-Pathshala and the DIKSHA portal, indicating a high level of comfort among the majority of teachers surveyed.

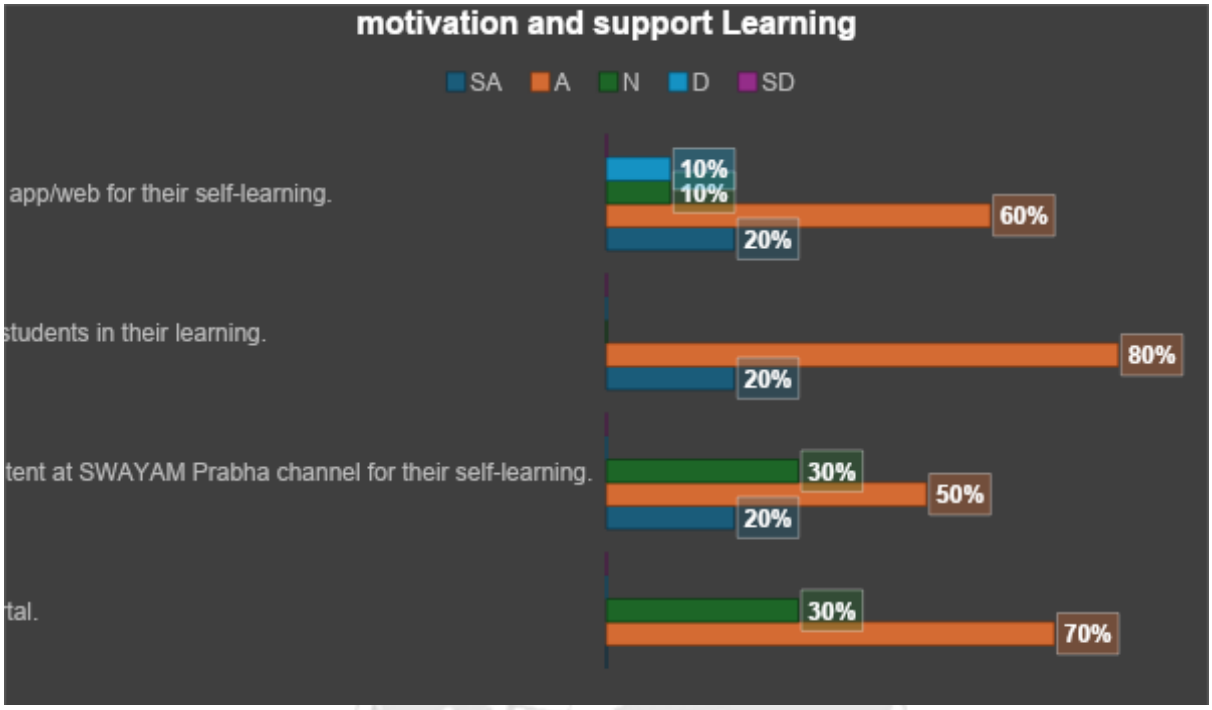

Fig. 7

Majority of teachers i.e. 60%, encourage their students to use DIKSHA app for their self-learning while only 10% do not encourage students to use DIKSHA app for their self-learning. Most of the teachers (80%) strongly agreed and 20% agreed that cloud-based learning platforms help students in their learning. Majority of teachers i.e. 50% agreed and 20% strongly agreed that they encourage students to watch educational content at SWAYAM Prabha channel for their self-learning. 70% of teachers motivate their students to register at SWAYAM portal.

Challenges in Using Cloud-based Platforms

The responses highlighted several common challenges in using cloud-based learning platforms: Internet connectivity issues, data security concerns, and privacy issues are commonly reported issues. Some mention a heavy reliance on internet access and preferential use of YouTube lectures by students. Lack of awareness among both students and teachers about these platforms is identified as a challenge. Limited resources and internet access, particularly for students from economically disadvantaged backgrounds, are also mentioned as a challenge.

Conclusion

In conclusion, the findings of the study underscore the significant impact and potential of cloud-based learning platforms in the education sector. While a vast majority of teachers have embraced these platforms, there remains a segment that has yet to fully incorporate them into their teaching practices. This suggests a need for further training and awareness initiatives to ensure widespread adoption. The varying levels of familiarity with different platforms highlight the importance of enhancing promotional efforts and increasing awareness among teachers. Additionally, the low registration rates for courses on platforms like DIKSHA and SWAYAM indicate a potential gap in perceived utility or awareness of available courses on these cloud-based

learning platforms. Despite these challenges, there is a strong conviction among teachers regarding the positive impact of cloud-based learning platforms on increasing literacy rates. Positive reception of SWAYAM courses, despite challenges like time constraints and technical issues, highlighting their potential in enhancing learning resources and student skills emphasized the necessity of improved monitoring and support mechanisms to address course discontinuation issues. The overwhelming comfort and endorsement of technology for teaching and learning further emphasize the potential of these platforms in enhancing educational outcomes. Overall, the study emphasizes the importance of continuous improvement, awareness-building, and support mechanisms to maximize the effectiveness and utilization of cloud-based learning platforms in education.

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Principals' Perceptions and Feedback on Training for the School Leadership Development Program (SLDP): An Analysis of Improved Skills and Implications

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Abstract:

In order to improve school success in contemporary educational systems, principals must participate in ongoing professional development opportunities or management training programs. Since they provide a substantial contribution to attaining excellence in school management, these programs are highly recognized.

The data was collected from heads of schools. 50% of the school principals in Delhi's North District who participated in the 16-day NSCL-SLDP training program offered by NUEPA-SCERT, Delhi in collaboration in the year 2016-17 to serve as scaffolding heads for the P–54 program of the Directorate of Education, GNCT of Delhi, were included in the sample.

The majority of principals showed progress in their performance, according to the results, indicating that their abilities were positively impacted by the development of their skills and conceptual knowledge through reflective practices and collaborative training. The observed improvement can be ascribed to the fervent and enthusiastic engagement of individuals in the instruction, which stems from an innate desire to augment their proficiency. But it was noted that principals who were getting close to retirement might not have been as excited about learning and applying the SLDP, sticking to traditional approaches.

Therefore, it is imperative to bolster the legitimacy of the selection procedure for educating school principals in order to guarantee that individuals who genuinely possess a desire to improve school quality are selected and that resources are allocated prudently to these individuals.

The results of this research also show that head of schools can effectively manage their individual institutions by acquiring the necessary school management abilities through training. The study's conclusion indicates that school activities have generally improved while facing

minimal obstacles.

Keywords: School Leadership Development Programs, SLDP, SCERT, DIET, Training program, Principal, Head of Schools.

Introduction:

Effective school principals are essential to the success of educational institutions because they manage resources, support instructors, facilitate the learning process, and encourage collaboration with stakeholders. Principals have a wide range of responsibilities, which call for a variety of talents, such as managerial, social, entrepreneurial, and supervisory abilities. Principals must develop their leadership skills in the rapidly changing educational environment, which is marked by greater knowledge empowerment and globalization, in order to improve school performance. There is an urgent need for transformative leadership as schools move into the public sphere to guarantee equitable access to high-quality education and promote a happy learning environment. This shift is especially important for schools that are struggling with tight budgets and high standards. It provides school leaders with the knowledge and abilities to deal with issues that arise in the actual world of education by providing a long-term developing strategy.

Around the world, school leadership is a top priority on educational policy agendas, particularly as nations look to improve student results and overhaul their educational structures. Trends toward decentralization have given schools greater freedom and responsibility, which has sparked the development of School-Based Management (SBM) strategies. Nonetheless, the drive to raise student achievement levels across the board emphasizes the necessity of evidence-based strategies. The research highlights the critical role that strong school leadership plays in fostering academic achievement and stresses the need of giving principals decision-making authority.

The most excellent school programs, materials, and engaged stakeholders can all be undermined by inadequate leadership, underscoring the vital role that competent leadership plays in educational institutions. The goal of programs such as the School Leadership Development Program is to improve the quality of leadership by emphasizing quality assurance as a crucial component of educational reform.

School Leadership Development Program (SLDP):

The School Leadership Development Program (SLDP) is a specialized training program created to improve school principals' abilities, expertise, and general efficacy. This program, which usually lasts 16 days, combines theoretical understanding, useful tactics, and introspective exercises to strengthen educational leaders. SLDP's main goal is to enhance school leadership and management by focusing on important topics such principal skill development and managing a variety of school-related activities. The trends in the performance of the school principals were examined through self-reflection and teachers' responses.

SLDP participants share experiences and insights in order to increase their conceptual understanding through self-reflection and collaborative learning. The enhancement of principal performance is sometimes ascribed to the fervent and ardent engagement of persons in the training,

which stems from an innate urge to enhance their skills.

However, challenges could occur, especially when school principals are closer to retirement and might be less likely to embrace new procedures in favor of more established ways of overseeing school operations. According to the study, the SLDP application process needs to be improved in order to guarantee that candidates who genuinely want to improve school quality are chosen. This will maximize the investment of funds in staff members who can make a meaningful difference in schools.

It is important to make attempts to improve the capacities of school principals because not all of them have the professional talents needed for their positions. The school leadership development program seeks to educate principals both personally and professionally in order to turn schools into centers of excellence. The intention is to promote proactive leadership for school change, going beyond simple management and administrative duties. Effective training programs do exist, but a study found that their influence on school principals' job performance was not as great as anticipated.

Thus, the purpose of this study is to determine whether providing school principals with more training can actually enhance their effectiveness. The study's conclusions are essential for providing principals and legislators with guidance on how to improve the caliber of training provided to candidates for school leadership roles. The research highlights the importance of school leaders and the necessity for specialized training programs to give them the tools they need to run schools effectively, influence the school climate, motivate students, and develop the capacities of the teaching staff.

Review of related Literatures:

Reynolds et al. (2001), Increasing student success and the school's capacity to handle change are key components of school development. For Reynolds & Teddlie (2000), A collection of benchmarks and criteria from the international literature on school effectiveness and school improvement can be used to compare an individual's and one's own school's performance. The degree to which a school is able to produce high-quality outcomes with the help of an efficient system is referred to as its efficacy.

Even while schools only account for 20% of achievement, proponents of school effectiveness contend that their work has effectively disproved the notion that schools have no impact. They contend that despite the significant impact that a child's familial environment has on their development, schools not only matter but also provide value.

Nathan (2000) emphasized the necessity of providing new Heads with adequate training and increased induction. The majority of head of schools were teachers before being given the position of head. Their backgrounds are varied. While some of them might have extensive experience managing schools, others might not. Even individuals who already possess these skills might want to update or refresh them. Training to improve skills so becomes necessary for everyone.

Hoy & Miskel (2013), Over the years, leadership has changed and taken on various shapes,

from the conventional method to the contemporary viewpoint. The traditional leadership approach encompasses trait, behavioral, and situational styles, but the new perspective includes transformational and charismatic approaches.

There are numerous definitions for the term "leadership," but none of them are embraced by everyone (Yukl, 2006).

There are, nevertheless, three accepted definitions: Three fundamental ideas underpin leadership: first, leaders work within a specific organization to improve it; second, leadership is centered on organizational improvement (Leithwood & Jantzi, 2006; Marzano, Walters & McNulty, 2005); and third, leadership is about setting a direction (Jacobs & Jaques, 1990).

Coyle (2012), Research on the effects of educational leadership on student performance has advanced significantly since the notion of educational leadership first emerged. Effective management and leadership are essential for the growth of a school. While management offers structures and procedures for organizing, allocating funds, assessing, and carrying out day-to-day operations, leadership assists schools in establishing academic standards, objectives, and behavioral norms for the entire school community. Saleem, S. (2023), the phenomenological study set out to explore the SLDP experiences of SHs in enhancing leadership in Punjabi public schools. The sample was chosen by purposive criterion sampling, with the regions of central, southern, and northern Punjab included. The researcher employed a simplified version of the Stevick-Colaizzi-Keen Method to generate themes during semi-structured in-depth interviews and Focused Group Discussions (FGDs) while triangulating data sources. The study's main finding was that SLDP played a significant role in the improvement and growth of leadership techniques. The consequences of the SLDP school were seen to be aimed at specific future actions to obtain the best outcomes possible without wasting time to reorient its dimensions peculiar to native perspective. The report suggested that policymakers give the SLDP a careful examination.

Paik, S. (2014), Azim Premji University and the Karnataka State Institute (of Azim Premji Foundation) launched a longitudinal study to investigate the idea of school leadership in India and the results of a single structured school leadership development program (SLDP) in Karnataka. Karnataka's seven districts hosted the SLDP program for HTs and CRPs from particular blocks within these districts. This study examines conclusions drawn from a single set of data that was gathered from participants in the Ramanagara district.

Need and Rationale of the Study:

The objective of the Delhi Education Department is to transform schools into centers of excellence. With this goal in mind, the DoE, GNCT of Delhi's principals received training in school leadership via set design. The purpose of this study is to assess the efficacy of a 16-day School Leadership Development Program (SLDP) by looking at the effects of these programs on principal performance. Its objective is to examine how SLDP affects school effectiveness, with a particular emphasis on the management of school operations, the enhancement of principle competencies, and suggestions for resolving issues that face school administrators. In addition, it

aims to recognize and tackle the obstacles that they face throughout this.

Research Questions:

How does the School Leadership Development Program impact and influence the performance of principals?

Objectives of the Study:

1: To study the perception and feedback of principals towards SLDP training.

2: To study the extent of improvement in skills areas after SLDP training.

Methodology:

The present study was an exploratory survey research methodology.

Population

The population of the study comprises 25 HoSs of Directorate of Education GNCT of Delhi. The study was conducted on HoSs who have participated in the capacity building program-SLDP.

Sample, Sample Size and Sampling Technique

Sample was chosen by using purposive sampling technique. Head have attended school leadership development program for all days (10+2+2+2) in North District of Delhi under DIET, Keshavpuram. There was a high level of cooperation from the side of school administration; therefore, a sufficient number of HoSs participated successfully. The sample consisted of 12 Head of schools/principals.

Tool for Data Collection

The tool was developed in workshop by the team of experts. Mixed questionnaire was developed which consists of Likert type items. Demography related questions were in the beginning.

Procedure

The researcher selected school principals by purposive sampling techniques. Questionnaire was sent to the participants in Google forms therefore no permission was required from school administration to distribute the tool. The participant responses were recorded on the drive itself.

Data Analysis and Interpretation

The data was analyzed using the quantitative as well as qualitative technique.

Delimitations of the Study

The present study contains some limitations that the schools, selected for data collection, are headed by those Heads of Schools who have attended the training in all 10 days and review feedback workshop for the 6 (2+2+2) days forming the sample size of the study.

1. The study was delimited to Head of schools who have attended school leadership development program.
2. The study was delimited to North District of Delhi under DIET, Keshavpuram.

Results and Discussion:

The findings of the study are discussed below-

Demographics:

Under the demographical information gender ratio, age range, educational qualifications and experience as principal was studied which have been represented in table-1.2.3.and 4.

Gender Ratio:

The gender ratio was shown in Table -1 and figure-1.

Table-1: Gender Ratio	
Gender Ratio	**Percentage**
Male	41.7%
Female	58.3%

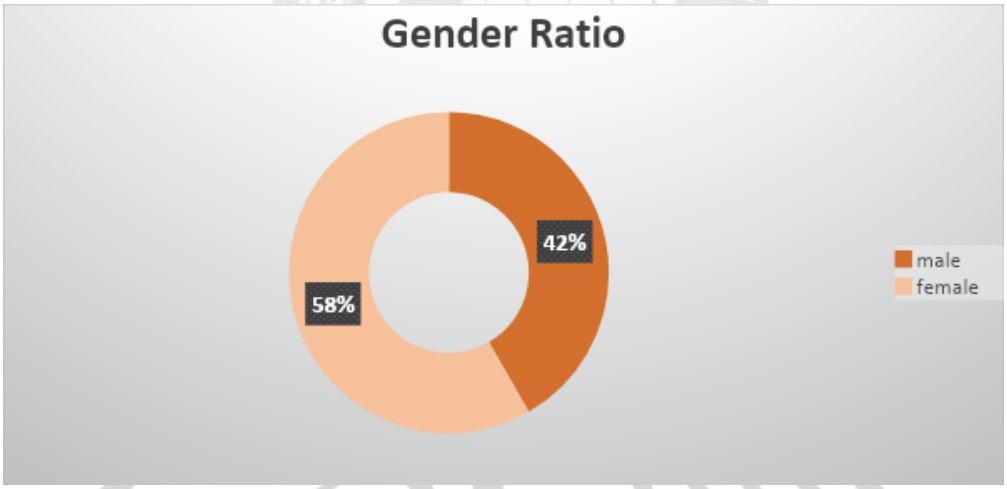


Figure-1: Gender Ratio

Table-1 indicates that the number of female principals was more than the number of male teachers. It is clearly shown in figure-1. Female teachers were 58.3%, and male teachers were 41.7%.

Age Range:

The age range was shown in Table -2.

Table-2: Age Range	
Age Range	**Percentage**
41-50 years	25%
51-60 years	75%

Table 2 illustrates that every participant falls within the age range of 41 to 60 years old. Seventy-five percent of the participants were in the 51–60 age range, and the remaining 25 percent

of responses were in the 41–50 age range.

Educational Qualifications:

The Educational Qualifications was shown in Table -3 and figure-2

Table-3: Educational Qualifications

Qualifications	Percentage
Post-Graduation	91%
M.Ed.	33%
M.Phil.	0
M. Sc.	8%
Ph.D.	17%

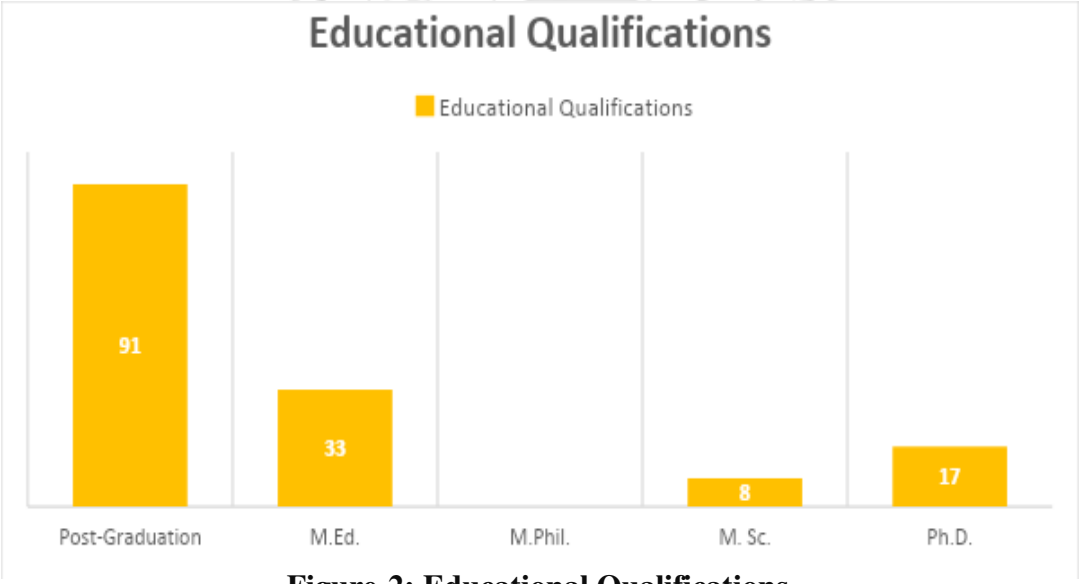


Figure-2: Educational Qualifications

Table-3 represents Ninety-one percent of the twelve responders are postgraduates, with thirty-three percent holding an M.Ed. Only one of the respondents, who has an M.Sc. degree in science. Fig-2 indicates that 17% of the respondents are Ph.D. holder.

Experience as a Principal:

The Experience as a Principal in DoE was shown in Table -4 and figure-3

Table- 4: Experience as a Principal in DoE	
Experience (in years)	**Percentage**
0-5 years	58%
6-10 years	25%
11-15 years	17%

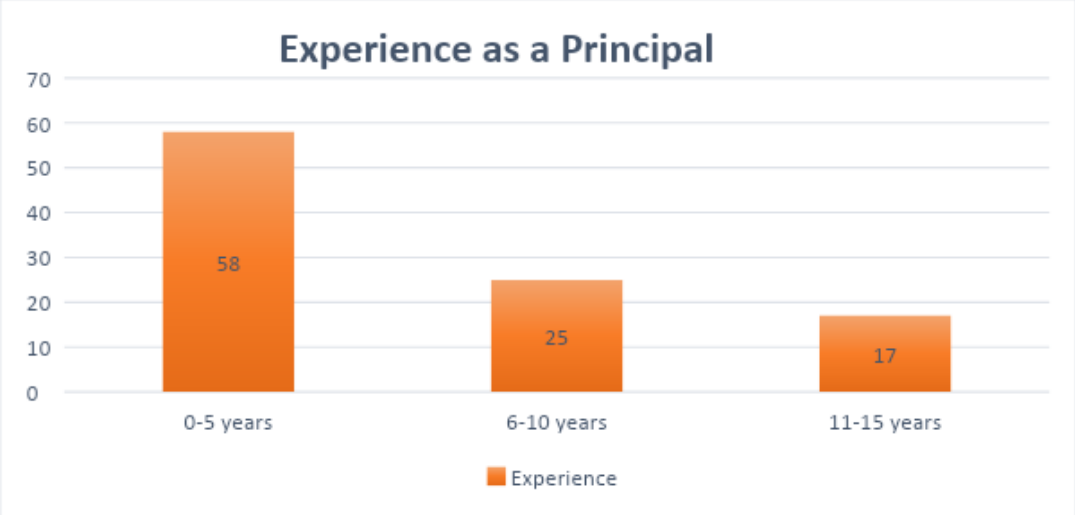


Figure-3: Experience as a Principal

Table-4 represents the number of years that the respondents have worked as a school administrator. Fig-3 reveals 58% of respondents have no experience or less than five years as a school administrator, 25% have roughly six to ten years of experience, and the remaining 17% have approximately eleven to fifteen years of experience.

Length of service of respondents in DoE:

Length of service of respondents in DoE was shown in Table -5 and figure-4

Table-5: Length of service in DoE	
Length (in years)	**percentage**
0-10 years	0
11-20 years	17%
21-30 years	66%
31-40 years	17%

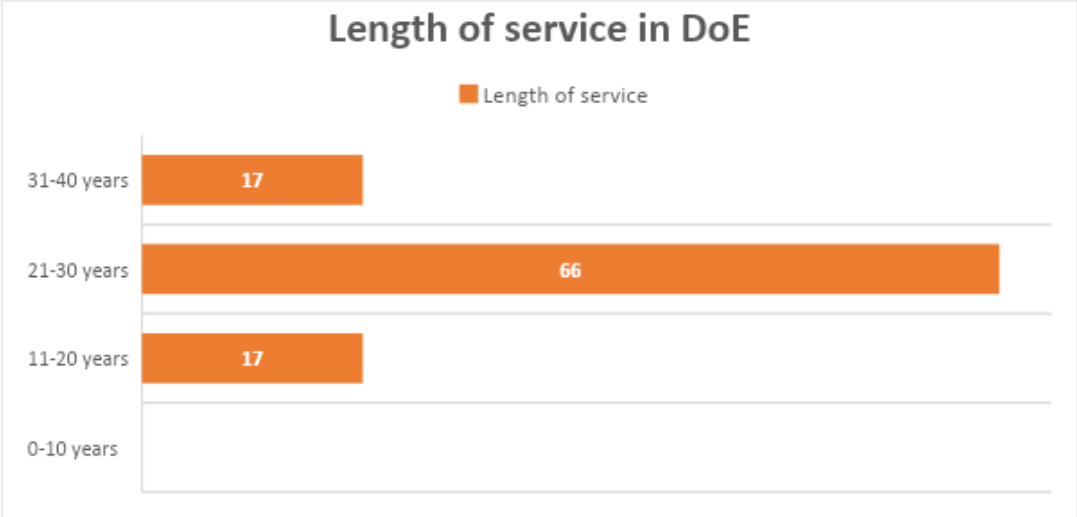


Figure-4: Length of service of respondents in DoE

Table 5 provides information about the duration of the respondents' employment at the Directorate of Education. A maximum of 66% of the respondents had worked for the DoE for roughly 21–30 years, with roughly 17% having worked for each of the periods of 11–20 and 31–40 years.

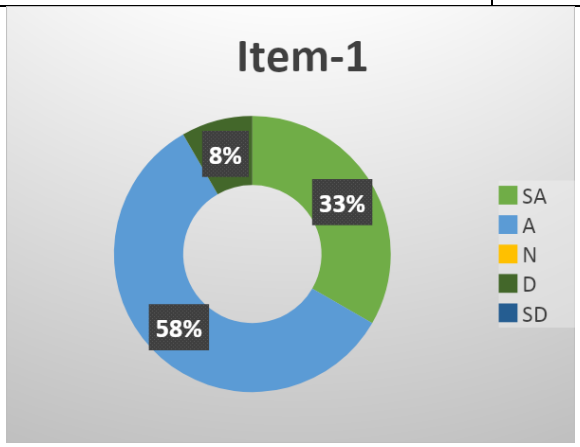
Findings for Objective -1

Objective -1: **To study the perception and feedback of principals towards SLDP training.**

Perception of respondents for SLDP in DoE was shown in Table -6 and figure-5

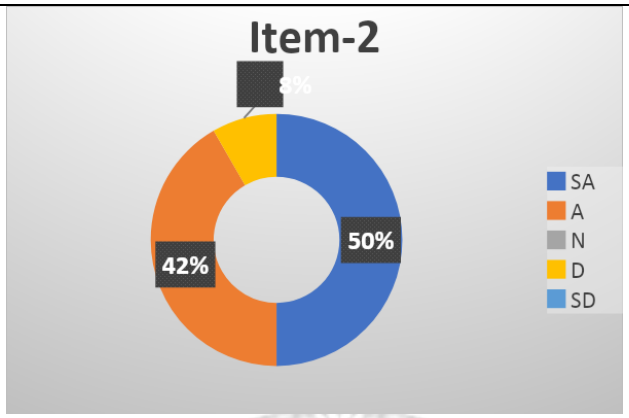
Table-6: perception of principals towards SLDP training

S.No.	Statements	SD	D	N	A	SA
1	Trainings helped me in performing better in school.	**0**	**1**	**0**	**7**	**4**



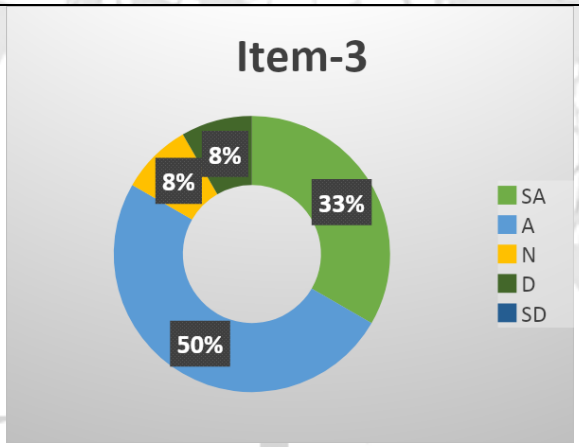
Findings for Item no. 1 indicates that 34% of the total participants were strongly agreed that Trainings helped in performing better in schools and 58% were agreed to this. Which shows more than 90% of the participants believe that trainings help in performing better in school.

2	Trainings built confidence in me for school functioning.	**0**	**1**	**0**	**5**	**6**



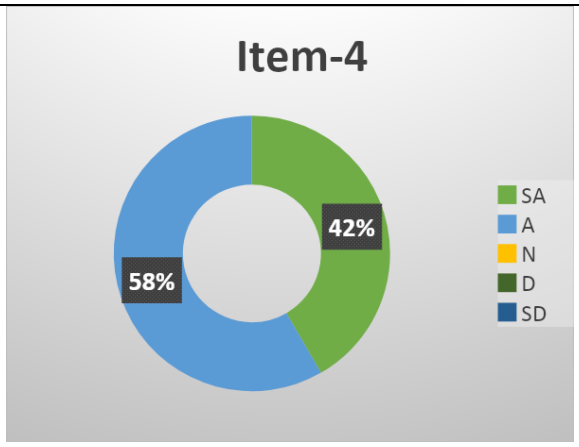
Findings for Item no. 2 indicates that 50% of the total participants were strongly agreed and 42% were agreed to this.

3	I was self-motivated to attend such trainings for HoSs.	**0**	**1**	**1**	**6**	**4**



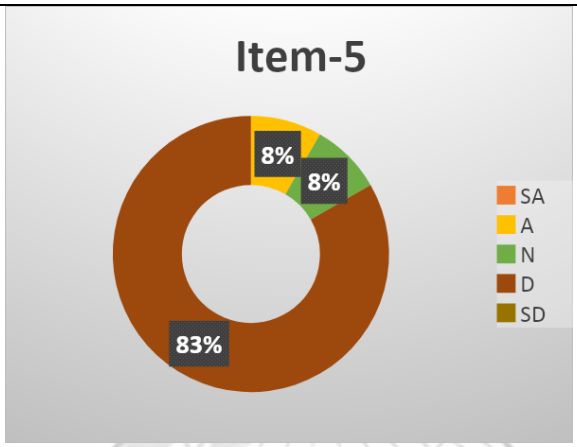
Findings for Item no. 3 indicates that 34% of the total participants were strongly agreed and 50% were agreed to this. 8% were disagreed.

4	Trainings are to be organised at regular interval for effective functioning of HoSs.	**0**	**0**	**0**	**7**	**5**



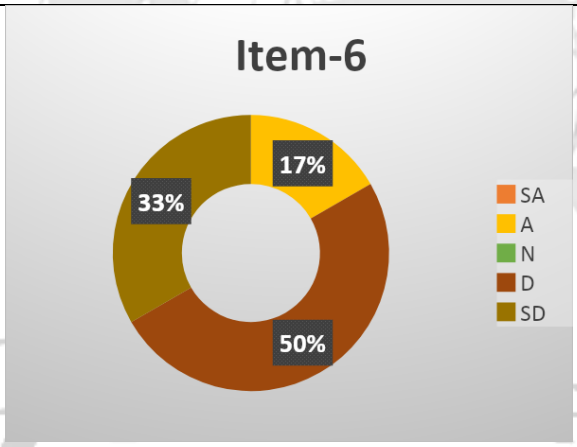
Findings for Item no. 4 indicates that 42% of the total participants were strongly agreed and 58% were agreed to this.

5	Trainings have not been effective as topics covered are not relevant to me.	**0**	**10**	**1**	**1**	**0**



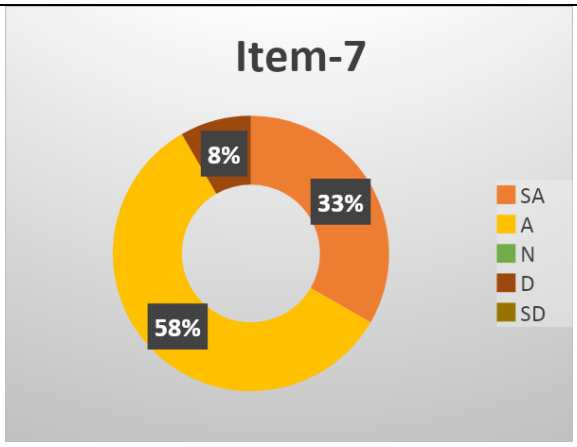
Findings for Item no. 5 indicates that 83% of the total participants were disagreed and 8% were agreed to this.

6	Trainings are wastage of time as unsuccessful in satisfying my needs.	**4**	**6**	**0**	**2**	**0**



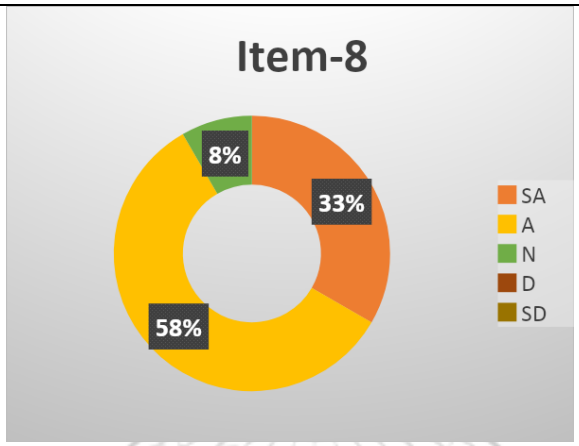
Findings for Item no. 6 indicates that 50% of the total participants were disagreed and 33% were strongly disagreed to this.

7	Trainings are provided in conducive environment.	**0**	**1**	**0**	**7**	**4**



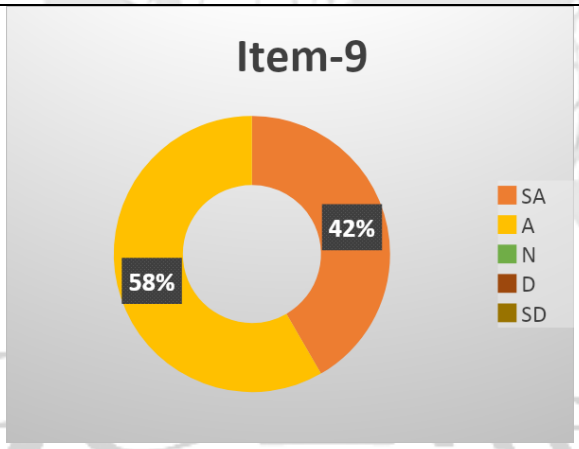
Findings for Item no. 7 indicates that 34% of the total participants were strongly agreed and 58% were agreed to this.

8	Communication skill of expert led to good understanding.	0	0	1	7	4



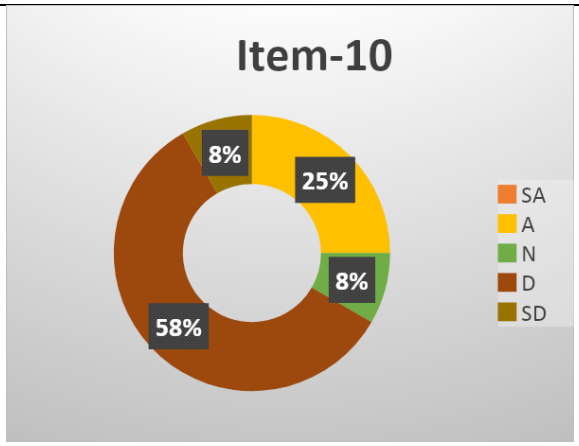
Findings for Item no. 8 indicates that 34% of the total participants were strongly agreed and 58% were agreed to this.

9	Trainings are good platform for sharing of experiences.	0	0	0	7	5



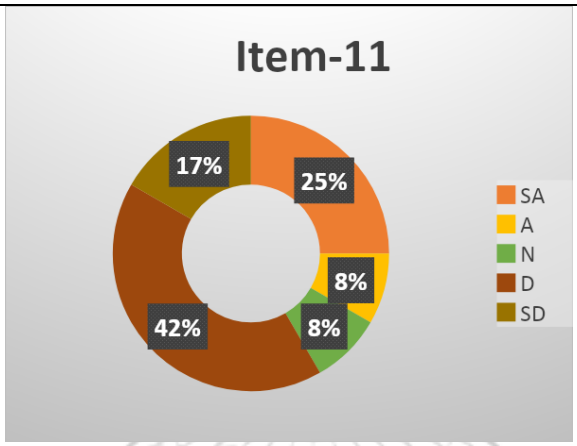
Findings for Item no. 9 indicates that 42% of the total participants were strongly agreed and 58% were agreed to this.

10	Attending training disrupted school functioning.	1	7	1	3	0



Findings for Item no. 10 indicates that 25% of the total participants were agreed and 59% were disagreed to this.

11	Residential trainings are more effective than non-residential training.	2	5	1	1	3



Findings for Item no. 11 indicates that 25% of the total participants were disagreed and 42% were disagreed to this.

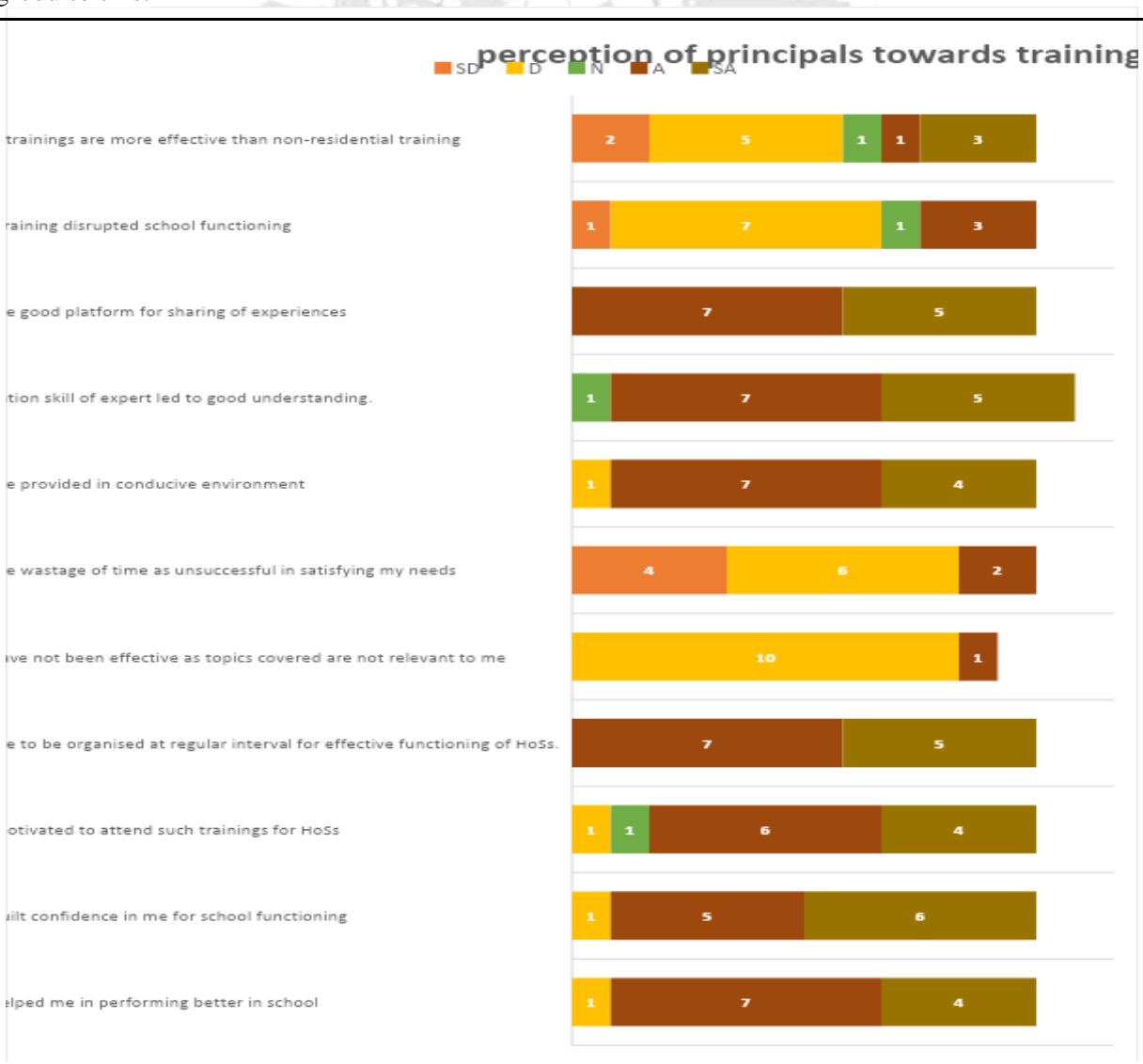


Figure-5: perception of principals towards training

Table-6 reveals that more than 80% of the respondents agreed or strongly agreed for the statements 1,2,3,4,7,8 and 9. Thus it can be interpreted that head of schools agreed and strongly agreed that trainings helped in performing better in school, trainings-built confidence for school functioning, they are self-motivated to attend such trainings and it should be organized at regular interval. Trainings are provided in conducive environment. Communication skill of expert led to good understanding. Trainings are good platform for sharing of experiences.

It also reveals that more than 80% of the respondents were disagreed or strongly disagreed to the statement 5 and 6. It can be interpreted that head of schools disagreed and strongly disagreed that SLDP trainings have not been effective as topics covered are not relevant. Also, that trainings are wastage of time as unsuccessful in satisfying needs. So, it can be interpreted that SLDP trainings are effective and successful too in satisfying needs.

Findings for Objective -2

Objective -2: **To study the extent of improvement in skills areas after SLDP training.**

Areas of skills improved after SLDP training was shown in Table -7 and figure-6.

Table-7: Areas of skills improved after SLDP training

S.No.	Areas of skills	SD	D	N	A	SA
1	Decision Making	1	1	3	3	4
2	Effective Communication Skills	1	0	4	3	4
3	Building Community Participation	1	1	2	4	3
4	Time Management	0	2	4	3	3
5	Instructional Leadership	0	0	4	4	4
6	Inter- Personal relationship with teachers, Students & Parents	1	0	2	5	3
7	Knowing Self/ Self Awareness	0	0	3	4	5
8	Handling Complaint mechanism	1	1	2	5	3
9	Team Building	1	0	1	6	4
10	Building Learning Environment and culture in School	0	1	3	4	4
11	Energetic and Enthusiastic for Innovation and change	0	0	2	6	4
12	Handling Conflict among staff, students, parents, etc.	1	0	4	3	4
13	Collaborative Functioning: Me to We	0	0	2	4	6
14	Yearly Planner for School	0	0	3	4	5
15	Stress Management	1	0	1	7	3
16	Information Management System	0	0	1	8	4

Table-7 indicates areas of skills that improved among head of schools after SLDP training. Fig-6 represents information management system, stress management, collaborative functioning, energetic and enthusiastic for innovation and change and team building were the areas improved most after SLDP training. On the contrary decision making, communication skills, time management and handling conflicts, these areas were improved only for approximately half of the

respondents.

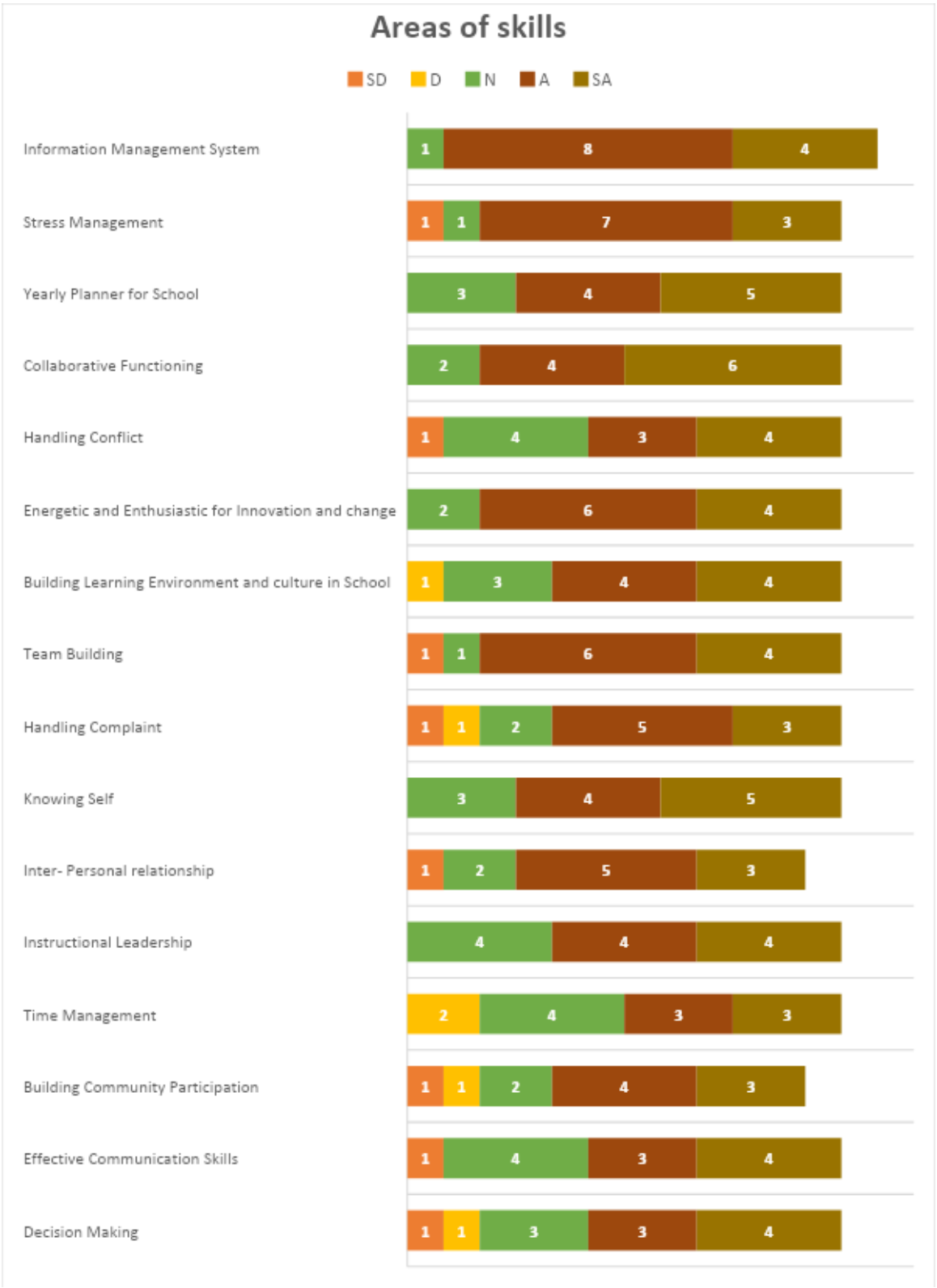


Figure-6: Areas of skills improved after SLDP training

Fig-6 represents Most respondents acknowledge that their decision-making, effective communication skills, ability to build community participation, time management, instructional leadership, interpersonal relationships with teachers, students, and parents, self-awareness and self-knowledge, ability to handle complaint mechanisms, team building, creation of a positive school culture, and ability to resolve conflicts with staff, students, parents, and other stakeholders have all improved as a result of the training.

Findings indicated that the principals believe the SLDP training had improved their skills.

Conclusion:

With respect to the training course, they said that the setting was excellent for learning, that the instructor's style of communication resulted in a clear comprehension, and that the courses serve as a forum for exchanging experiences. They disagreed with residential trainings even if they believed that attending trainings did have an impact on how the school operated during the school day.

Despite the study's focus is limited, its findings can be generalized to include different educational systems both inside and outside of Delhi. The results provide insightful information on the components of SLDP that have a major positive impact on student performance. In order to successfully apply these training components in their particular institutions, policymakers, school administrators, and educational administrators can build on the strong foundation this study provides.

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Recommendations And Implementation Of Teacher Education In Nep- 2020

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ABSTRACT –

Teacher's role is of prime importance in the whole education system. Teacher act as an architect of the Nation's pillars. Hence NEP 2020 focuses on reforms in the Teacher Education. This research paper delves into the recommendations and implementation strategies outlined in the National Education Policy (NEP) 2020 for teacher education in India. It underscores the pivotal role of well-trained and competent teachers in delivering high-quality education and fulfilling the objectives of the policy. The NEP proposes various reforms, including revamping teacher education programs, refining recruitment processes, fostering continuous professional development, and embracing innovative teaching methodologies. Key strategies for effective implementation discussed in the paper encompass rationalizing institutional architecture, promoting online and digital education, advocating for cultural and linguistic diversity, and ensuring the proficiency and empowerment of faculty members. These strategies aim to address the diverse needs of students, enhance educational quality, and create an enabling environment for teachers' professional growth.

KEY WORDS – NEP 2020, Teacher Education, Recommendations and Implementation.

INTRODUCTION

Teacher education has always been crucial in education because every society needs teachers to pass on its culture to the next generation. Teachers should be seen as knowledgeable professionals who provide information, serve as role models, help students learn, assess their progress, plan lessons, and develop resources. The National Education Policy (NEP) of 2020 was created 34 years after the last one in 1986. It was put together by former ISRO Chief K. Kasturirangan and got approved by the Union Cabinet on July 29, 2020, becoming the official National Education Policy 2020. The aim of the NEP 2020 is to change and improve how we teach future generations. It involves big changes to the education system, starting from when kids are very young, all the way up to university. This new policy is divided into four parts: Part I deals with school education, Part II focuses on higher education, Part III looks at other important areas, and Part IV is about putting the plan into action.

One important part of the NEP 2020 is about teachers and how they are trained. The policy makes suggestions to make sure we have good teachers at every level of schooling, with better working conditions, more support for their careers, and opportunities for them to keep learning and growing.

PURPOSE OF THE NEP 2020 FOR TEACHER EDUCATION

The policy aims to cultivate a community of skilled educators committed to delivering high-quality education, demonstrating exemplary performance, and upholding ethical and professional conduct standards.

OBJECTIVES OF THE STUDY:

1. To study the recommendation of NPE 2020 with respect to teacher education.
2. To study the strategies for effective implementation of NEP 2020.

METHODOLOGY:

The present study is qualitative and theoretical research in nature. The researcher has used content analysis method. This research work is mainly based on official documentary evidence and also various sources of information like books, e-books, journals, articles, websites and reports of various organizations, the internet, blogs, and written documents.

ANALYSIS-

The recommendation of NPE 2020 regarding teacher education

Framework of Teacher Education Programmes

As per NEP 2020, teacher education will be changed to multidisciplinary colleges and universities by 2030. It means that all colleges and universities will become multidisciplinary and will offer the courses in B.Ed., M.Ed., and Ph.D. in education. To become a teacher individuals must complete a 4-year integrated B.Ed. degree. In this Integrated pattern within 4 years students will complete the B.Ed. course along with Bachelor Degree of any stream. It should be noted that all B.Ed. programs will only be offered by accredited multidisciplinary higher education institutions. In B.Ed. programs, future teachers will be trained to use the newest technology in teaching. They'll also learn about the basics of reading and math, teaching kids with disabilities, using educational technology, teaching different levels of students, and using methods that focus on the students and involve working together. Moreover, upcoming educators will also learn about the importance of environmental awareness, conservation, and sustainable development through different programs. To make sure that highly talented students, particularly from rural regions, pursue teaching careers, numerous merit-based scholarships will be introduced nationwide for those enrolled in the 4-year integrated B.Ed. program. Additionally, to ensure fair and transparent selection of skilled candidates for the teaching profession, the policy suggests a national-level common entrance test for admission to all educational institutions. This test will include appropriate subject and aptitude assessments conducted by the National Testing Agency, tailored to accommodate the linguistic and cultural diversity of the country.

Ensuring the Consistency of High-Quality Teachers in the School System

The policy recommendation focuses on quality teacher's recruitment. Recruitment process should give equal importance to teacher's level wise entrance exam as well as classroom demonstration and Interview. The TET exam will be improved to have better questions and teaching methods. It will also include teachers from all types of schools, not just government ones, and cover all grades. Each state will conduct a technology-driven assessment of expected subject-

specific teacher vacancies to plan effectively. The policy suggests putting an end to too many teacher transfers, which can be harmful. It recommends using an online computer system to handle transfers, making sure everything is clear and fair.

Reconstruction of National Curriculum for Teacher Education

To improve teacher education, it's suggested to create a new and thorough National Curriculum Framework for Teacher Education (NCFTE 2021) based on the principles of the National Education Policy 2020. The National Council for Teacher Education (NCTE) will be responsible for developing NCFTE 2021, with input from the National Council of Educational Research and Training (NCERT). State Governments, relevant ministries and departments of the Central Government, and expert bodies have been consulted to make this framework. After that, NCFTE will be updated every 5-10 years to reflect changes and emerging needs in teacher education.

Continuous Professional Development and real evaluation of Teachers

NEP 2020 places significant emphasis on Continuous Professional Development (CPD) programs for teachers, offering various opportunities for self-improvement through workshops, online modules, and other modes. These initiatives aim to assess teaching skills, enhance abilities, and introduce advanced teaching techniques. Teachers are expected to engage in at least 50 hours of CPD annually, tailored to their interests and delivered through different methods. School principals are also encouraged to participate in CPD modules, focusing on leadership and management skills related to competency-based education. Performance appraisal standards will also be developed, and promotions and salary increases will not depend on tenure or seniority but on appraisal results. Versatile parameters will be used to evaluate teacher performance, including peer review, attendance, commitment, and other school work. This will ensure accurate evaluation of teacher performance.

STRATEGIES FOR EFFECTIVE IMPLEMENTATION OF NEP 2020

Rationalised Institutional Architecture

In order to meet the comprehensive expectations of NEP 2020, Institutional architecture should be designed accordingly. Higher education institutions should be transformed into large, well resourced, vibrant multidisciplinary institutions providing high quality teaching, research, and community engagement. There should not be rigid framework of the various streams like Arts, Commerce and Science. The Institution should make itself capable of catering to the diverse interest areas of the students. College affiliations will be gradually phased out within 15 years, and a systematic process will be instituted to grant graded autonomy to colleges. Eventually, the aim is for each college to evolve into either an autonomous degree-granting institution or become a constituent college within a university structure.

Online and Digital Education:

A detailed array of suggestions has been outlined to advance online education, taking into consideration of the recent surge in epidemics and pandemics. The aim is to establish readiness with alternative modes of high-quality education whenever traditional in-person methods are

impractical. To achieve this, a specialized unit within the Ministry of Human Resource Development (MHRD) will be established. This unit will oversee the development of digital infrastructure, digital content, and capacity building to cater to the e-education requirements of both school and higher education sectors. The teachers will be provided with required training session regarding online and digital education. Various online courses available on SWAYAM, MOOC platforms can be taken up for maintaining quality education in the classroom

Promote Cultural and Language diversity

NEP 2020 mainly focuses on catering various kinds of diversities and ultimately Inclusive Education. In a classroom, students are coming from different religions and cultures. It's important for teachers to communicate with everyone, even if they speak different languages or have different backgrounds. That's why teachers need to understand multiculturalism and different languages. For this teachers should be provided with trainings of local language awareness. Policy also want to strengthen Sanskrit and other language departments in colleges and universities. Plus, it suggest using local languages more in college programs.

Well qualified, trained and competent faculty

Teachers must have knowledge in multiple subjects, not just one, because the education system now emphasizes teaching different subjects together. This is particularly important in the new National Education Policy, where teachers are expected to teach across various disciplines. The New Education Policy (NEP) suggests ways to inspire and empower teachers. Policy want to have a clear, fair, and open process for hiring teachers. It also want to give teachers the freedom to decide what they teach and how they teach it. They'll reward teachers who do exceptionally well and give them opportunities to lead in schools or colleges. On the other hand, if teachers don't meet certain standards, they'll have to answer for it. They'll be held responsible if they're not doing their job properly. By 2030, only educationally sound, multidisciplinary, and integrated teacher education programmes shall be in force.

Innovative Teaching Methods & Individual differences:

In the process of Integrating education, the way of teaching matters more than what is taught. Classroom activities should help students understand their culture and teach them what they need to be good citizens. Teaching methods should be chosen carefully to help students learn and connect knowledge, skills, and attitudes in Teacher Education. The teaching methods like Cooperative learning, Group discussion, Peer teaching, Brain storming, Role play, Energizers, Storytelling, Dialogues, Service learning, Experiential teaching, Inquiry based learning and teaching which are helpful in making teacher education a subject of study, concern and action both in the classroom and beyond.

CONCLUSION -

The research paper explores the recommendations and implementation strategies outlined in the National Education Policy (NEP) 2020 for teacher education in India. It emphasizes the importance of well-trained and competent teachers in fostering high-quality education and achieving the goals of the policy. The NEP suggests various reforms, including restructuring

teacher education programs, enhancing recruitment processes, promoting continuous professional development, and embracing innovative teaching methods.

Effective implementation strategies outlined in the paper include rationalizing institutional architecture, promoting online and digital education, promoting cultural and language diversity, and ensuring the competence and empowerment of faculty members. These strategies aim to address the diverse needs of students, enhance the quality of education, and create a supportive environment for teachers to thrive. Ultimately, the NEP 2020 presents a comprehensive framework for transforming teacher education in India, with a focus on competency, professionalism, inclusivity, and innovation. Successful implementation of these recommendations and strategies will be essential in shaping the future of education and fostering the development of well-rounded individuals equipped to contribute positively to society.

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Flipped Learning: A Pedagogical Approach of Modern-Day Classrooms

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INTRODUCTION

The vision of Education drawn from NEP 2020 is developing an equitable and vibrant knowledge society. The NEP 2020 document reads: "The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution." [NEP 2020] The NEP 2020 further elaborates on the aim of education "The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. Ultimately, knowledge is a deep-seated treasure and education helps in its manifestation as the perfection which is already within an individual. All aspects of curriculum and pedagogy will be reoriented and revamped to attain these critical goals."

Keeping above goals in mind, it becomes mandatory to rationalize and modernize ways of teaching and updating pedagogies in consonance with 21st century needs. The educational practices and strategies should cater to enhance the knowledge of students, building their capacities and must inculcate values and dispositions which are necessary for holistic development of an individual.

As NEP 2020 recommends, "Education thus, must move towards less content, and more towards learning about how to think critically and solve problems, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new material in novel and changing fields. Pedagogy must evolve to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible, and, of course, enjoyable." In order to achieve these goals, our country must develop an education system based on equity and gender parity and which focusses on holistic development of its future citizens.

TEACHING METHODS

Education is a great leveller and is an important medium for achieving economic and social mobility, inclusion, and equality. The government must ensure timely interventions to create opportunities for all to enter and excel in the educational system irrespective of caste, creed, sex, gender etc. Keeping this view in mind, the teaching learning techniques must be designed in such a way that equips the learners with 21st century skills of critical exploration, collaboration, divergent thinking, decision making etc. But the traditional teaching methods fail to meet such requirements

and they prepare students to pass in exam through rote learning only. It seems there is lack of alignment between objectives, activities and assessments in traditional teaching.

Teaching learning methods can be broadly classified as Traditional and Modern methods based on processes and methods employed in teaching.

Traditional teaching methods

Traditional teaching methods which are also known as conventional teaching methods are still used in schools on a wider scale. In the traditional teaching methods, the classes are teacher centred and portray the teacher as a sage on stage whose work is to preach and profess. The environment of traditional class makes students passive listeners rather than allowing them to be active participants.

Traditional teaching methods encourage compliance, conformity and discourage innovative thoughts and divergent thinking among the students. Rules and regulations are exercised in the classroom in such a way that it keeps students' behaviour in check. Teachers are responsible to impart knowledge and maintain the standards of behaviour in the school. Traditional teaching methods lay emphasis on hand holding, dictating, constant guiding and even rebuking on mistakes at times. Such guided instructions make students dependent on teachers completely and are a great hindrance in development of decision making in students. Student psychology becomes overly dependent on instructions and often leads to underdeveloped thinking processes.

The Education system has been evolving with time. With the advent of science and technology, methods of teaching learning have gone digital and become more child focussed. In modern teaching methods, teachers teach every student on a different level and adjust their teaching styles to the academic needs of the students. They assume all students are different and apply different educational practices to them individually. The adjustment of teaching methods according to the academic and learning needs of students leads to Differential learning. Unlike old education, progressive teaching methods are based on activity, questioning, explaining, demonstrating and using collaboration techniques.

Modern Teaching Methods

The modern teaching method is more activity-based and child focussed. In the modern teaching method, curriculum teaching and planning are done keeping the learner as the primary target. In recent years, the scope of knowledge in the field of science and technology has dramatically increased and humans have adapted their lifestyles accordingly. As human minds have an innate curiosity to know and explore areas of different fields, they strive to adopt modern ways in this knowledge-driven era of technology. The characteristics of modern teaching methods include: Learner centred, Task based, Activity based, Collaborative, Integrative in nature, Interdisciplinary and Blended that employs both online and offline modes.

One of the very effective teaching - learning methods is Flipped teaching which is also known as Inverted learning. It hinges on the idea that students learn more effectively by using class time for small group activities and individual attention. Teachers then assign students lecture materials and

presentations to be viewed at home or outside of the classroom day, prioritizing active learning.

According to Kari M. Arfstrom, cofounder of the Flipped Learning Network, flipped learning is all about creating opportunities for active engagement. It's "a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter,".

The flipped learning approach is gaining value every year. According to a 2014 survey from the Flipped Learning Network, 78 percent of teachers said they had flipped a lesson, and 96 percent of those who tried it said they would recommend it to other educators. This indicates that flipped learning inspires teachers to update traditional methods and bring new technology into their classrooms using video, screencasts, and more.

Bergmann and Sams (2012) have described the Flipped Classroom approach in a wider view. According to them, the Flipped Classroom approach is a setting where students take charge of their own learning. This increases communication and contact time between students and teachers. The Flipped Classroom approach then gives priority to students where all students are engaged in their learning and the teacher becomes the "guide on the side" and not the "sage on the stage" as described by Baker (2000).

This implies that Flipped classroom makes the class more democratic where students are free to explore various resources for the topic and study them at their own pace and convenience. Moreover, the flipped classroom is more activity based and interactive where students learn collaboration and coordination by themselves. Flipped classroom does not restrict itself to sharing online videos, pictures, lectures or tutorials rather teacher is also involved in activities both before and after the class. The introduction of the content beforehand with the help of small lecture or by playing quizzes and games ensures equal participation of teachers and students.

The in-class time in a flipped classroom is usually noisy and disorganized as compared to traditional classes. In the Flipped Learning model, there is a switch from a teacher-centred classroom to a student-centred approach where class time is determined for exploring content of the topic in greater extent and creating a richer learning environment.

Essential components of Flipped Classroom

Moreover, lessons should include four major components in order to be entitled as the Flipped Classroom (Flipped Learning Network [FLN], 2014). First, educators should restructure the learning environment and time in a flexible way, considering the individual and group expectations and needs. Second, instructors need to teach the contents in detail, adopting a learner-centered approach and provide rich learning opportunities and activities reflecting a particular learning culture for the specific groups of students. Third, educators should regularly keep track of the difficulty level of the contents and the notes taken by the students as well as their progress, and they also apply active learning strategies that will maximize conceptual understanding of the students. Finally, the instructor should be a professional educator who continuously monitors

students in their learning processes, immediately provides feedback, and assesses students' outputs. Flipped teaching is a specific variety of blended instruction in which traditionally in-class activities (especially lectures) are done as homework, while traditional homework activities (like working through practice exercises) are done in class.

REVIEW OF RELATED LITERATURE

Bergmann and Sams (2012) have described the Flipped Classroom approach in a wider view. According to them, the Flipped Classroom approach is a setting where students take charge of their own learning. This increases communication and contact time between students and teachers. The Flipped Classroom approach then gives priority to students where all students are engaged in their learning and the teacher becomes the “guide on the side” and not the “sage on the stage” as described by Baker (2000).

The flipped teaching method has been used throughout history, although no specific name was given to it. Professors assigned readings, especially in the literature-based courses, as homework and discussed the topic during class. The homework assigned to students by teachers, to be completed at home was a nascent kind of Flipped teaching method which existed earlier also. In the late 1990s, several educators were independently attempting to find student-centered active learning teaching methods. Dr. Erik Mazur, known for peer instruction, is one of the earliest educators to have adapted flipped teaching. Lage et al. identified a gap between the various learning styles of students, such as group work, project-based learning, experiential learning, and the traditional lecture method that the educators used. However, there were limitations in incorporating alternate instructional approaches to meet the different learning styles among students while balancing the course content because it required increased class time to meet all the learning preferences of students Dr. J. W. Baker designed a teaching approach assigning lecture content as homework and class time to master the information. Advances in educational technology that were taking place at the time, such as access to multimedia and the ease of multimedia development by the faculty, allowed the birth of a new teaching method. Lage et al. and Baker coined the term “Inverted Classroom,” and Baker called it “Classroom Flip.” In this newly found teaching method, lectures were shifted from the classroom, and, during the in-class session, the students applied their knowledge in activities to strengthen their understanding of the topics.

In the mid-2000s, Jonathan Bergmann and Aaron Sams recorded their chemistry lectures, uploaded them to YouTube, and required their students to watch the videos before class to reach and develop concepts further for their students. By doing so, students were better prepared and had interactions that led to greater discussions. The overall classroom experience improved for both students and instructors. Another teacher Salman Khan taught math remotely to his young family members by uploading YouTube videos. These videos were reaching tens of thousands of students per month. The popularity of his teaching strategy led to the origin of Khan Academy, a non-profit organization that provides free lessons to all students. Although resources are freely available

through Khan Academy and similar platforms, students typically lean toward instructor-generated resources that appear to enhance their learning.

Flipped Teaching Design

The Academy of Active Learning Arts and Sciences is a non-profit organization dedicated to establishing the Global Standards framework for Flipped Learning. These standards were built on widely acknowledged norms and best practices worldwide. Based on these principles, the flipped teaching design consists of two major components: pre class and in-class activities. Students are introduced to the content individually in the pre class coursework. The application of knowledge, where students learn, practice, and master the material, occurs during the in-class sessions. Students become responsible for their learning, and it also allows opportunities to learn from peers.

The flipped classroom model is based on the idea that traditional teaching is inverted in the sense that what is normally done in class is flipped or switched with that which is normally done by the students out of class. Thus, instead of students listening to a lecture in class and then going home to work on a set of assigned problems, they read course literature and assimilate lecture material through video at home and engage in teacher-guided problem-solving, analysis and discussions in class. Proponents of flipped classroom list numerous advantages of inverting teaching and learning in higher education according to the flipped classroom model: it allows students to learn in their own pace, it encourages students to actively engage with lecture material, it frees up actual class time for more effective, creative and active learning activities, teachers receive expanded opportunities to interact with and to assess students' learning, and students take control and responsibility for their learning (Gilboy, Heinerichs, & Pazzaglia, 2015; Betihavas et al., 2015).

McLaughlin et al. (2013) and McLaughlin et al. (2014) analysis of pharmacy students' experiences of flipped classroom courses revealed that students prefer learning content prior to class and using class time for applied learning, and that students who learned through a flipped classroom approach considered themselves more engaged than students attending traditional courses. Similar findings were obtained by Davies, Dean, and Ball (2013) who compared three different instructional strategies in an information systems spreadsheet course, and showed that students attending the flipped classroom course also were more satisfied with the learning environment compared to the other treatment groups. Several studies report that students enjoy being able to learn in their own pace and that they prefer flipped classroom over traditional approaches (Butt, 2014; Davies et al., 2013). The design principles for the flipped classroom are recommended by Kim, Kim, Khera & Getman (2014) are as follows:

- Providing an opportunity for students to gain preliminary information before the class activity,
- Encouraging students to watch online lectures and be prepared before the class activity,
- Organizing methods of assessment,

- Linking in-class activities with out-of-class activities,
- Supplying clearly stated and well-organized guidance,
- Providing sufficient time for the completion of assignments,
- Promoting students to build a learning community,
- Providing immediate feedback on individual or group works,
- Providing the use of familiar technologies which can be accessed easily by students.

Enfield (2013) explained that students are encouraged to move out of the classroom to learn anytime and anywhere by flipped classroom approach. The most useful study strategy can be chosen and used by students while moving at their own pace through the instruction. Hung (2015) demonstrated that students' participation, satisfaction and performance showed a positive change after taking part in this pedagogical approach.

McLaughlin and Rhoney (2015) expressed that the awareness of instructors who used the flipped classroom approach has increased concerning teaching strategies. In addition, Kong (2014) stated that teachers improve the sort of resources they have, experience reflective discussions and share their instructional practices by using the flipped classroom model.

Reasons for Opting the Flipped Classroom

- Flipping helps busy and struggling students it helps students of all abilities to excel.
- Flipping allows students to pause and rewind their topic.
- Flipping increases student-teacher interaction and student-student interaction.
- Flipping changes classroom management.
- Flipping educates parents and is a great technique to deal with teacher absenteeism.

SUMMARY

The use of Flipped teaching helps teachers to deal effectively with many students at a time. It enables the teachers to articulately design their lesson plans and deliver them in the most effective way. If done properly, it ensures maximum participation of the entire class through group activities, leaving no one behind. Even the weak students are motivated to learn through various collaborative activities like team presentations, quizzes, discussions etc. Moreover, the use of technology in the classrooms in the form of personalized videos, lessons, lectures, online study material enables students to prepare the content beforehand at their own pace and comfort.

Since the students from Government schools are mostly from poor social economic background and many are First generation learners, hence the responsibilities of teachers increase many folds. They must work on foundational skills of students as well as support them to pursue Higher education too. Hence, use of innovative teaching learning strategies become imminent which works on developing cognitive, motor and affective abilities of students. One such method of learning is Flipped teaching which equip students with 21st century skills like critical thinking, problem solving, effective communication, critical thinking, etc.

WEBLINKS

https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
https://youtu.be/ZaWFpzZ1obI?list=PLJoALJA_KMOB5wMKSFaXj4IcDMUDDjwiy

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Aligning the National Education Policy 2020 with Sustainable Development Goals: A Pathway to Inclusive and Quality Education In India

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Abstract

The National Education Policy (NEP) 2020 marks a significant milestone in India's educational landscape, aiming to revitalize and transform the nation's education system. This paper provides a comprehensive analysis of NEP 2020, focusing on its key features, objectives, and implications for sustainable development. By aligning NEP 2020 with the Sustainable Development Goals (SDGs) established by the United Nations, this paper explores how the policy can contribute to the achievement of inclusive and quality education in India. Through a thorough examination of NEP 2020's provisions and their alignment with specific SDGs, this paper identifies synergies, challenges, and opportunities for advancing sustainable development through education in India.

Key Words: NEP-2020, SDG's, Vision, Quality Education, Challenges, Opportunities

Introduction

The National Education Policy (NEP) 2020 stands as a beacon of hope in India's quest for educational reform, poised to reshape the nation's educational landscape for generations to come. With its ambitious vision and comprehensive approach, NEP 2020 not only aims to address the shortcomings of the existing system but also envisions a future where every child has access to inclusive and quality education.In parallel, the Sustainable Development Goals (SDGs) set forth by the United Nations offer a universal blueprint for achieving a more sustainable and equitable world by 2030. Among these goals, SDG 4 stands out as a cornerstone, emphasizing the importance of quality education as a catalyst for progress across all sectors of development.The convergence of NEP 2020 and the SDGs presents a unique opportunity to synergize national

education policies with global sustainable development agendas. By aligning NEP 2020 with the SDGs, India can not only advance its educational objectives but also contribute significantly to the broader goals of poverty eradication, gender equality, environmental sustainability, and social inclusion. This paper seeks to explore the nexus between NEP 2020 and the SDGs, with a specific focus on how aligning these frameworks can pave the way for inclusive and quality education in India. Through a comprehensive analysis of NEP 2020's key features, objectives, and proposed reforms, alongside an examination of the SDGs' targets and indicators related to education, this paper aims to uncover the synergies, challenges, and opportunities inherent in this alignment.

By delving into the intricacies of NEP 2020 and the SDGs, this paper aspires to shed light on the transformative potential of education in driving sustainable development outcomes. It seeks to offer insights and recommendations for policymakers, educators, and stakeholders to leverage the synergies between NEP 2020 and the SDGs, thereby creating a pathway towards a more inclusive, equitable, and sustainable future for all in India.In essence, the alignment of NEP 2020 with the SDGs represents more than just a policy convergence—it embodies a shared vision for a better world, where education serves as a catalyst for positive change, empowering individuals and communities to realize their full potential and contribute to the collective pursuit of sustainable development goals.

Objectives:

1) To examine the potential of NEP 2020 on addressing key issues related to education and sustainable development.
2) To identify challenges and opportunities in implementing NEP 2020 to achieve SDGs in the education sector.

Methodology

This paper uses secondary data which is collected from various articles, newspapers, books and websites along with the draft of NEP-2020 to examine and present a comprehensive analysis of NEP 2020 and its alignment with Sustainable Development Goals (SDG's).It also helps us to understand various opportunities and challenges that we may encounter while achieving SDG's through the lense of NEP-2020

A comprehensive analysis of NEP-2020

The National Education Policy (NEP) 2020, introduced by the Government of India, represents a paradigm shift in the country's educational landscape. It aims to overhaul the existing system, addressing the challenges of access, equity, quality, and relevance in education. Here's a brief comprehensive analysis of NEP 2020:

1. Vision and Goals:

- NEP 2020 envisions an inclusive, equitable, and quality education system that fosters holistic development, critical thinking, and creativity among learners.
- It sets forth ambitious goals, including universalization of early childhood care and education, ensuring foundational literacy and numeracy, and promoting vocational education and lifelong learning opportunities.

2. **Structural Reforms**:

- NEP 2020 proposes several structural reforms, including the restructuring of school education into a 5+3+3+4 curricular structure (Foundational, Preparatory, Middle, and Secondary stages), with a flexible approach to curriculum and pedagogy.
- It emphasizes the integration of vocational education from the secondary level onwards, aiming to equip students with practical skills for employment and entrepreneurship.

3. **Curriculum and Assessment:**

- The policy advocates for a holistic, multidisciplinary, and competency-based curriculum that promotes experiential learning, critical thinking, and problem-solving skills.
- It recommends a shift from rote memorization to conceptual understanding and application oriented assessment methods, with a focus on formative assessment and reducing exam stress.

4. **Teacher Development:**

- NEP 2020 emphasizes the professional development of teachers through robust training programs, continuous support, and recognition of excellence.
- It proposes the establishment of a National Mission for Mentoring to provide mentoring support to newly recruited teachers, ensuring their effective integration into the education system.

5. **Use of Technology:**

- The policy recognizes the transformative potential of technology in education and advocates for its widespread integration to enhance teaching-learning processes, assessment practices, and educational access.
- It proposes the creation of a National Educational Technology Forum (NETF) to facilitate the exchange of ideas, best practices, and innovations in educational technology.

6. **Equity and Inclusion:**

- NEP 2020 prioritizes equity and inclusion, aiming to bridge the digital divide, eliminate disparities based on gender, socio-economic status, or geographical location, and ensure access to quality education for all learners.
- It proposes measures such as the setting up of special education zones in disadvantaged regions and the provision of scholarships, free boarding facilities, and other support mechanisms for marginalized students.

7. **Higher Education Reforms:**

- The policy advocates for holistic and multidisciplinary education in higher education institutions, with flexible curricula, multiple entry and exit points, and emphasis on research and innovation.
- It proposes the establishment of a National Research Foundation (NRF) to fund and promote research in all disciplines, fostering a culture of innovation and excellence.

Overall, NEP 2020 represents a bold and comprehensive framework for transforming

India's education system, with a focus on inclusivity, quality, relevance, and innovation. Its successful implementation holds the potential to unleash the full potential of India's youth and contribute to the nation's socio-economic development.

KEY FEATURES OF NEP-2020

The National Education Policy (NEP) 2020 introduces several key features aimed at transforming India's education system. Here's a brief overview:

1. **Foundational Stage:**
- The NEP restructures the school curriculum into a 5+3+3+4 format, with the foundational stage covering ages 3 to 8 years. This stage focuses on early childhood care and education, promoting play-based and activity-based learning.

2. **Multidisciplinary and Flexible Curriculum:**
- NEP 2020 emphasizes a multidisciplinary approach to education, allowing students to choose subjects based on their interests and talents. It promotes flexibility in curriculum design, enabling learners to pursue diverse learning pathways.

3. **Emphasis on Foundational Literacy and Numeracy:**
- The policy prioritizes foundational literacy and numeracy, aiming to ensure that every child achieves basic reading and arithmetic skills by Grade 3. It proposes remedial interventions and support mechanisms for students falling behind.

4. **Vocational Education and Skill Development:**
- NEP 2020 integrates vocational education into mainstream schooling from Grade 6 onwards, providing practical skills training and exposure to various trades and occupations. It emphasizes the importance of skill development for employability and entrepreneurship.

5. **Teacher Training and Professional Development:**
- The policy emphasizes the continuous professional development of teachers through robust training programs, mentoring, and support mechanisms. It promotes the use of technology for teacher training and capacity building.

6. **Assessment Reforms:**
- NEP 2020 advocates for a shift from rote memorization to competency-based assessment methods, focusing on conceptual understanding, critical thinking, and problem-solving skills. It encourages formative assessment and reduces reliance on high-stakes exams.

7. **Digital Education and Technology Integration:**
- The policy recognizes the transformative potential of technology in education and promotes its widespread integration in teaching-learning processes. It advocates for the creation of digital infrastructure and resources to support online and blended learning.

8. **Equity and Inclusion:**
- NEP 2020 prioritizes equity and inclusion, aiming to bridge the digital divide and eliminate disparities based on gender, socio-economic status, or geographical location. It proposes measures to provide equitable access to quality education for all learners.

9. Higher Education Reforms:

- The policy introduces reforms in higher education, including the establishment of multidisciplinary universities and colleges, flexible curricula, multiple entry and exit points, and emphasis on research and innovation. It aims to foster a culture of excellence and creativity in higher education institutions.

These key features of NEP 2020 represent a comprehensive framework for transforming India's education system, with a focus on inclusivity, quality, relevance, and innovation. They reflect the policy's vision of preparing learners for the challenges of the 21st century and equipping them with the skills and knowledge needed to thrive in a rapidly changing world.

Objectives of NEP-2020

The National Education Policy (NEP) 2020 outlines several key objectives aimed at transforming India's education system. Here's a brief overview:

1. Universalization of Education:

- NEP 2020 aims to ensure universal access to quality education from early childhood to higher education, with an emphasis on equity and inclusion. It seeks to bridge the gap between urban and rural areas, as well as between different socio-economic groups.

2. Foundational Literacy and Numeracy:

- The policy prioritizes foundational literacy and numeracy, aiming to ensure that every child achieves basic reading, writing, and arithmetic skills by Grade 3. It proposes remedial interventions and support mechanisms for students falling behind.

3. Curricular and Pedagogical Reforms:

- NEP 2020 emphasizes curricular and pedagogical reforms to promote holistic development, critical thinking, creativity, and problem-solving skills among learners. It advocates for a multidisciplinary and flexible curriculum that allows students to pursue diverse learning pathways.

4. Quality and Excellence in Education:

- The policy focuses on improving the quality and excellence of education across all levels, including school education, higher education, and vocational education. It emphasizes the importance of continuous professional development for teachers and the integration of technology in teaching-learning processes.

5. Promotion of Vocational Education and Skill Development:

- NEP 2020 aims to integrate vocational education into mainstream schooling from Grade 6 onwards, providing practical skills training and exposure to various trades and occupations. It seeks to equip students with the necessary skills for employability and entrepreneurship.

6. Equity and Inclusion:

- The policy prioritizes equity and inclusion, aiming to eliminate disparities based on gender, socio economic status, or geographical location. It proposes measures to provide equitable

access to quality education for all learners, including marginalized and disadvantaged groups.

7. **Promotion of Research and Innovation:**

- NEP 2020 emphasizes the importance of research and innovation in driving educational excellence and socio-economic development. It proposes reforms in higher education to foster a culture of research and innovation, including the establishment of multidisciplinary universities and colleges.

8. **Use of Technology in Education:**

- The policy recognizes the transformative potential of technology in education and promotes its widespread integration in teaching-learning processes. It advocates for the creation of digital infrastructure and resources to support online and blended learning.

These objectives of NEP 2020 represent a holistic vision for transforming India's education system, with a focus on inclusivity, quality, relevance, and innovation. They reflect the policy's commitment to preparing learners for the challenges of the 21st century and equipping them with the skills and knowledge needed to succeed in a rapidly changing world.

NEP-2020's Implications for SDG's

The National Education Policy (NEP) 2020 has significant implications for the Sustainable Development Goals (SDGs), particularly SDG 4: Quality Education, and other related goals. Here's a brief overview:

1. **Quality Education (SDG 4):**

- NEP 2020's emphasis on foundational literacy and numeracy, holistic development, and competency-based learning aligns with the objectives of SDG 4, which aims to ensure inclusive and quality education for all. By prioritizing foundational skills and promoting innovative pedagogies, NEP 2020 contributes to the achievement of SDG 4 targets, such as improving learning outcomes and enhancing educational access and equity.

2. **Gender Equality (SDG 5):**

- NEP 2020 recognizes the importance of gender equality in education and proposes measures to eliminate disparities based on gender. By promoting equitable access to education, reducing gender gaps in enrollment and retention, and empowering girls through education, NEP 2020 contributes to the achievement of SDG 5 targets, including ensuring equal access to education and eliminating gender-based discrimination.

3. **Reduced Inequalities (SDG 10):**

- NEP 2020 prioritizes equity and inclusion, aiming to eliminate disparities based on socio-economic status, geographical location, or other factors. By providing equitable access to quality education for all learners, including marginalized and disadvantaged groups, NEP 2020 contributes to the achievement of SDG 10 targets, such as reducing inequalities within and among countries.

4. **Quality of Life and Well-being (SDG 3):**

- Education plays a crucial role in promoting health, well-being, and overall quality of life. NEP 2020's focus on holistic development, life skills education, and mental health support aligns with the objectives of SDG 3, which aims to ensure healthy lives and promote well-being for all at all ages. By nurturing students' physical, mental, and emotional well-being, NEP 2020 contributes to the achievement of SDG 3 targets, such as reducing maternal and child mortality and promoting mental health and well being.

5. Partnerships for the Goals (SDG 17):

- Achieving the SDGs requires collaboration and partnerships among governments, civil society organizations, the private sector, and other stakeholders. NEP 2020 emphasizes the importance of stakeholder engagement, community participation, and multi-sectoral partnerships in education reform. By fostering collaboration and dialogue among diverse stakeholders, NEP 2020 contributes to the achievement of SDG 17 targets, such as strengthening global partnerships for sustainable development.

Overall, NEP 2020's alignment with the Sustainable Development Goals reflects its commitment to promoting inclusive, equitable, and quality education as a foundation for sustainable development. By addressing the key priorities and targets of the SDGs, NEP 2020 contributes to the broader agenda of building a more just, prosperous, and sustainable future for all.

NEP- 2020 and inclusive and quality education

The National Education Policy (NEP) 2020 places a strong emphasis on fostering inclusive and quality education across all levels, from early childhood to higher education. Here's how NEP 2020 promotes inclusive and quality education:

1. Equitable Access:

- NEP 2020 aims to ensure equitable access to education for all learners, regardless of their socio economic background, gender, caste, religion, or geographic location. It prioritizes reaching marginalized and disadvantaged groups, including girls, children from low-income families, and those with disabilities.

2. Early Childhood Care and Education (ECCE):

- The policy recognizes the critical importance of early childhood care and education (ECCE) in laying the foundation for lifelong learning and development. It proposes universalization of ECCE for children aged 3 to 6 years, with a focus on providing play-based and activity-based learning opportunities.

3. Foundational Literacy and Numeracy:

- NEP 2020 prioritizes foundational literacy and numeracy, aiming to ensure that every child achieves basic reading, writing, and arithmetic skills by Grade 3. It proposes remedial interventions and support mechanisms for students falling behind, including additional instruction and individualized learning plans.

4. Curricular Reforms:

- The policy advocates for a holistic, multidisciplinary, and flexible curriculum that promotes

critical thinking, creativity, and problem-solving skills. It encourages the integration of diverse perspectives, local knowledge, and indigenous languages into the curriculum to make education more inclusive and relevant.

5. Teacher Training and Support:

- NEP 2020 emphasizes the importance of continuous professional development for teachers to equip them with the knowledge, skills, and attitudes needed to create inclusive and quality learning environments. It proposes robust training programs, mentoring, and support mechanisms for teachers, including the use of technology for professional development.

6. Special Education and Inclusive Practices:

- The policy recognizes the needs of learners with disabilities and proposes measures to ensure their full participation and inclusion in mainstream education. It advocates for the creation of inclusive classrooms and schools, with appropriate accommodations, support services, and assistive technologies for students with special needs.

7. Assessment and Evaluation:

- NEP 2020 advocates for a shift from rote memorization to competency-based assessment methods, focusing on conceptual understanding, critical thinking, and application-oriented skills. It promotes formative assessment practices that provide timely feedback to students and support their learning progress.

8. Technology Integration:

- The policy acknowledges the transformative potential of technology in promoting inclusive and quality education. It advocates for the integration of technology in teaching-learning processes, assessment practices, and educational access, particularly for learners in remote and underserved areas.

Overall, NEP 2020's focus on inclusive and quality education reflects its commitment to creating an education system that caters to the diverse needs of all learners, promotes equity and social justice, and prepares students for active participation in a rapidly changing world. Through its comprehensive reforms and strategies, NEP 2020 seeks to build a more inclusive, equitable, and empowering education system for the benefit of all individuals and society as a whole.

Challenges and Opportunities for advancing SDG's through NEP-2020

Advancing Sustainable Development Goals (SDGs) through the National Education Policy (NEP) 2020 presents both challenges and opportunities. Let's explore them:

Challenges:

1. Resource Constraints:

- Implementing the ambitious reforms outlined in NEP 2020 requires significant financial resources. India faces challenges in allocating adequate funding to education, particularly in areas such as infrastructure development, teacher training, and technology integration.

2. Capacity Building:

- Ensuring effective implementation of NEP 2020 requires building the capacity of

educational institutions, policymakers, and teachers. This includes providing training on new pedagogical approaches, curriculum reforms, and technology integration, which may be resource-intensive and time-consuming.

3. **Socio-Cultural Factors:**

- India's diverse socio-cultural context poses challenges for implementing uniform education policies nationwide. Addressing socio-cultural barriers to education, such as caste-based discrimination, gender norms, and language diversity, requires tailored approaches and community engagement strategies.

4. **Digital Divide**:

- While NEP 2020 emphasizes the integration of technology in education, India still grapples with a significant digital divide, with disparities in access to digital devices, internet connectivity, and digital literacy skills. Bridging this divide is crucial for ensuring equitable access to quality education for all learners.

Opportunities:

1. **Holistic Approach to Education:**

- NEP 2020's holistic approach to education aligns closely with the integrated nature of the SDGs. By promoting interdisciplinary learning, skill development, and values education, NEP 2020 provides a framework for addressing multiple dimensions of sustainable development.

2. **Innovation and Collaboration:**

- NEP 2020 encourages innovation and collaboration among stakeholders, including government agencies, educational institutions, civil society organizations, and the private sector. This presents opportunities for leveraging diverse expertise, resources, and partnerships to advance SDGs through education.

3. **Focus on Equity and Inclusion:**

- NEP 2020's emphasis on equity and inclusion resonates with the principle of leaving no one behind, central to the SDGs. By prioritizing access to education for marginalized and disadvantaged groups, NEP 2020 contributes to reducing inequalities and promoting social justice.

4. **Technology Integration:**

- Leveraging technology for education delivery, teacher training, and educational access can accelerate progress towards SDGs, particularly in remote and underserved areas. NEP 2020's focus on technology integration presents opportunities for harnessing digital solutions to enhance learning outcomes and reach more learners.

5. **Global Engagement:**

- Aligning NEP 2020 with the SDGs enhances India's commitment to global sustainable development agendas. By harmonizing education policies with international frameworks, India can strengthen its partnerships with other countries and organizations, facilitating knowledge exchange and mutual learning.

In summary, while advancing SDGs through NEP 2020 may encounter challenges related to resources, capacity building, socio-cultural factors, and the digital divide, it also presents opportunities for innovation, collaboration, equity, and global engagement. By addressing these challenges and leveraging these opportunities, India can harness the transformative potential of education to contribute significantly to sustainable development outcomes.

Discussion and conclusion

The alignment between the National Education Policy (NEP) 2020 and the Sustainable Development Goals (SDGs) offers a transformative pathway towards inclusive and quality education in India. Let's delve into the discussion:

1. ***Common Vision for Education:***

- *NEP 2020 and the SDGs share a common vision of promoting inclusive, equitable, and quality education for all. Both frameworks recognize education as a fundamental human right and a key driver of sustainable development, encompassing social, economic, and environmental dimensions.*

2. ***Integration of SDG Principles:***

- *NEP 2020 integrates the principles and objectives of the SDGs into its policy framework, emphasizing the importance of holistic development, equity, inclusion, and sustainability. By aligning with SDG 4 (Quality Education) and other related goals, NEP 2020 reinforces India's commitment to achieving global sustainable development targets.*

3. ***Contribution to Multiple SDGs:***

- *NEP 2020's holistic approach to education contributes to multiple SDGs beyond SDG 4. For example, by promoting gender equality, reducing inequalities, enhancing health and well-being, and fostering innovation and entrepreneurship, NEP 2020 addresses the interconnectedness of sustainable development goals.*

4. ***Focus on Equity and Inclusion:***

- *Both NEP 2020 and the SDGs prioritize equity and inclusion in education, aiming to reach marginalized and disadvantaged groups, including girls, children with disabilities, and those from low income families. NEP 2020's emphasis on foundational literacy, numeracy, and vocational education aligns with SDG targets related to reducing disparities and ensuring equal access to education for all learners.*

5. ***Technology for Education:***

- *NEP 2020 recognizes the transformative potential of technology in education and advocates for its widespread integration to enhance teaching-learning processes, assessment practices, and educational access. This aligns with SDG 9 (Industry, Innovation, and Infrastructure) and SDG 17 (Partnerships for the Goals), emphasizing the role of technology in promoting sustainable development and fostering global partnerships.*

6. ***Challenges and Opportunities:***

- *While aligning NEP 2020 with the SDGs presents challenges such as resource constraints,*

capacity building, and socio-cultural factors, it also offers opportunities for innovation, collaboration, and global engagement. By addressing these challenges and leveraging these opportunities, India can accelerate progress towards achieving SDGs through education.

In conclusion, the alignment between NEP 2020 and the SDGs represents a convergence of national and global efforts towards advancing inclusive and quality education as a foundation for sustainable development. By synergizing policies, strategies, and actions, India can leverage the transformative potential of education to create a more just, prosperous, and sustainable future for all.

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NEP 2020: Transforming Education through AI Integration

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Abstract:

The National Education Policy (NEP) 2020 heralds a new era in the Indian education system, emphasizing the integration of technology to enhance learning outcomes. This article delves into the provisions of NEP 2020 related to Artificial Intelligence (AI) and explores its potential impact on education. It discusses the opportunities and challenges associated with the use of AI in education under NEP 2020.

Introduction:

NEP 2020 marks a significant departure from traditional educational paradigms, with a focus on harnessing technology to democratize learning and foster innovation. AI, with its ability to personalize learning experiences and optimize educational processes, emerges as a key enabler of NEP 2020's objectives.

NEP 2020 Provisions for AI Integration:

NEP 2020 recognizes the transformative potential of AI in education and outlines several provisions to facilitate its integration:

1. Emphasis on leveraging AI for adaptive learning and assessment.
2. Promotion of AI-driven tools for teacher training and professional development.
3. Establishment of AI labs in schools and higher education institutions.
4. Integration of AI in curriculum design to enhance relevance and effectiveness.
5. Encouragement of research and innovation in AI-enabled educational technologies.

Benefits of AI Integration in Education under NEP 2020:

The integration of AI in education under NEP 2020 offers numerous benefits:

1. Personalized Learning: AI algorithms can analyze student data and tailor instruction to individual learning needs, promoting deeper understanding and engagement.
2. Improved Teaching Effectiveness: AI-powered tools assist educators in lesson planning, content creation, and student assessment, freeing up time for personalized interactions with students.
3. Enhanced Access and Inclusivity: AI-enabled platforms enable remote and inclusive learning experiences, bridging geographical and socioeconomic barriers.
4. Data-Driven Decision Making: AI analytics provide insights into student performance and learning trends, enabling educators and policymakers to make informed decisions.
5. Innovation in Pedagogy: AI fosters creativity and innovation in teaching methods, encouraging educators to explore new approaches to instruction and assessment.

Challenges and Considerations:

Despite its potential benefits, the integration of AI in education under NEP 2020 poses several challenges:

1. Digital Divide: Unequal access to technology and internet connectivity may exacerbate educational inequalities.
2. Privacy and Ethics: AI applications raise concerns about data privacy, algorithmic bias, and ethical use of student data.
3. Teacher Training: Educators require training and support to effectively integrate AI tools into their teaching practice.
4. Infrastructure and Resource Constraints: Limited infrastructure and resources may impede the widespread adoption of AI in education, particularly in rural and underserved areas.
5. Job Displacement: The automation of certain educational tasks by AI may necessitate workforce reskilling and adaptation.

Future Directions and Recommendations:

To fully realize the potential of AI in education under NEP 2020, the following recommendations are proposed:

1. Investment in Infrastructure: Ensure equitable access to technology and internet connectivity across all educational institutions.
2. Capacity Building: Provide comprehensive training and professional development opportunities for educators to effectively utilize AI tools.
3. Ethical Guidelines: Develop clear guidelines and policies to govern the ethical use of AI in education and protect student data privacy.
4. Research and Innovation: Foster collaboration between academia, industry, and government to drive research and innovation in AI-enabled educational technologies.
5. Inclusive Implementation: Prioritize the needs of marginalized communities and ensure that AI integration efforts are inclusive and accessible to all learners.

Conclusion:

NEP 2020 represents a bold vision for the future of education in India, with AI playing a pivotal role in driving innovation and transformation. By embracing AI integration under NEP 2020, India has the opportunity to create a more equitable, inclusive, and effective education system that prepares students for the challenges of the 21st century.

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Teaching English for special / Specific purposes

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"Education is not preparation for life; education is life itself"
- John Dewey

ABSTRACT

ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning.

The ESP approach enhances the relevance of what the students are learning and enables them to use the English they know to learn even more English, since their interest in their field will motivate them to interact with speakers and texts. It has proved a dynamic field in the way it has stimulated innovation in approach and method on the part of the growing professional body of teachers engaged in such programmes. In fact, over recent years, ESP has emerged as a particular sub-division of the general activity of teaching English to native speakers as well as speakers of other language.

Key Words – Education, Decisions, Enhances, Relevance, Motivate

ESP concentrates more on language in context than on teaching grammar and language structures. ESP's focal point is that English is not taught as a subject separated from the student's real world/wishes: instead, it is integrated into a subject matter area important to the learners.

It is a relatively recent development in the major worldwide industry of Teaching English as a second Foreign Language. The field is a busy one, full of prospectors staking claims and working Seams. Ministries of Education in a number of countries regard it as one of the keys to their country's future development; firms and business organizations frequently build it into their training programmes; and for individual teachers and learners alike it has opened up new professional possibilities.

ESP is not a particular kind of language or methodology, nor does it consist of a particular type of teaching material. It is an approach to language learning, which is based on learner's need.

Since its emergence in the late 1960s, ESP has undergone a constant process of development, destining its scope, improving methodology, shaping its objectivity and orientations and enlarging the number of course books designed to serve its purposes.

While the training of students in specialized language skills has been carried out for many years, it is only in the last ten or fifteen years that professional attention has focused so clearly on the language needs of the specialist as opposed to the general language learner. Since the place of English as a foreign language in the curricula of educational and training institution is increasingly

justified in instrumental terms, the extent of teaching for specific and limited purposes is steadily growing. As a matter of fact, it has taken on all the appurtenances of a separate discipline. English for Specific Purposes (ESP), Close matching teaching content to learner requirements, seems to be the ideal answer in language teaching to the charge of educational irrelevance and inappropriacy.

Characteristics of ESP

1. ESP is destined to meet specific need of the learners.
2. ESP makes use of underlying methodology and activities of the discipline it serves.
3. ESP is centered as the language appropriate to these activities in terms of grammar, register, study skills discourse and genre.

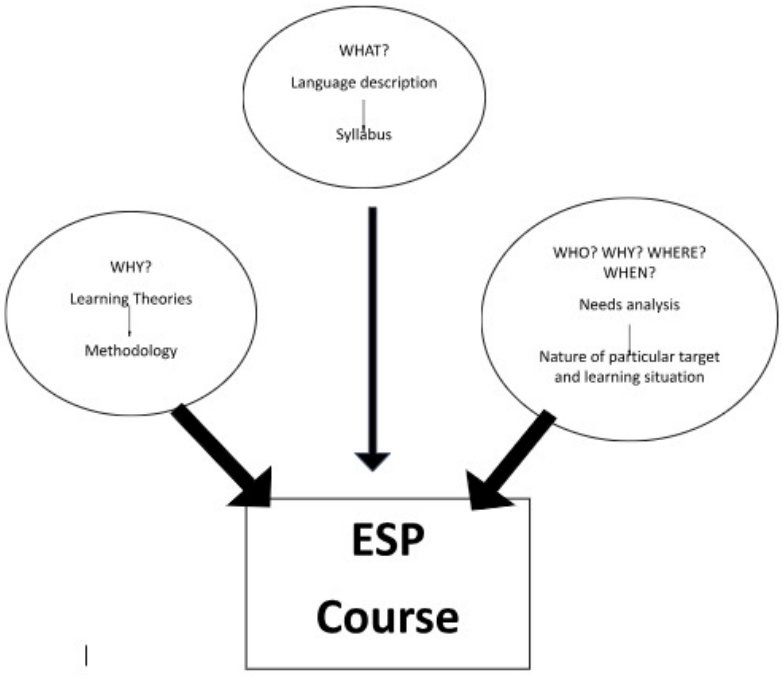
What are the Current challenges in teaching ESP: -

Course design:

ESP course should be based on three elements; First, it has to offer authentic materials, then it requires a purpose – related orientation, which means that a reasonable simulacrum of reality in which practitioners have the possibility to get involved into communicative tasks that replicate real situations is mandatory, and last but not least, it should be defined by self-direction.

- Why do the students need to learn?
- Who is going to take part in the process?
- Where is the learning process going to take place?
- When is it set to take place?
- What does the student need to learn?
- How will the learning be achieved?

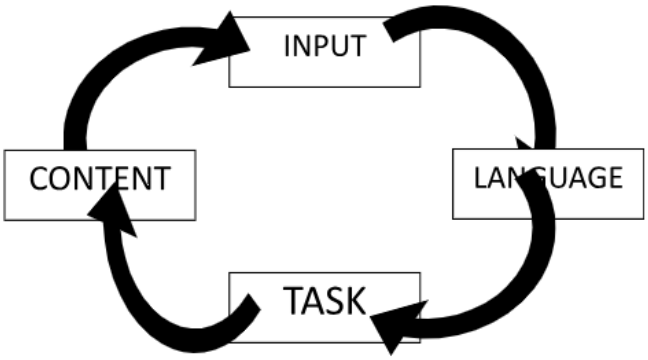
The diagram encompasses all the mentioned questions of the above



Teachers Presently have to face the prospect of being bombarded with a great number of ready-made course books which, however, have been designed with the purpose of easing the teachers of their worries of searching for authentic materials.

The four main elements that should be taken into account when teachers start writing or designing their own materials are the input, content focus, language focus and the task.

The diagram below emphasizes the way in which they influence are another and contribute to the creation of a various aspects of the language to be taught.



According to Hutchinson and Waters, "ESP teachers are all too often reluctant dwellers in a strange and uncharted land" the difficulties they have to face being grouped in three categories:

1. The lack of an ESP orthodoxy to provide a ready-make guide.
2. The new realms of knowledge the ESP teachers has to cope with.
3. The change in the status of English Language Teaching.

The Concept of ESP is still fairly new, although its practices may have existed for some time. ESP has established its own jargon. Definition of ESP are numerous, the concept being fluid enough to support a number of interpretations. To shuffle across and juggle around with numerous interpretations, one can compromise with the interpretation given below which stands in a kind of equilibrium state: -

Principle of Course Design

The kind of analytic itemization favoured by floods analysis of the kind previously considered does not provide one. It provides only a list of component parts. It seers clear that course design rust in some way be a projection of 'macro units' that is to say the frames of reference or routines which are associated with recognizable 'speech events' or schematic types, conventional patterns of language use.

ESP is a sound system and a creative force refined to some extent, which attempts, rigorously as possible, to analyze certain factors in a learning situation and to decide what extent those factors should influence syllabus design and the production of materials. This has affected a rewarding amount of research and innovation in syllabus and materials.

The value of ESP is that it is attempting to tackle fundamental problems in ELT and as a

matter of fact has already made valuable contribution to ELT theory and practice. It is been given a fresh impetus and will continue to play an important role to the teaching and learning of English language. The teaching English in every discipline is supposed to be different dependent on the specific needs of the language learning. It has been referred as **English for Specific or Special Purposes.**

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The Transformative Potential of Digital Learning Platforms and Tools in the 21st Century Classroom

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Abstract

In the ever-evolving landscape of education, the integration of digital learning platforms andtools has emerged as a pivotal catalyst for enhancing the learning experience. This research paper delves into the multifaceted benefits and challenges associated with the implementation of these innovative technologies within the classroom setting. Firstly, the paper explores the ways in which digital learning platforms and tools can foster increased engagement and personalization in the learning process. By leveraging interactive multimedia, adaptive algorithms, and data-driven insights, these platforms have the potential to cater to the diverse learning styles and needs of students, leading to enhanced knowledge retention and academic performance. Furthermore, the research examines the role of digital tools in facilitating collaborative learning, enabling seamless communication, and promoting the development of crucial 21st-century skills, such as critical thinking, problem-solving, and digital literacy. The paper also highlights the potential of these technologies to streamline administrative tasks, optimize resource allocation, and provide educators with valuable data-driven insights to inform their instructional practices. However, the research also acknowledges the challenges associated with the adoption and implementation of digital learning platforms, including issues of accessibility, equity, and digital divide. The paper delves into the importance of addressing these concerns to ensure that the benefits of these technologies are equitably distributed and accessible to all learners. In conclusion, this research paper presents a comprehensive understanding of the transformative potential of digital learning platforms and tools, offering insights and recommendations for educational stakeholders to harness the power of these innovations and shape the future of learning.

Keywords: Digital Learning Platforms, Educational Technology, 21st-Century Skills, Personalized Learning, Collaborative Learning.

Introduction

In the 21st century, the integration of digital technologies in the education sector has become an essential component of modern pedagogy, transforming the way students learn and educators teach. Digital learning platforms and tools have emerged as a pivotal catalyst for enhancing the learning experience, fostering increased engagement, personalization, and collaboration among learners. This research paper aims to delve into the multifaceted benefits and

challenges associated with the implementation of these innovative technologies within the classroom setting.

Digital learning platforms and tools offer a plethora of opportunities for educators to foster increased engagement and personalization in the learning process. By leveraging interactive multimedia, such as videos, animations, and simulations, these platforms cater to the diverse learning styles and needs of students, leading to enhanced knowledge retention and academic performance. Moreover, adaptive algorithms and data-driven insights enable educators to tailor the learning experience to individual students, ensuring that they receive targeted instruction and feedback that aligns with their unique learning needs.

In addition to enhancing engagement and personalization, digital learning platforms and tools also play a critical role in facilitating collaborative learning. By enabling seamless communication and interaction between students, these technologies promote the development of crucial 21st-century skills, such as critical thinking, problem-solving, and digital literacy. Furthermore, digital tools streamline administrative tasks, optimize resource allocation, and provide educators with valuable data-driven insights to inform their instructional practices.

However, the adoption and implementation of digital learning platforms and tools are not without challenges. Issues of accessibility, equity, and digital divide remain significant barriers to the equitable distribution and use of these technologies. For instance, students who lack access to reliable internet connectivity or digital devices may be disadvantaged in their learning, leading to a widening of the achievement gap. Furthermore, the digital divide exacerbates existing inequalities, disproportionately affecting students from low-income families, rural areas, and other marginalized communities.

To address these challenges, it is essential to ensure that the benefits of digital learning platforms and tools are equitably distributed and accessible to all learners. This requires a concerted effort from educational stakeholders, including policymakers, educators, and industry leaders, to develop and implement strategies that promote access to digital technologies and bridge the digital divide.

Theoretical Framework

In terms of digital learning platforms, the theoretical framework draws on the **Community of Inquiry (CoI) model**, which posits that effective learning occurs through the interaction of three interconnected elements: social presence, cognitive presence, and teaching presence. Social presence refers to the ability of learners to project themselves as real people in the learning community, while cognitive presence refers to the process of constructing and confirming meaning through sustained reflection and discourse. Teaching presence involves the design, facilitation, and direction of the learning experience, with the goal of promoting critical thinking, problem-solving, and knowledge construction

Literature Review

The integration of digital technologies and tools in education has been a significant area of

research in recent years. This literature review examines studies published from 2018 to 2023 that explore the challenges, opportunities, and prospects of adopting and using digital technologies in learning environments.

Artificial Intelligence (AI) and the Future of Teaching and Learning

AI systems and tools have the potential to transform teaching and learning by providing personalized learning experiences and real-time access to learning materials (Department of Education, 2023). However, research highlights the need for AI systems to account for the context of teaching and learning and to work well in educational practice (Department of Education, 2023). The development of AI-enabled formative assessment and feedback loops must center humans and provide empowering professional development to teachers (Department of Education, 2023). Developers and implementers of AI-enabled systems and tools must also address new sources of algorithmic bias and ensure assessment fairness (Department of Education, 2023).

Digital Literacy in the University Setting

Digital literacy is a critical skill for students in the university setting. Research highlights the importance of providing students with orientation training and opportunities to develop digital literacy skills (Gabriele et al., 2019; Istenic et al., 2016). Interventions that provide students with opportunities to engage with digital resources, develop specific applications, and reflect on their work can enhance digital literacy skills (Carl and Strydom, 2017; Kuhn, 2017; Pequeño et al., 2017; Elphick, 2018).

Challenges, Opportunities, and Prospects of Adopting and Using Digital Technologies in Learning Environments

The adoption of smart digital technologies in the education system has grown exponentially, creating new possibilities for self-regulated learning (Chandra and Roschelle, 2023). The COVID-19 pandemic has accelerated the transition from traditional face-to-face classrooms to web-based course offerings (Chandra and Roschelle, 2023). However, research highlights the need to evaluate, diagnose, and regulate learning behavioral engagement in distributed learning environments (Chandra and Roschelle, 2023).

E-Learning and Blended Learning

E-learning and blended learning have become increasingly popular in higher education (A., 2015; Swan and Shih, 2014; Tambouris et al., 2014; Tomas et al., 2015; Westermann, 2014). Research highlights the importance of course design, educator roles, and learning community and student identity in e-learning and blended learning (A., 2015; Swan and Shih, 2014; Tambouris et al., 2014; Tomas et al., 2015; Westermann, 2014). Comparison studies have shown that teaching and learning are influenced by more than teaching format alone (Bernard et al., 2014; Chigeza and Halbert, 2014; González-Gómez et al., 2016; Israel, 2015; Northey et al., 2015; Ryan et al., 2016; Southard, Meddaug and Harris, 2015).

Mobile Learning

Mobile learning (ML) has several benefits and advantages for students and teachers (Briz-Ponce et al., 2016; Dekhane& Johnson, 2014). ML can be a more natural way to engage students

in their learning process (Dingli & 2015). Research highlights the importance of designing ML

applications that are well perceived by students and provide easy and fun ways to learn (Criollo-C & Lujan-Mora, 2018a; Criollo-C &Luján-Mora, 2018b).

Research Design

Hypothesis

Null Hypothesis:

There is a significant difference in student engagement between digital learning platforms and traditional classroom settings.

Alternate Hypothesis:There is no significant difference in student engagement between digital learning platforms and traditional classroom settings.

Objective of the Research

1. Explore the ways in which digital learning platforms and tools can foster increased engagement and personalization in the learning process.
2. Acknowledge the challenges associated with the adoption and implementation of digital learning platforms, including issues of accessibility, equity, and the digital divide.
3. Offer insights and recommendations for educational stakeholders to harness the power of these innovations and shape the future of learning.

Sampling

The research sample comprises 40 participants, evenly split between 20 males and 20 females. This balanced gender representation ensures a diverse perspective and allows for a comprehensive analysis of the impact of digital learning platforms across different demographic groups.

Result and Data Analysis

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-statistic
Usage of Digital Learning Platform	1.2193	1	1.856	0.155
Residuals	7.8813	36	0.219	-

(Fig 1)

Based on the p-value of 0.155, which is greater than the typical significance level of 0.05, we would fail to reject the null hypothesis.

Conclusion

In conclusion, this paper has examined the theoretical frameworks that underpin online education and the benefits and challenges of implementing digital learning platforms in the classroom. The review of literature has highlighted the importance of connectivism, online collaborative learning, and Picciano's Multimodel Model for Online Education in shaping effective

online education. The benefits of digital learning platforms include increased engagement, personalization, and accessibility, while the challenges include issues of equity, accessibility, and the need for training and support for educators.The findings of this paper suggest that online education has the potential to transform the way we learn and teach, but it is important to approach it with a clear understanding of the theoretical frameworks that underpin it. By incorporating these theories and frameworks into online education practices, educators can create engaging, effective, and accessible learning experiences for all students. However, it is also important to address the challenges of online education, including issues of equity, accessibility, and the need for training and support for educators.

However, research also emphasizes the need to address challenges such as algorithmic bias, digital divide, and the need for human-centered AI-enabled formative assessment and feedback loops. The integration of digital technologies in education must be guided by research-based knowledge and feedback loops that analyze empirical evidence. The development of new educational platforms and the improvement of existing ones must be responsive to the learners' characteristics and situations, not just in terms of narrow cognitive attributes. The future of education lies in the effective integration of digital technologies that enhance learning experiences, promote personalized learning, and foster the development of 21st-century skills.In conclusion, the integration of digital learning platforms in the classroom is a complex and multifaceted process that requires careful consideration of the theoretical frameworks that underpin online education. By approaching this process with a clear understanding of these frameworks, educators can create effective, engaging, and accessible learning experiences for all students.

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Study of opportunities and challenges of Open-Source Software in the Education system

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Abstract:

Studying the opportunities and challenges of open-source software (OSS) in the education system is crucial for several reasons. Firstly, it provides insights into how OSS can democratize access to quality educational resources by offering cost-effective alternatives to proprietary software, thereby bridging the digital divide and promoting inclusivity. Secondly, understanding the challenges associated with OSS adoption, such as concerns regarding technical support, compatibility issues, and resistance to change, allows educators and policymakers to develop strategies to mitigate these obstacles effectively. Moreover, investigating the potential benefits of OSS, such as flexibility, customization, and community-driven development, empowers stakeholders to leverage these advantages in designing innovative teaching and learning experiences tailored to diverse educational contexts. Overall, a comprehensive study of the opportunities and challenges of OSS in education is essential for fostering informed decision-making, promoting digital literacy, and maximizing the transformative potential of open-source technologies in shaping the future of learning.

Keywords: Opportunities, challenges, Open-Source Software, Education system.

Introduction:

Open-source software (OSS) stands as a cornerstone of collaborative innovation, offering code that is openly accessible, modifiable, and redistributable by anyone. Its significance lies not only in its cost-effectiveness but also in fostering a culture of transparency, peer review, and community-driven development. Embracing OSS empowers users to customize solutions to their specific needs, promotes knowledge sharing, and reduces dependency on proprietary systems. From operating systems to educational tools, OSS embodies the ethos of collective intelligence, driving progress across industries while embodying principles of accessibility, freedom, and innovation.

Opportunities of Open-Source Software in Education system

Open-source software (OSS) presents a myriad of opportunities within the education system, offering cost-effective alternatives to proprietary software while fostering a culture of collaboration and innovation. One significant advantage is the affordability of OSS, which enables schools and educational institutions with limited budgets to access high-quality software solutions without incurring substantial licensing fees. Moreover, OSS encourages the development of a

vibrant ecosystem of educational tools, allowing educators to leverage a diverse range of resources tailored to their specific teaching objectives and student needs. By embracing OSS, educational institutions can promote digital literacy, empower students with hands-on learning experiences, and cultivate a culture of openness and knowledge sharing.

Additionally, OSS provides opportunities for educators to actively engage students in the learning process through collaborative software development projects, coding initiatives, and open-access resources. By involving students in the creation and customization of software tools, OSS not only enhances their technical skills but also fosters creativity, problem-solving abilities, and critical thinking. Furthermore, the transparent nature of OSS encourages peer review and feedback, enabling continuous improvement and innovation within educational software ecosystems. Overall, the adoption of OSS in education not only expands access to technology but also nurtures a community-driven approach to learning, preparing students for the challenges and opportunities of the digital age.

Challenges of Open-Source Software in the Education system

Despite its numerous advantages, open-source software (OSS) faces several challenges in the education system. One major challenge is the perception that OSS lacks the same level of reliability and support as proprietary software, leading to concerns about technical assistance and troubleshooting. Educational institutions may also encounter difficulties in finding qualified personnel with the necessary expertise to manage and maintain OSS systems, potentially limiting their adoption and effectiveness.

Another challenge is the issue of interoperability and compatibility with existing systems and software. Integrating OSS into complex educational environments, which often rely on a variety of software applications and platforms, can be challenging and may require significant time and resources. Additionally, there may be resistance to change among educators and administrators who are accustomed to using proprietary software, highlighting the importance of effective training and support programs to facilitate the transition to OSS. Despite these challenges, the benefits of OSS in terms of cost savings, flexibility, and community support make it a compelling option for education systems looking to enhance their technological capabilities.

Literature Review:

1. **Hawthorne, M. J., & Perry, D. E. (2005),** In the research titled "Software engineering education in the era of outsourcing, distributed development, and open-source software: challenges and opportunities"Software engineers must be prepared to lead system requirements engineering, building solutions using internal and third-party components and distributed development resources, and integrating software elements from these diverse sources into coherent product families using optimal component and connector architectures to stay relevant. Distributed resource system development requires superior product and project management, organization and process engineering, and interpersonal and cross-cultural communication abilities.
2. **Thankachan, B., & Moore, D. R. (2017),** In the research titled "Challenges of implementing Free and Open-Source Software (FOSS): Evidence from the Indian educational

Setting"This study identified critical challenges to FOSS adoption in Indian education and solutions to overcome them. This study confirms previous research (Brunvard et al., 2010; Sarrab et al., 2013; Sharma & Adkins, 2006; Woodall & Marius, 2013) that adopting FOSS education is challenging due to the lack of support systems and the need for localization. The lack of FOSS-trained support staff is a key obstacle to FOSS adoption in India. Due to widespread adoption, proprietary software applications have readily available support. Additionally, staff skilled in Unix struggle to support Linux-based applications. Recently, institutions have included FOSS-based syllabi in their engineering curriculum to prepare students for working with FOSS applications. Companies are adopting FOSS platforms to advance the industry, earn revenue, and improve support systems. Localization is a significant difficulty in FOSS project development.

3. **Mackie, C. J. (2008),** In the research titled "Open source in open education: Promises and challenges. Opening up education: The collective advancement of education through open technology"Networked computing has clearly impacted supply-chain management and retail, leading to changes in organizational practices across several disciplines and types of organizations. Educational change is comparable in nature and extent. Successful groups throughout change have a shared commitment to exceptional performance, open communication, and group accomplishment. This commitment relies on clear theories regarding causation, and regular outcome measurement and comparison to confirm consistency. Successful education transformation requires a strong commitment.

4. **Hepburn, G. (2005),** In the research titled "Open-source software and schools: New opportunities and directions"Moving to OSS ultimately involves schools making better judgments with taxpayer funds and establishing new educational ICT principles. Schools aim to provide adequate ICT exposure to kids while minimizing negative effects on school and program health. While schools have made significant progress in their ICT infrastructure, the current issues warrant reevaluating their software approach. Recently, OSS has matured to be a viable option for most school computing needs. All schools should carefully investigate OSS due to its advantages over proprietary software in cost, flexibility, and ethical and social considerations. Proprietary software in schools should be justified based on cost-benefit compared to OSS and other options. As schools attempt to maximize the benefits of ICT in teaching and learning, the growing usage of OSS will be a helpful resource.

5. **Baraniuk, R. G. (2008),** In the research titled "Challenges and opportunities for the open education movement: A Connexions case study"Following the foregoing conversations, we could pursue aims to reopen the gates and advance open learning: Effective open learning requires cooperation from policy makers, government officials, and practitioners, including lecturers and teachers.

6. **Hepburn, G., &Buley, J. (2006),** In the research titled "Getting open-source software into schools: Strategies and challenges"OSS users can perceive its educational benefits. The affordable software and increased flexibility in usage and sharing make it a significant resource for schools. OSS and its knowledge are freely available, making acquisition and installation easy. Helping

educators, administrators, and technical support people recognize the potential of open-source software for teaching and learning is crucial, as is creating an implementation approach that removes sociopolitical constraints.

7. **Courant, P. N., & Griffiths, R. J. (2006),** In the research titled "Software and collaboration in higher education: A study of open-source software. Organization for Open-Source Software Study"We conclude that there is evidence of market failure in administrative systems, offering an opportunity for the community to pursue more effective and cost-efficient solutions and a stronger marketplace. We believe that collaborative initiatives to build open-source applications can improve software for partner institutions and benefit the community if they attract a large contributor base. This idea aims to bridge the gap between software developers and HE users, who have complex and unique needs that are not well understood. It is also built on HE's strong history of developing its own software.

Data Analysis and Research Methodology:

The study is based on primary data. Information is collected from 140 faculties of schools and colleges. A survey was conducted using a questionnaire method to collect the information. Convinces sampling method is used for collection of data. For analysis of data SPSS software is used. To study the objective descriptive as well as inferential statistics is used.

Demographics

Sr No.	Particular	Category	Frequency	Percent
1	Gender	Male	83	59.3
		Female	57	40.7
2	Qualification	Graduate	25	17.9
		Postgraduate	81	57.9
		Doctorate	7	5.0
		Professional	27	19.3
3	Age of Respondents	Up to 30 Years	36	25.7
		30 to 40 Years	46	32.9
		40 to 50 Years	27	19.3
		More than 50 Years	31	22.1
4	Level of Teaching	School	72	51.4
		College	68	48.6

The data presents a demographic breakdown of respondents based on gender, qualification, age, and level of teaching. Among the respondents, 59.3% were male and 40.7% were female. In terms of qualification, the majority held postgraduate degrees (57.9%), followed by professional qualifications (19.3%), graduates (17.9%), and a smaller percentage with doctorates (5.0%). Regarding age distribution, respondents were fairly evenly distributed across different age groups, with the highest representation in the 30 to 40 years bracket (32.9%). Lastly, in terms of teaching

level, the sample was split between school (51.4%) and college (48.6%) educators. This comprehensive overview provides insights into the composition of the respondent pool across various demographic parameters.

Data Analysis

Objective 1 To study the perception of Teachers towards opportunities for OSS.

To study the above objective following hypothesis is obtained.

Null Hypothesis H_{01}: There is no significant difference in the perception of teachers towards opportunities for open-source software.

Alternate Hypothesis H_{11}: There is a significant difference in the perception of teachers towards opportunities for open-source software.

To test the above null hypothesis One sample t-test is applied. The results are as follows.

One-Sample Test				
	Test Value = 60			
	t	df	P-value	Mean Difference
Opportunities	29.499	139	.000	28.238

Interpretation: The above results indicate that the calculated p-value is 0.00. It is less than 0.05. Therefore, one sample test is rejected. Hence Null hypothesis is rejected and the Alternate hypothesis is accepted.

Conclusion: There is a significant difference in the perception of teachers towards opportunities for open-source software.

Findings: To understand the findings of the hypothesis, the mean score of the perception of teachers towards opportunities for open-source softwareis obtained and shown below.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Opportunities	140	88.24	11.326	.957

The one-sample statistics indicate that out of 140 respondents, the mean score for opportunities is 88.24, with a standard deviation of 11.326 and a standard error mean of .957. This suggests that, on average, respondents perceive a relatively high level of opportunities.

Ranks	
	Mean Rank
8.1 It is time saving	3.06
8.2 It is convenient to keep records	4.58
8.3 It is suitable to collect the information.	3.78

8.4 There is a high accuracy of Information	3.20
8.5 It is interesting to use	3.20
8.6 It is creative to make a presentation	3.20

The ranks provided suggest various aspects related to the use of a certain system or tool:

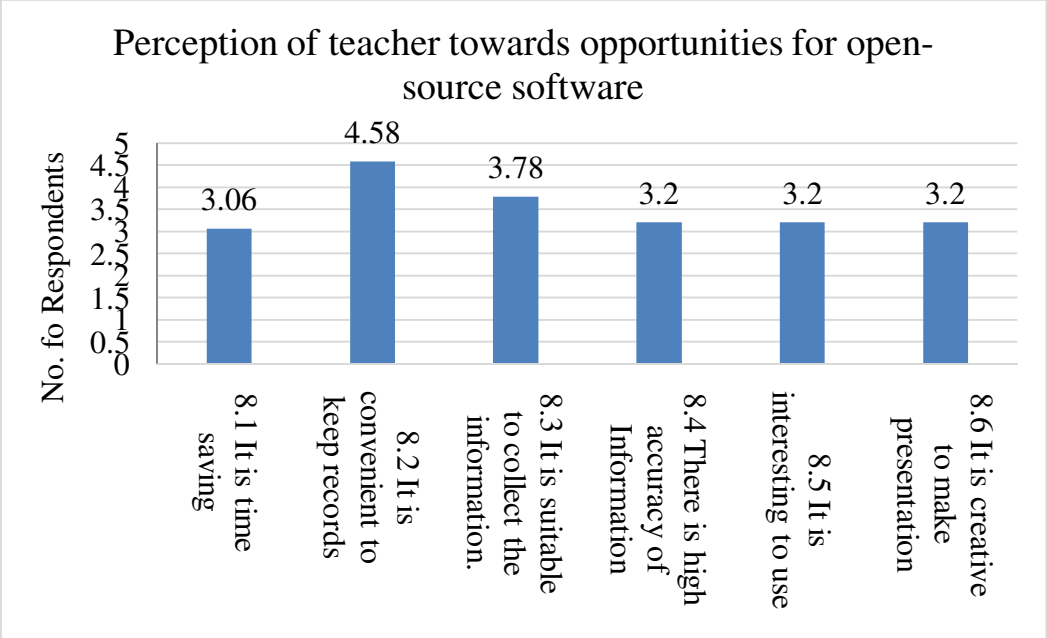
8.1 It being time-saving received the highest mean rank of 3.06, indicating that respondents perceive it as a significant advantage.

8.2 Convenience in record-keeping follows closely with a mean rank of 4.58, suggesting that respondents find this aspect quite beneficial.

8.3 The suitability of collecting information ranks next with a mean rank of 3.78, indicating that respondents see value in this feature.

8.4 High accuracy of information ranks fourth with a mean rank of 3.20, along with items 8.5 (interest) and 8.6 (creativity in making presentations), suggesting that these aspects are considered similarly important by respondents.

Overall, these rankings provide insights into the perceived advantages of the system or tool, highlighting time-saving, convenience in record-keeping, suitability for information collection, accuracy, interest, and creativity as significant factors. The following information is shown below in the bar diagram.



Objective 2 To study the challenges in using OSS according to demographic factors of Teachers.

To study the above objective following hypothesis is obtained.

Null Hypothesis H_{02A}: There is no significant difference in challenges in using OSS according to the gender of Teachers.

Alternate Hypothesis H_{12A}: There is a significant difference in challenges in using OSS according to the gender of Teachers.

To test the above null hypothesis independent sample t-test is applied. The results are as follows.

Independent Samples Test				
	t-test for Equality of Means			
	t	df	P-value	Mean Difference
Challenges	-.731	138	.466	-2.203

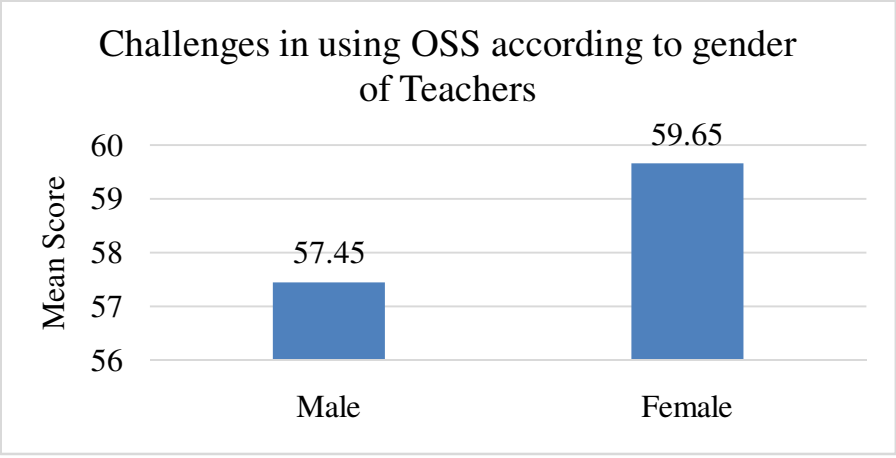
Interpretation: The above results indicate that the calculated p-value is 0.466. It is more than 0.05. Therefore, an independent sample test is accepted. Hence Null hypothesis is acceptedand the Alternate hypothesis is rejected.

Conclusion: There is no significant difference in challenges in using OSS according to the gender of Teachers.

Findings: To understand the findings of the hypothesis, the mean score of challenges in using OSS according to the gender of Teachersis obtained and shown below.

Group Statistics					
	3. Gender	N	Mean	Std. Deviation	Std. Error Mean
Challenges	Male	83	57.45	17.397	1.910
	Female	57	59.65	17.684	2.342

The group statistics reveal differences in the mean scores for challenges experienced by respondents based on gender. Male respondents reported facing challenges with a mean score of 57.45 and a standard deviation of 17.397, while female respondents indicated slightly higher challenges with a mean score of 59.65 and a standard deviation of 17.684. This suggests that, on average, female respondents perceived slightly greater challenges compared to their male counterparts. However, it's important to note that the standard error mean for females is higher, indicating slightly more variability in their responses.The following information is shown below in the bar diagram.



Null Hypothesis H_{02B}: There is no significant difference in challenges in using OSS according to the age of Teachers.

Alternate Hypothesis H_{12B}: There is a significant difference in challenges in using OSS according to the age of Teachers.

To test the above null hypothesis independent sample t-test is applied. The results are as follows.

ANOVA					
Challenges					
	Sum of Squares	df	Mean Square	F	P-value
Between Groups	5895.624	3	1965.208	7.302	.000
Within Groups	36599.919	136	269.117		
Total	42495.543	139			

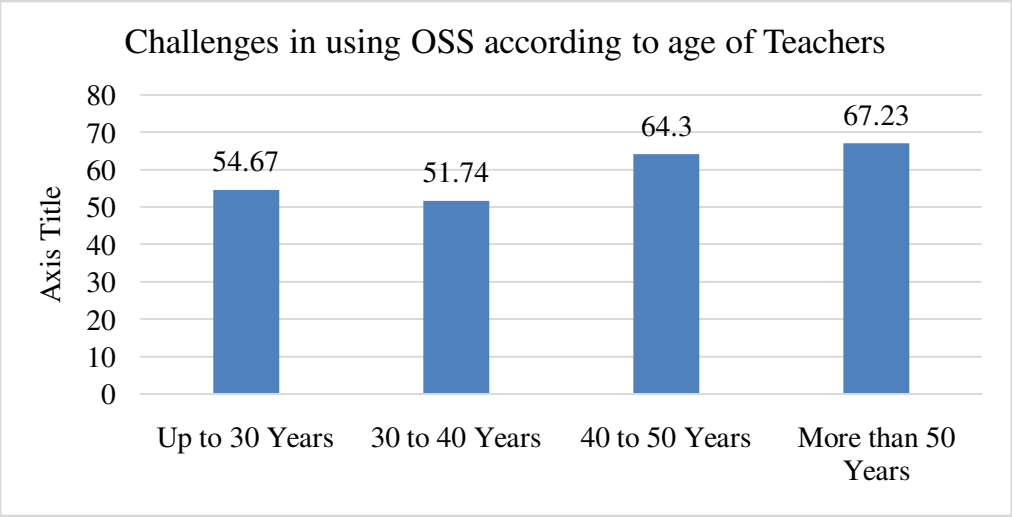
Interpretation: The above results indicate that the calculated p-value is 0.000. It is less than 0.05. Therefore, one sample test is rejected. Hence Null hypothesis is rejected and the Alternate hypothesis is accepted.

Conclusion: There is a significant difference in challenges in using OSS according to the age of Teachers.

Findings: To understand the findings of the hypothesis, the mean score of challenges in using OSS according to the age of Teachers is obtained and shown below.

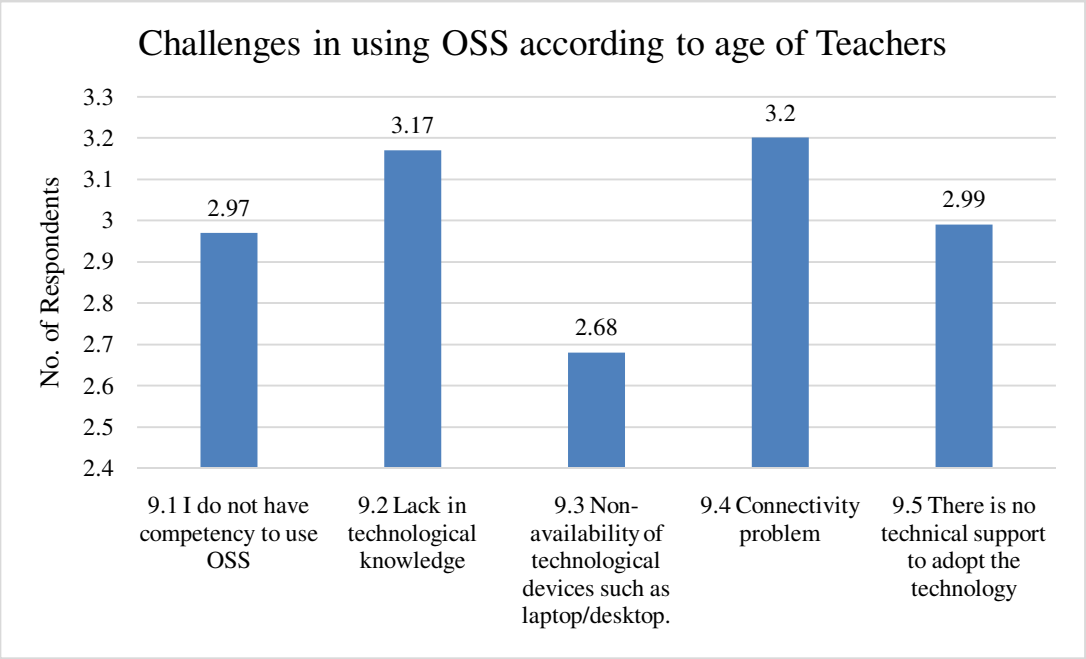
Report			
Challenges			
5. Age of the respondents	Mean	N	Std. Deviation
Up to 30 Years	54.67	36	14.997
30 to 40 Years	51.74	46	12.261
40 to 50 Years	64.30	27	19.688
More than 50 Years	67.23	31	19.904
Total	58.34	140	17.485

The report presents the mean scores and standard deviations of challenges experienced by respondents categorized by age groups. Among respondents up to 30 years old, the mean score for challenges was 54.67, with a standard deviation of 14.997, while those aged between 30 to 40 years reported a mean score of 51.74 with a standard deviation of 12.261. Respondents aged 40 to 50 years reported a higher mean score of 64.30, accompanied by a standard deviation of 19.688, and those over 50 years old reported the highest mean score of 67.23, with a standard deviation of 19.904. Overall, the total mean score for challenges across all age groups was 58.34, with a standard deviation of 17.485, indicating a moderate level of challenges experienced by respondents collectively.The following information is shown below in the bar diagram.



Ranks	
	Mean Rank
9.1 I do not have competency to use OSS	2.97
9.2 Lack in technological knowledge	3.17
9.3 Non-availability of technological devices such as laptop/desktop.	2.68
9.4 Connectivity problem	3.20
9.5 There is no technical support to adopt the technology	2.99

The ranks provided highlight perceived barriers to the adoption of open-source software (OSS) and technology in general. Respondents ranked "non-availability of technological devices such as laptop/desktop" the lowest with a mean rank of 2.68, indicating it as the most significant barrier. Following closely, "There is no technical support to adopt the technology" received a mean rank of 2.99. "I do not have the competency to use OSS" ranked the highest with a mean rank of 2.97, suggesting it is a considerable barrier. "Lack in technological knowledge" and "Connectivity problem" were ranked similarly with mean ranks of 3.17 and 3.20, respectively, indicating moderate barriers. These rankings collectively underscore the challenges related to technical proficiency, access to devices, and support infrastructure in adopting OSS and technology, offering valuable insights for addressing adoption hurdles.The following information is shown below in the bar diagram.



Conclusion

In conclusion, the study reveals a significant difference in teachers' perception of opportunities for open-source software (OSS), indicating a generally positive outlook among respondents. However, no significant gender-based differences were found in the challenges faced in using OSS, although slightly higher challenges were perceived by female respondents. On the other hand, significant variations in challenges were observed across different age groups, with older teachers reporting higher levels of challenges. Barriers such as lack of competency, technological knowledge, and technical support were identified as key challenges in adopting OSS and technology. These findings underscore the importance of targeted interventions to address specific challenges and promote the adoption of OSS among educators, ensuring equitable access and utilization across various demographic groups.

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MOODLE: A Learning Management System

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Abstract:

Moodle is a widely used Learning Management System (LMS), which has emerged as an important interactive tool in the educational environment. Moodle facilitates seamless interaction between teachers and learners. In this paper, an attempt has been made to understand the functionality, need, importance, merits and demerits of the model in modern education. This article highlights how Moodle promotes collaborative learning, personalized instruction, and assessment strategies. A further paper examines the challenges and opportunities associated with implementing the model in different educational settings, emphasizing its adaptability and scalability. Providing insight into the evolution and impact of modals, this article aims to contribute to a deeper understanding of modals' role as interactive tools in shaping contemporary learning paradigms.

Key words: MOODLE, learning management system (LMS), course management system (CMS), E-learning, Self-Paced.

Introduction:

According to Kase (2013), Moodle stands for "Modular Object-Oriented Dynamic Learning Environment" which supports academics, teachers, educational administrators, theorists and programmers. The model is primarily intended to support a type of learning known as social constructivist pedagogy. This style is also called interactive learning. This is because this philosophy believes that people learn best when they interact with interactive learning materials, create new materials for others, and discuss the materials with other students. The present study also describes the model as being used for the dissemination of education. Teachers can prepare their lessons and teaching materials from this interface, assign and test candidates through the model, i.e. assessment can also be done easily through it.

In the words of the developer of Moodle, "Moodle" is an open-source software, also known as "Learning Management System" (LMS) or Virtual Learning Environment (VLE). It has become

very famous and popular nowadays, teachers and students. It has grown in popularity as an online dynamic learning system for students, with many universities and colleges using it as their platform to develop fully online courses. Some use it only for conducting face-to-face courses, and some only for assessment purposes. Moodle is a very useful, simple and cost-effective platform for teachers Helps control and manage all aspects of course content and delivery using Moodle is a learning management system (LMS) software package designed specifically to assist teachers and educational administrators in courses that are self-paced. In Moodle, instant messaging alerts provide on-demand interaction between students and teachers. Teachers can easily use the modal platform to enroll students, take attendance, create courses, upload videos, share study materials, create quizzes, and send feedback to students. A very important feature of Modal is the Discussion forum, which teachers and students can use to discuss a topic, find a solution to a problem, exchange ideas, and students can ask their doubts. Can actively participate remotely. Discussion forums promote collaborative learning through messaging, which helps students learn to work together. In Moodle, teachers and students can engage multiple times and share their ideas, ask questions, teachers respond to these questions very quickly and teachers provide support to their students on demand. Students submit their assignments electronically to the teacher and receive their grades based on the rubric. Teachers can easily share content by combining text, images and embedded videos. Teachers can update and upload these materials anytime from anywhere and students can also access it from anywhere and anytime. Teachers can easily communicate with their students through Moodle. Teachers can individually track each student's progress through Moodle's advanced features.

Related Literature Review:

Ahmed, and Al-Khanjri (2022), studied Moodle as a topic for instruction and learning in education with the title “Effect of Moodle on learning: An Oman perception”. The purpose of this study was to survey students' responses to the use of the model and its impact. A self-developed questionnaire, consisting of twelve questions, was used to collect student responses. The total sample size was five hundred and ten (510). This study was a course "Basic Computing Skills" recommended for the Foundation Program at Sultan Qaboos University in the Sultanate of Oman. Explored the effects of the model on student learning. E-learning materials were used in the study. Students and teachers were constantly connected to exchange ideas, information, questions and answers. Based on their questions and discussions, the required content and information was published on Modal's course website. The study showed that at the beginning of the course, students had little knowledge and experience about Moodle but by the end they understood the importance and use of Moodle because they could access the course anytime through the internet. were Overall, they were learning using the model and realizing its value. The model helped them better understand and learn the course content by modifying their course web content, and students particularly preferred the face-to-face approach, but online activities were the preferred learning style.

Yüksel (2022), "The Effect of Moodle-Integrated Learning Platform on Pre-service Teachers' General Pedagogical Knowledge". Studied under the title of the nature of the study was a quasi experimental research design with two groups (experimental and control). In this course, a pre-test and post-test design was used to ascertain the role of the model in building students' general pedagogical knowledge and their achievement. Preliminary results of the study showed that both groups showed similar mean scores on the placement test before the intervention began. There was no significant difference between the mean scores of the experimental and control groups. Later it was observed that the experimental group performed significantly better than the control group. **Olich, and Otieno (2018),** conducted a study titled "Impact of MOODLE as an open source E Learning platform on students' Performance: A case study of Jomo Kenyatta University of Science and Technology", the objectives of the study are as follows were, to determine the problems faced by the students using the modal system and how these affect the academic performance of the learners and to determine the prior computer skills and knowledge of the learners using the modal system. How it affects the academic performance of the students. Also to determine the role played by the modal e-learning components/features in enhancing the student's academic performance. The nature of the study was descriptive survey design. Simple random sampling was used in the sampling technique for selecting the sample and 500 students were sampled from the e-learning program. A self-developed questionnaire was used for data collection. The result shows that the use of the model is very easy and the previous knowledge of computers etc. has no effect, the use of the model improves the academic performance of the students and the students perform better.

Gudkova, Reznikova, Smolitova, and Setnikova. (2021), "Effectiveness of Moodle in student's independent work". Studied under the title of the purpose of this study was to explore the effectiveness of integrating modal into student independent study within the framework of a course delivered online at Southern Federal University. The study was conducted in mid-August to December of the 2020-2021 academic year. It was a descriptive study, using a mixed-methods approach. A self-developed questionnaire was used for data collection. The results show that the modal helps students revise and revisit the study material several times and better understand the material studied in class. It also found that the model supports child-centered learning, allowing students to complete tasks anywhere and anytime with Internet connectivity. Moreover, it reduces the interaction dependency for a short period of time. It has simplified course management and helped reduce time to deliver instruction and get real-time analytics. In addition, students have said that interactive and multimedia content encourages their active involvement in learning. Both students and teachers express positive opinions about learning English through modal.

S. Coutts and Cor. (2021), titled "Effectiveness of Moodle-LMS on the Academic Achievement and Student Satisfaction among IX Grade Mathematics Learners". It was designed to look at the scores of Grade IX to study the effect of Moodle on academic achievement and the satisfaction of Grade 9 students The experiment was conducted in two randomly selected schools of Amritsar district, one was PSEB and the other was CBSE. This means that teaching with modal learning

management system showed a significant improvement in the performance of grade IX students.

Need and Importance of MOODLE: The current situation is having a great impact on the principles of life, whether they are social principles or educational principles. The increasing use of online teaching and learning tools is causing a great change in education. This new way of learning started especially with the corona epidemic, which has now become quite famous. Many studies show that online learning has an impact on students' academic achievement and their scientific attitude. Now we live in a global civilization and the whole world has turned into a vast village. Advances in technology have greatly influenced the way learning is designed, the way we work, and the way we live. Online teaching and learning as an environment is proving to be beneficial for both students and teachers which plays a very important role in achieving the goals of education in terms of curriculum. It is becoming more popular these days, and a large number of institutions are working on creating better tools for e-learning. Reforms are taking place in higher education in terms of traditional and online education. Teaching and learning through online platforms is becoming very popular among teachers and students these days. It not only facilitates learners but also provides an easy way, but also the fact that this platform enables learners to prepare lessons in advance and revise the material learned. Also encourages any feedback from teachers. Provides an advantage in exchanging ideas about the problem. A modal learning management system is a learning management system (LMS) and a course management system (CMS). Through the modal platform, teachers can help children in different areas of teaching and learning, including teachers can use it to provide different types of content to students or interact with students in real time. In addition, it is used as a learning resource for students, through the module can be created activities that can speed up learning, such as, forums (web boards), messaging or chat. , the opportunity for students to express their ideas, homework, assignments or quizzes, allows for discussions that engage learners. All these activities encourage learners to be more enthusiastic about learning. In addition, the model helps promote the activities of teachers across disciplines to work together to share responsibility for their students across the curriculum. Today's students learn at their own pace and in their own time. Want to learn accordingly. In such situations, it is important for teachers and educational administrators to use open-source software like MOODLE, which can prove to be quite effective.

Advantages of MOODLE: The main advantages of the MOODLE are as follows:

1. Interaction between academic staff and students is real time.
2. Students get answers quickly.
3. Documents are easy to manage and edit on Moodle.
4. Chong and Ackerman (2015) support the claim that students find MOODLE easier to use.
5. Making backup copies and restoring information is easy.
6. Easy to keep register of grades and download to spreadsheets etc.
7. Facilitates staff access to information stored in other educational institutions.

Disadvantages of the MOODLE: Certainly, this system has some advantages and is respected by some organizations, but there are also some problems and flaws because nothing can be perfect.

1. The first major problem is that Moodle is not fully equipped to handle large projects. While this may work for small to medium-sized colleges or universities, this system may not work effectively with larger schools or as the best way to hold all classes in a city.
2. Moodle might not be the wisest choice if the Board of Education were to experiment with such an idea. The more students enroll on the platform, the slower the system becomes.
3. It can be difficult for students when they are trying to take quizzes or tests, or just trying to access course material. The website may also be down on occasion, causing students to experience difficulties in accessing the course content.
4. In addition to the lack of complete development, users of Moodle often complain about customization problems such as problems in performing effective diagnostics, problems in accessing content, etc.
5. There is no real guarantee that students read what they were supposed to read.
6. When it comes to creative and critical thinking, it is difficult for educational staff to assess students' skills and abilities.
7. Solved tasks can be obtained by copying and pasting.
8. Final test results are not guaranteed.

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Indian Knowledge System and Scientific Literacy: An Analysis of NEP 2020 and NCFSE 2023

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Abstract:

In the times when India becomes the first country to land on the south pole of the moon, the Indian education system is about to receive a makeover. From primary classes to higher education institutes, the Government of India is keen on introducing techniques, procedures and art forms used in ancient India. The government has unveiled the National Education Policy in the year 2020 showcasing that the upcoming curriculum of school education and teacher education will have a foundation of Indian Knowledge System (IKS). The education policy of 2020 brings forward the idea that the children and youth will be instilled with national pride through this curriculum. In August 2023, the National Curriculum Framework for School Education based on the new policy was also developed and made public. The curriculum is rooted in traditional knowledge of ancient India. The curricular objectives are implemented through textbooks, teaching methods and practices in schools. So, the curriculum of every subject should align with the goals of making the teaching learning process culturally relevant for students. Focusing on the science curriculum proposed by the NCFSE 2023 there will be opportunities and challenges in order to make the learning fun and useful in the lives of students. Hence, science curriculum at elementary level should be designed in such a way that it focuses on building a scientific temper and scientific outlook among students.

It is vital for students and the citizens of the country to differentiate between scientific and pseudoscientific claims; this is strengthened by formal science education. Students while engaging with the curricular components in school it is crucial for them to find the scientific basis of aspects included in the curriculum. With the introduction of the Indian Knowledge System in school curriculum it is important for stakeholders to study the scientific basis of the curriculum. This paper analyses the two policy documents NEP 2020 and NCFSE 2023; and builds upon the opportunities and challenges in implementing the Indian aKnowledge System in schools as a part of the curriculum.

Introduction

In the times when India becomes the first country to land on the south pole of the moon, the Indian education system is about to receive a makeover. From primary classes to higher education

institutes, the Government of India is keen on introducing techniques, procedures and art forms used in ancient India. The government has unveiled the National Education Policy in the year 2020 showcasing that the upcoming curriculum of school education and teacher education will have a foundation of Indian Knowledge System (IKS). The education policy of 2020 brings forward the idea that the children and youth will be instilled with national pride through this curriculum. In August 2023, the National Curriculum Framework for School Education based on the new policy was also developed and made public. The curriculum is rooted in traditional knowledge of ancient India. The curricular objectives are implemented through textbooks, teaching methods and practices in schools. So, the curriculum of every subject should align with the goals of making the teaching learning process culturally relevant for students. Focusing on the science curriculum proposed by the NCFSE 2023 there will be opportunities and challenges in order to make the learning fun and useful in the lives of students. Hence, science curriculum at elementary level should be designed in such a way that it focuses on building a scientific temper and scientific outlook among students.

It is vital for students and the citizens of the country to differentiate between scientific and pseudoscientific claims; this is strengthened by formal science education. Escalating changes in science and technology will also require the citizens to be scientifically literate (Miller, 1996).
Students while engaging with the curricular components in school it is crucial for them to find the scientific basis of aspects included in the curriculum. This increases curiosity in students and also a sense of rational and logical thinking.

Indian Knowledge System

The knowledge practised and propounded in ancient India was transmitted orally and through literature in subsequent generations. It included a spectrum of ancient literature and various tribal folklore native to India. A composition of systematised knowledge domains that existed in ancient India including the traditional practices is Indian Knowledge System (IKS). These traditions and practices were related to the ancient civilization of India; some of which were documented in the form of literature texts and others were passed to next generations orally.

IKS constitutes the traditional knowledge in the domains of Philosophy, Science Engineering and Technology, Humanities and Social Sciences. It also includes the study of Astronomy, Public Administration, Ayurveda & Yoga, Mathematics and Computing, Metallurgy, War Technology Languages and Linguistics and Management Science. The literature of IKS is also believed to be contributing in understanding the planetary movements, solar system, computation of the value of pi etc.

Scientific Literacy

Scientific literacy is a broad term which in its domain encompasses the terms like scientific temper, scientific attitude, scientific thinking, scientific methods, awareness and understanding of scientific terminologies, nature of science, Science Technology, Society and Environment approach (STSE approach). Scientific literacy allows a person to think, ask, and find answers to

the aspects related to their everyday experiences. It enhances the ability of a person to explain, describe and work upon their ideas and opinions about any natural phenomena. Scientific literacy presents facts, knowledge and research upon which any opinion or result is made.

The 'Teachers Handbook on Scientific Literacy' which was a collaborative effort of CBSE, KVS, NVS and Department of Education, Chandigarh Administration, under the guidance of MHRD highlights the factors of why scientific literacy is important. Scientifically literate students have a basic skills set that allows them to:

- Access the scientific information they need when confronting a real-world problem or question;
- Critique claims that utilise scientific evidence and reconcile conflicting claims about scientific evidence;
- Understand human factors that influence the creation, interpretation, and communication of scientific evidence; and
- Integrate thinking scientifically about a question with knowledge from other fields.

Science education rested on the premise of equipping students with scientific knowledge based on their levels; which has now seen a paradigm shift to making students intellectually independent. This is an attempt to build critical skills in students to analyse scientific evidence (Osborne, 2023).

Science education in a curriculum should be such that it builds the scientific intellect of a person. It should also contribute to students' scientific literacy in order to enhance their observation skills such that they are capable of describing any natural phenomena that happens around them. The students will find scientific basis of these phenomena and base their judgements on facts; they tend to operate with rational and logical thinking. Building scientific literacy among students also develops the society as a whole. Hence, development of scientific literacy among students becomes important through the transaction of the curriculum in schools.

Glaze 2018, describes scientific literacy as knowledge and understanding of scientific concepts and processes which helps in making decisions, participation in civic and cultural affairs along with economic productivity.

This study aims to find the opportunities and challenges in developing scientific literacy among students in the NCFSE 2023. The curriculum is guided by aspects of the Indian Knowledge System, hence it becomes important to find the scientific basis of everything that is transacted through this curriculum. This study will look at the following aspects when analysing the curriculum framework for scientific literacy and science education goals.

A student with scientific attitude with have the following characteristics (Davis, 1935, as cited in Anelli, 2011):

Box 1: Characteristics of a student with a "scientific attitude" (Davis, 1935)

1. Willingness to change opinion on the basis of evidence
2. Search for the whole truth regardless of personal, religious, or social prejudice
3. Concept of cause-and-effect relationships
4. Habit of basing judgement on fact
5. Power or ability to distinguish between fact and theory
6. Freedom from superstitious beliefs

In his review of history of science education DeBoer has compiled science teaching goals that have advanced over the decades, these goals are as follows (DeBoer, 2000, as cited in Anelli, 2011):

Box 2: Summary of science education goals in the scholarly literature (DeBoer, 2000)

1. Teaching and learning about science as a cultural force in the modern world
2. Preparation for the world of work
3. Teaching and learning about science that has direct application to everyday living
4. Teaching students to be informed citizens
5. Learning about science as a particular way of examining the natural world
6. Understanding reports and discussions of science that appear in the popular media
7. Learning about science for its aesthetic appeal
8. Preparing citizens who are sympathetic to science
9. Understanding the nature and importance of technology and the relationship between technology and science

Attempt to Decolonize Academics: Introduction of IKS in Education System

The British government colonised India for many years and made western education widely accepted in the country. The introduction of IKS in the school curriculum is an attempt to decolonize the country through the education system. Along with incorporating IKS in school education, the Ministry of Education (MoE) at AICTE has also started an initiative IKS which is established to urge interdisciplinary research in the ancient traditions and research in what is defined as the Indian Knowledge System. Various elective courses have been introduced aligned with the Indian Knowledge System.

It is important for students to have knowledge and understanding of traditions of the country they live in. Culturally relevant knowledge should be provided to students in school, but by taking special care of their scientific outlook. A thought should be put forward that this curriculum does not jeopardise the scientific movement led by Pandit Nehru post independence. In an attempt to bring the society out of the shackles of superstitions the government post independence in 1976, India included "Scientific Temper with humanism" as a fundamental duty

of all citizens of the country [Article 51-A(h)], becoming the first country to do so.

Hence, it becomes important for the curriculum to establish a belief system that complies with the constitution of the country. A few thrust areas of this NCFSE 2023 is Art Education, Physical Education and Well-being, and Vocational Education. Environmental Education has also been emphasised upon systematically. One of the common things between these focus areas is that it will be rooted in India and in Knowledge of India (including Indian Knowledge Systems). In an attempt to decolonise the education system it is also important that the scientific attitude of students is not compromised. Whatever traditional practices introduced as a part of the curriculum must be well thought and designed in such a way that it reflects the scientific method of doing things.

Documents in Focus

After more than three decades a new education policy was rolled out by the government of India in the year 2020. Under the chairmanship of Dr. Krishnaswamy Kasturirangan several drafts of the document were prepared in a span of four years and the final edition of the National Education Policy (NEP) was rolled out in 2020. The purpose of the policy is to revamp all aspects of the education structure of India. Every policy has a value based intent, the guiding light for this policy is the rich heritage of ancient and eternal Indian knowledge and thought. The principle on which this policy is embarked is to build an education system that develops good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination.

After the release of the new education policy, there was also a need for a curriculum framework which serves as a guiding document for implementing syllabus, textbooks and teaching practices in light of the policy. A framework which lays down the goals and objectives for educational institutions in the country. The National Steering Committee for National Curriculum Frameworks with K. Kasturirangan, as the chairperson, released the National Curriculum Framework for School Education in August 2023. The curriculum is designed by the combined efforts of the Ministry of Education and National Council for Educational Research and Training (NCERT) . The National Curriculum Framework for School Education (NCFSE) is a blueprint of the curriculum and effective teaching methods to be used for children between ages 3-18 years in India. The curriculum serves to the curricular and pedagogic structure of 5+3+3+4 as envisaged by the NEP 2020. The NCF includes a spectrum from India's knowledge, wisdom and traditions of ancient India to energy and aspirations of contemporary India. This will include students' engagement with the local traditions and diverse communities from all parts of the country. The NCF is hence approaching 'rootedness' in Indian knowledge.

The present study is an attempt to analyse the opportunities in NCFSE 2023 and NEP 2020 to cater to scientific literacy among school students. The study also highlights the challenges of scientific literacy while executing this curriculum.

Review of Related Literature

Miller (1998) describes civic scientific literacy as an amalgamation of three layer dimensions, first the content of science, second the process skills of science and third the impact of science and technology on the society. It should be developed in students such that they are able to debate and concur with the technological practices taking place around them.

Hodson (1998) describes the goals of science education, in three categories, first is acquiring theoretical knowledge to enhance level of understanding. Second,learning about science develops an understanding of nature and respect for history, development and interactions between science, society, technology and environment. Third, doing science develops the process skills including scientific inquiry and problem solving.

Feinstein (2011) puts forward the usefulness of scientific literacy, in a way that it can actually help people solve their personal meaningful problems and make decisions related to science. He assumes the students who are taught the scientific principles will automatically extend those principles into real life situations and will not comply with the common belief existing around them.

Bell and Stevenson (2015) makes a point of how the environment of schools is influenced by the educational policies implemented in the country. At any particular time the dominant political ideologies also contribute in shaping the policy documents.

Cardno (2018) highlights the research focusing on educational problems can make use of policy document analysis to get an in-depth information of the nature of the problem, along with identifying the source of the problem. While doing a policy document analysis it is important to understand the purpose of the policy and its nature.

A report based in America argues the importance of science education in an era of misinformation concludes that many social media platforms are abound with misinformation; and there is a need to build competencies of scientific literacy in students to address this issue of misinformation (Osborne et al. 2023).

Research Objectives

1. To identify opportunities to enhance scientific literacy with integration of IKS in NEP and NCFSE.
2. To identify challenges in enhancing scientific literacy with integration of IKS in NEP and NCFSE.

Methodology

A qualitative approach has been used for the present study. The study is a document analysis of National Education Policy 2020 and National Curriculum Framework for School Education 2023. The study is aimed at analysing prospects of scientific literacy in the two documents mentioned. The focus is on science education curriculum along with the suggestions related to integration of Indian Knowledge System in the curriculum. The following table is an adaptation of analysing policy documents by Bowen, 2003.

Document Selected	Content Analysed
National Education Policy, 2020	• Principles of the Policy (pp. 4-5) • Vision of the Policy (p. 6) • Chapter 4: Curriculum and Pedagogy in Schools: Learning Should be Holistic, Integrated, Enjoyable and Engaging (pp. 11-19)
Draft of National Curriculum Framework for School Education, 2023	**Part B:** Cross Cutting Themes • Chapter 1: Rootedness in India and Indian Knowledge System **Part C:** School Subjects • Chapter 4: Science Education

Findings of the Study

1. Rooted in Indian ethos and local context

The curriculum and pedagogy must be rooted in the Indian and local context in terms of societal and scientific needs to ensure relevance. Stories, art, games, sports, examples to be chosen from Indian and local geographical context. Environmental education to be enriched by nature-conservation traditions across India. NEP has a vision to instil among learners deep rooted pride in being Indian, in spirit, intellect, deeds and thoughts (NEP p. 6). NCFSE purports the use of locally rooted resources for learning can also be proved to be more cost effective, more eco-friendly and supportive of local communities along with being pedagogically effective; it also claims that creativity best flourishes when learning is rooted (NCFSE p. 149).

2. Incorporation of Indian Knowledge

NCFSE claims to incorporate knowledge from ancient India in a 'scientific manner' throughout school curriculum wherever it is relevant (NCFSE, p. 149). All curriculum and pedagogy, from the foundational stage onwards, will be redesigned to be 'strongly' rooted in the Indian and local context and ethos in terms of culture, traditions, heritage, customs, language, philosophy, geography, ancient and contemporary knowledge, which will suffice both the societal and scientific needs, which will also include traditional ways of learning (NEP, p.16). Various tribal ethno-medicinal practices, forest management, traditional (organic) crop cultivation, and natural farming will be incorporated wherever possible and relevant (NCFSE, p. 149).

3. Building Scientific Temper

The fundamental principles of NEP guiding the education system involve ethics and human & Constitutional values like empathy, respect for others, cleanliness, democratic spirit, justice, equality, pluralism, as well as scientific temper (NEP, p. 5). The NCFSE expands on one of the fundamental principles i.e, scientific temper, it highlights the importance of developing critical and

evidence based thinking in students along with imbibing scientific values like integrity, scepticism, objectivity, tenacity, honesty, concern for life, collaboration and preservation of the environment (NCFSE, p. 296, para f.)

4. "Doing Science"

- The science curriculum will include contributions of ancient as well as contemporary Indian scientists to the domain of scientific knowledge. At primary stage biographical sketches of contemporary scientists like J C Bose, Meghnad Saha, Obaid Siddiqi and many more will highlight the pioneering discoveries of these scientists and their contributions to conservation of environment (NCFSE, p. 152).
- Traditional dietary and culinary practices along with knowledge of diversity of food in India will enhance the understanding of sources of food, and impact of climatic conditions related to diversity of diets in the country at the middle stage (NCFSE, p. 152, para iii). Science content should be prepared in a way that students become responsible citizens of the country and can make use of the available scientific evidence to make decisions of their everyday lives, for example decisions to vaccinate oneself, make healthier eating choices, and examine media claims critically (NCFSE, p. 309, para h.)
- Indigenous practices related to health and medicinal systems, principles and practices of Ayurveda will also be introduced at secondary stage (NCFSE, p. 153). The NCFSE marks some of the challenges in science are: focus on facts and definitions, content derived from demands of entrance examinations, disconnection between the real world and school curriculum and lack of proper resources in learning of science (NCFSE, p. 297, 4.3a).
- Conceptual understanding along with capacities of scientific inquiry at appropriate age is encouraged. Along with that curricular goals at the middle stage involves making sense of the environment and how science and technology governs their lives along with understanding the interface of Science, Technology, and Society (NCFSE, p. 300, CG-5). Some of the curricular goals at secondary stage include understanding the contribution of India to scientific knowledge (like the indigenous practices related to health and medicine) and how science should be practised (NCFSE, p. 300, CG-4).
- The NCFSE also establishes a curricular goal for students to explore the living world in scientific terms for example, describing diversity of living things, characteristics of living organisms, relationships between living organisms and their environment and conditions of sustaining life on earth (NCFSE, p. 300, CG-3)

5. Contribution Indigenous Knowledge to Astronomy

The Vedic texts have shown contributions to astronomy, explaining the lunar and solar years, equinoxes and solstices, solar eclipses and lunar mansions. This in turn helped in agricultural practices like sowing or harvesting the crops. Indian approach to astronomy also contributed to the development of the solar zodiac signs also commonly known as 12 *Rashis*. Introduction of Aryabhata's approximation for earth's circumference and daily motion of the sun will also be included (NCFSE, p. 153)

6. Importance of Environmental Education

Integrating environmental awareness and sensitivity towards its conservation and sustainable development in teacher education programmes to make environment education become an integral part of school curricula. NCFSE defines technology in a context that it is not an 'application of scientific knowledge', rather it also includes animal technologies for example, nest-construction by birds, dam construction by beavers, use of stones or sticks by apes. This will be useful to sensitise young students through educational videos, and also as an illustration of the richness and complexity of the natural world (NCFSE, p. 151, para ii). An integrated approach of the curriculum will help students examine the relevance of traditional sustainable practices related to the conservation of resources and agriculture. This will also examine the planetary crisis of climate change, biodiversity loss and pollution (NCFSE, p. 156).

Content Analysis

The above findings are analysed with reference to the characteristics of a student with scientific temper (box 1, p.3) and goals of science education (box 2, p.3) mentioned above.

Opportunities

1. Teaching and learning about science as a cultural force in the modern world: The NCFSE purports learning embedded in Indian culture. It also focuses on involving traditional knowledge wherever relevant in 'scientific manner'. The cultural practices which enhance the scientific knowledge of children can be included in the curriculum. Scientific literacy makes students open-minded; the teachers while transacting this curriculum should make sure that deep rooted pride in India's culture should not make students indifferent towards other knowledge systems around the world.

2. Understanding the nature and importance of technology and the relationship between technology and science: The curricular goals mentioned in the framework rightly points out the importance of understanding the interface of science, technology and society and how it improves the quality of human life (health care, communication, transportation, food security, judicious consumption of resources, application of artificial satellites)

3. Teaching and learning about science that has direct application to everyday living: The diversity of food in the country and the dietary habits find its mention in the curriculum framework for science teaching, hence this will also help students in making everyday decisions using the scientific evidence at hand. For example, students aware of dietary effects will be able to make healthier eating choices. The pedagogy of science as suggested in the framework should be designed in such a way that it enables students to establish connections between conceptual learning and real life, and builds capacity of scientific inquiry and applying it to the real world.

4. Learning about science as a particular way of examining the natural world: The NCFSE has evidence of the importance of learning about the natural world, the ways animals live and the diversity of ecosystems. Along with this, conservation of biodiversity, mitigation of climate change and pollution control are some of the essential components to be transacted through

the curriculum. Curricular goals focusing on exploring the living world in scientific terms will also help students in having a complete knowledge about the natural world (organisms, environment and relationships).

5. **Concept of cause-and-effect relationships:** This is ensured in the policy in the form of constitutional values that needs to be adhered to by the teachers and students. Developing scientific temper among students is one of the aims of science education. Developing objectivity and finding a cause to effect that happens in the surrounding is encouraged in students.

Challenges

1. **Freedom from superstitious beliefs:** None of the two documents analysed provided scopes of removing prevalent superstitions from the society. India has moved away from a bundle of superstitions, but they are still commonly prevalent in the society which can be addressed through the curriculum.

2. **Search for the whole truth regardless of personal, religious, or social prejudice:** the curriculum framework does mention freedom from fear and prejudice is central in learning of science. But the mention of 12 *Rashis* which are the zodiac signs gives rise to the transaction of pseudoscience through curriculum. Astrology has belief systems which claim the relationship between astronomical events and personalities of humans; this has been rejected by the scientific communities. Astrology does not have attributes of true science and scientific testing has not found any evidence to support the premises of astrological traditions (Zarka, 2011).

3. **Preparation for the world of work:** The curriculum does reflect the importance of contribution of Indian knowledge in explaining astronomical phenomena, but it would make it complex for students to understand the calculations used at that time. A curriculum along with making students good citizens, should also play a role in preparing students for the workforce. The relevance of ancient theories and calculations is little in today's work economy. Moreover, the curriculum does mention the biographical sketches of ancient and contemporary scientists; it misses the importance of institutions (like IITs and ISRO) of contemporary India in shaping the work economy of the country. The embeddedness in traditional ancient knowledge of the curriculum should not sway the students away from the global knowledge economy.

4. **Willingness to change opinion on the basis of evidence:** Scientific literacy also makes a person open minded. Students should be of the temper that they are accepting of new or different knowledge and means of doing things based on scientific evidence. Hence, a temper which is deeply rooted in ancient knowledge and takes pride in the heritage of one's country should also be accepting of knowledge systems that do not belong to India. A temper such that which caters to open mindedness for scientific knowledge of other countries should also be developed; a temper which accepts and respects the views of others should be developed.

Conclusion

It is necessary for every citizen to know the history, culture and tradition of the country they live in; one of the ways is to transact it through curriculum. The government of India has

recently released a curriculum framework that caters to the transaction of ancient Indian knowledge. The curriculum along with enhancing the students with traditional knowledge should also cater to scientific literacy of students. The present study has attempted to bring in light the opportunities and challenges this curriculum framework provides in order to make students scientifically literate. There are certain high points in the curriculum framework for school education, such as providing space for learning which is in connection to real life and curricular goals targeting 'doing science' along with knowledge of the natural world and further application of scientific knowledge to real life situations. Some of the challenges that curriculum framework poses is not addressing the need to remove superstitions from the society; school curriculum can be leveraged to ascertain the difference between pseudoscience and science. One question that also arises here is whether this curriculum will actually build the knowledge and competency of students to join the workforce or compete with the global knowledge economy. In the era when the education systems around the world are including artificial intelligence, machine learning, and advanced scientific knowledge in their curriculums, India is focusing on ancient traditional knowledge. The implementation of the National Education Policy and National Curriculum Framework in the classrooms can only bring forward the results to tell us about scientific literacy among students.

Educational Implications of the Study

The study attempts to find opportunities and challenges in the two policy documents, NEP 2020 and NCFSE 2023, on the basis of the analysis of findings following are some of the education implications of the study:

- While transacting science curriculum in schools students must be instilled with a spirit of scientific inquiry and encouraged to make decisions based on observation and facts. This also helps them in making informed decisions related to their own lives.
- Students should be informed citizens of the country, this involves efforts of the teachers to clear misconceptions and alternative conceptions while teaching and learning of science.
- Teachers should help students in differentiating science from pseudoscience. Students should be aware of the prevalent superstitions in the society and refrain from believing in them.

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Empowering Educators: Embracing the Transition from Guide to Guru for Holistic Learning

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Abstract:

This article delves into the transformative journey of empowering educators and embracing holistic approaches in education. It examines the evolution of the educator's role from a traditional guide to a modern guru, emphasizing the critical importance of holistic development in education. The discussion highlights how fostering emotional, social, and physical growth in students is essential for their overall well-being. The article also explores strategies for encouraging educators to adopt a holistic mindset, focusing on reflection, professional development, and collaboration. It emphasizes the value of building strong connections through mentorship and facilitation techniques, promoting trust, active listening, and individualized support. Additionally, it addresses the challenges of overcoming barriers to transformation in education, such as resistance to change, resource constraints, and institutional inertia. Insights are provided on sustaining empowerment for long-term impact, underscoring the need for continuous learning, community engagement, and advocacy for policy change. Ultimately, the article underscores the importance of empowering educators and embracing holistic education to create learning environments that nurture every student's holistic development and prepare them for success in an ever-changing world.

Introduction:

Educators' roles are changing dramatically in today's quickly expanding educational world. The article "Empowering Educators: Embracing the Transition from Guide to Guru for Holistic Learning" delves into this critical shift. Educators, formerly considered as guides who convey knowledge, are increasingly taking on the role of gurus—mentors who support holistic learning experiences. This shift focuses on developing critical thinking, emotional intelligence, and lifelong learning abilities. By adopting this new paradigm, instructors not only convey academic information but also create a supportive and dynamic atmosphere in which students may succeed in an ever-changing world. This transformation enables instructors to inspire and guide students on a more meaningful educational path.

Understanding the Evolution: From Traditional Guide to Modern Guru

Teachers' roles in education have changed dramatically throughout time. Educators were always seen to be merely guides who convey information, but they are now expected to play a more complex role, that of a contemporary guru. This movement reflects a larger concept of education as more than only the transfer of information, but also the overall development of students.

Traditional pedagogy frequently put professors in positions of power, while pupils were expected to passively absorb knowledge. However, in today's dynamic educational environment, the emphasis has changed to active learning, critical thinking, and personal development. As a result, educators' roles have expanded from knowledge dispensers to mentors, facilitators, and inspirers. The contemporary guru of education

The modern guru in education is not just a source of knowledge but a guide who nurtures the

intellectual, emotional, and social development of their students. They create inclusive learning environments where every individual feels valued and supported in their journey of discovery. This transformation requires educators to possess not only subject matter expertise but also empathy, adaptability, and a deep commitment to student success.

Accepting the role of a contemporary guru necessitates a paradigm shift in how educators view their work and their interactions with students. It necessitates that they move beyond standard teaching techniques and adopt creative approaches that promote creativity, critical thinking, and cooperation. Furthermore, it involves a continual process of self-reflection and professional growth in order to remain responsive to the changing requirements of learners. Finally, the transition from a traditional guide to a modern guru represents a greater trend toward holistic education, which acknowledges the interconnection of academic learning, personal growth, and social participation. Educators who grasp this growth and embrace their position as facilitators of holistic learning may empower themselves to have a deep and lasting influence on the lives of their students.

Embracing Holistic Education: The Role of the Educator

In today's fast-paced and linked world, the importance of comprehensive education has never been more clear. Holistic education expands beyond the usual emphasis on academic accomplishment to include the development of the entire person - mind, body, and spirit. As a result, educators play an important role in promoting holistic growth and well-being in their pupils.

Holistic education is based on the concept that learners are varied persons with various needs, interests, and abilities. Educators must try to establish learning environments that support their students' holistic growth, cultivating not only academic ability but also emotional intelligence, social skills, and physical well-being. The educator's role in promoting holistic education is varied and dynamic. It demands a profound knowledge. It necessitates a thorough awareness of each student's specific requirements and learning styles, as well as a dedication to developing inclusive and supportive learning environments. Educators must be role models and mentors, helping their pupils on a path of self-discovery and personal development.

The educator's role in holistic education revolves around creating a good and caring learning environment. This includes instilling a feeling of belonging and connection in students, as well as providing chances for collaboration, reflection, and experiential learning. Educators can develop a culture of respect, empathy, and understanding, allowing holistic growth and well-being to thrive. When adopting holistic education, educators must also acknowledge the need of instilling a sense of purpose and meaning in their students' lives. This includes assisting kids in developing a sense of identity, beliefs, and aspirations, as well as instilling a sense of social responsibility and global citizenship.

Ultimately, embracing holistic education necessitates instructors taking a holistic approach to teaching and learning, one that acknowledges the interdependence of intellectual, social, emotional, and physical development. By accepting their position as facilitators of holistic education, educators may help their students grow not only intellectually but also personally and socially, equipping them to live full and meaningful lives in an ever-changing world.

Cultivating a Mindset Shift: Strategies for Empowering Educators

In order to embrace holistic education and transition from traditional advisors to modern gurus, educators must experience a fundamental mentality shift. This transformation entails not just changing how they see their position, but also how they conduct teaching and learning. Cultivating this mentality change

is critical for empowering educators to effectively promote holistic education. Here are some techniques for accelerating this revolutionary process:

1. Reflective Practice: Encourage educators to engage in regular reflection on their teaching practices, beliefs, and values. By critically examining their assumptions and biases, educators can identify areas for growth and development.
2. Professional Development: Provide opportunities for ongoing professional development that focus on holistic teaching strategies, social-emotional learning, and culturally responsive pedagogy. Equip educators with the knowledge and skills they need to support the holistic development of their students.
3. Collaborative Learning Communities: Foster a culture of collaboration among educators, where they can share ideas, resources, and best practices. Collaborative learning communities provide a supportive environment for educators to learn from one another and collectively innovate.
4. Student-Centered Approaches: Encourage educators to adopt student-centered approaches to teaching and learning, where students are active participants in their own education. Empower educators to design learning experiences that are personalized, differentiated, and relevant to students' interests and needs.
5. Embrace Innovation: Embrace innovation and experimentation in teaching and learning. Encourage educators to explore new technologies, pedagogical approaches, and interdisciplinary perspectives that promote holistic education.
6. Cultivate Empathy and Compassion: Emphasize the importance of empathy and compassion in education. Encourage educators to develop deep connections with their students, understanding their individual strengths, challenges, and aspirations.
7. Create a Culture of Growth Mindset: Foster a culture of growth mindset among educators, where they embrace challenges, learn from failure, and persist in the face of setbacks. Encourage educators to model a growth mindset for their students, demonstrating that learning is a lifelong journey.
8. Promote Self-Care: Recognize the importance of educator well-being in facilitating holistic education. Encourage educators to prioritize self-care, setting boundaries, and seeking support when needed.

By creating a mindset change and providing educators with the techniques and support they require, we can build learning environments that foster each student's complete growth. Educators, as modern gurus, have the ability to inspire, encourage, and empower the next generation to flourish in a complicated and interconnected world.

Building Stronger Connections: Mentorship and Facilitation Technique:

One of the foundations of holistic education is the development of strong relationships between instructors and students. These ties extend beyond education to include mentorship, advice, and support throughout a student's growth. In this chapter, we discuss the significance of making these connections and provide strategies for effective mentorship and facilitation in the educational context.

1. Fostering Trust and Rapport: Establishing trust and rapport is essential for building strong connections with students. Educators can achieve this by creating a supportive and inclusive learning environment where students feel valued, respected, and understood.
2. Active Listening: Practicing active listening is key to building strong connections with students.

Educators should strive to listen attentively to students' thoughts, feelings, and concerns, validating their experiences and perspectives.

3. Empathetic Communication: Cultivating empathy in communication is essential for building meaningful connections with students. Educators should demonstrate empathy by acknowledging and validating students' emotions, showing understanding and compassion.
4. Individualized Support: Recognizing the unique needs and strengths of each student is essential for effective mentorship. Educators should provide individualized support and guidance tailored to students' interests, goals, and learning styles.
5. Setting Clear Expectations: Setting clear expectations and goals helps students understand what is expected of them and provides a framework for their learning. Educators should communicate expectations clearly and provide feedback and support to help students succeed.
6. Encouraging Independence and Autonomy: Empowering students to take ownership of their learning fosters independence and autonomy. Educators should encourage students to set goals, make decisions, and take initiative in their learning journey.
7. Modeling Positive Behavior: Educators serve as role models for their students, influencing their attitudes, behaviors, and values. Educators should model positive behavior, demonstrating integrity, resilience, and a growth mindset.
8. Providing Constructive Feedback: Offering constructive feedback helps students learn and grow. Educators should provide timely and specific feedback that focuses on strengths, areas for improvement, and actionable steps for growth.
9. Creating Opportunities for Growth: Providing opportunities for students to challenge themselves, take risks, and learn from failure is essential for growth. Educators should create a supportive environment where students feel comfortable stepping out of their comfort zone and embracing new challenges.

Educators who include these mentorship and facilitation approaches into their profession may strengthen relationships with their students and create learning environments that promote holistic growth and achievement. Educators play a critical role in helping children to attain their greatest potential and succeed both in and out of school.

Fostering Growth and Well-being: Holistic Approaches in Education

In today's educational environment, promoting student progress and well-being necessitates a comprehensive strategy that goes beyond standard academic criteria. Holistic education acknowledges that students are multifaceted people with a variety of needs and ambitions, and it seeks to foster their intellectual, emotional, social, and physical growth. At the heart of holistic education is the concept that a well-rounded education includes not just information acquisition but also the development of important life skills such as critical thinking, creativity, communication, and teamwork. Educators play an important role in building learning environments that promote holistic development by using a variety of tactics and practices. Creating a pleasant and supportive school culture is an important part of supporting growth and well-being in education. This entails providing inclusive and respectful learning settings in which students feel respected, protected, and able to express themselves honestly. Educators may establish the groundwork for holistic development by instilling a feeling of belonging and community in students.

Furthermore, holistic approaches to education promote the incorporation of social-emotional learning (SEL) within the curriculum. SEL programs teach children how to recognize and control their

emotions, form meaningful relationships, and make responsible decisions. By addressing students' social and emotional needs, instructors may promote their overall well-being and academic performance. In addition to social and emotional learning, holistic education emphasizes the need of improving physical health and wellbeing. This involves encouraging physical exercise, supporting healthy lifestyle choices, and instilling a positive body image. Educators can improve students' academic performance and well-being by encouraging them to prioritize their physical health.

Overall, promoting growth and well-being in education necessitates a comprehensive strategy that takes into account the interdependence of intellectual, emotional, social, and physical development. By focusing students' well-being and incorporating holistic approaches into the curriculum, educators may build learning environments that enable kids to succeed intellectually, socially, and personally.

Navigating Challenges: Overcoming Barriers to Transformation

The following are ways to overcome barriers to transformation

1. Identifying Resistance: Recognize and understand resistance to change among stakeholders, including educators, administrators, and parents.
2. Communication and Collaboration: Foster open communication and collaboration among all stakeholders to address concerns, share ideas, and work towards common goals.
3. Professional Development: Provide comprehensive professional development opportunities to equip educators with the knowledge and skills needed to embrace holistic education.
4. Resource Allocation: Advocate for adequate resources, including funding, time, and support, to implement holistic education initiatives effectively.
5. Cultural Shift: Foster a cultural shift within the educational institution towards embracing innovation, flexibility, and continuous improvement.
6. Addressing Policy Constraints: Advocate for policy changes at the institutional, local, or governmental levels to support holistic education practices.
7. Building Capacity: Invest in building the capacity of educators to implement holistic education approaches, including training on new methodologies and pedagogies.
8. Monitoring and Evaluation: Establish mechanisms for monitoring and evaluating the effectiveness of holistic education initiatives, allowing for adjustments based on feedback and data.
9. Celebrating Success: Recognize and celebrate successes and milestones achieved in the implementation of holistic education, reinforcing positive momentum and motivation.
10. Persistence and Resilience: Cultivate a mindset of persistence and resilience among stakeholders, recognizing that transformational change takes time and perseverance.

Looking Ahead: Sustaining Empowerment for Ongoing Impact

1. Continuous Learning: Emphasize the importance of lifelong learning for educators, encouraging them to stay updated with new developments in education and pedagogy.
2. Community Engagement: Foster partnerships with the community to support holistic education initiatives and create opportunities for real-world learning experiences.
3. Data-Informed Decision Making: Utilize data and feedback to inform decision-making processes, ensuring that holistic education practices remain effective and relevant.
4. Leadership Support: Secure ongoing support from educational leaders and administrators to sustain empowerment efforts and drive systemic change.
5. Cultivating Leadership: Develop leadership skills among educators to empower them to take

initiative and drive innovation in their classrooms and schools.

6. Adaptability and Flexibility: Embrace adaptability and flexibility in response to changing educational landscapes, societal needs, and technological advancements.
7. Building Networks: Establish networks and communities of practice to facilitate collaboration, knowledge-sharing, and support among educators committed to holistic education.
8. Advocacy and Policy: Advocate for policies and practices that support holistic education at local, regional, and national levels, ensuring sustainability and scalability of initiatives.
9. Student Voice and Agency: Empower students to play an active role in shaping their educational experiences, fostering a sense of ownership and engagement.
10. Celebrating Progress: Regularly celebrate and acknowledge the progress and achievements made in sustaining empowerment efforts, reinforcing commitment and motivation among stakeholders.

Conclusion:

The journey towards embracing holistic education and empowering educators is both multifaceted and dynamic. This article explores various aspects of this transformative process, from understanding the evolution of the educator's role to navigating challenges and fostering ongoing sustainability. Holistic education signifies a paradigm shift in teaching and learning, recognizing the interconnectedness of intellectual, emotional, social, and physical development. It calls for educators to transcend traditional boundaries and adopt innovative practices that prioritize the growth and well-being of every student. By cultivating a growth mindset, fostering strong connections, and embracing holistic approaches, educators can empower students to thrive academically, socially, and personally. However, this journey is not without challenges, including resistance to change, resource constraints, and policy barriers. Yet, there is hope in the dedication of educators, administrators, policymakers, and communities to sustain empowerment efforts and drive systemic change.

Through collaboration, continuous learning, and advocacy, we can create learning environments that nurture the holistic development of every student and prepare them for success in an ever-changing world. Ultimately, empowering educators and embracing holistic education are not merely lofty ideals but essential imperatives for a brighter and more equitable future. As we continue this journey, let us remain steadfast in our commitment to transitioning educators from guides to gurus, knowing that the impact of our efforts will extend far beyond the classroom walls.

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A Comprehensive Study of the Zero Classroom Wholistic Program

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ABSTRACT:

ZCWP is a unique educational approach empowering students to lead their own learning. Students take complete responsibility for their education, including classroom layout, teaching activities, attendance, and exam preparation. Students work together to obtain the resources and further plan their usage together. This self-sufficiency builds skills in self-awareness, critical thinking, communication, and collaboration. The approach creates a community of learners responsible for their learning and actively engaged in creating their own learning experiences.

Key Words : Zero Classroom Wholistic Program, learner-centred; teaching-learning activities, Total immersion program & Activities

INTRODUCTION:

The Zero Classroom Wholistic Program (ZCWP) is an innovative education program that empowers children to take responsibility for their learning. The program provides a more personalized and self-directed approach to education, designed to allow students to experiment, discover, learn, and practice independently, instead of receiving lectures in a traditional classroom setting. This program was inspired by the work of Dr. BK PASSI, who trained in-service and pre-

service teacher trainees at Indore. Dr. Passi's work was based on "Mirambika" school in New Delhi following the educational philosophy. At Indore, trainees were given the freedom to plan and execute their own curricular activities, with teachers serving as observers and facilitators **(Singh, pal, &Choudhary)**

The program called ZCWP is designed to immerse participants entirely, with the group taking full responsibility for all aspects of the program. This includes the physical layout of the room, teaching and learning activities, attendance-related work, and completing the syllabus to prepare for exams. ZCWP is an excellent platform that helps develop skills such as self-awareness, critical thinking, communication, and collaboration. The program forms a community of learners who are accountable for their own learning and are motivated to actively participate in creating their learning experiences. This learning approach helps strengthen your connection with yourself and enables you to find ways to advocate for your needs, aspirations, and ideas. ZCWP is distinguished by its focus on learner-centred features of learning, which empowers learners to acquire new knowledge and skills.:

- According to their own time and duration (When to Learn)
- According to the different modes of learning suitable to them (How to Learn)
- Learning objectives and content (What to Learn)

ZCWP is a great program for students who want to take charge of their education. They can learn at their own pace, explore topics they like, and gain skills for their future.

RESEARCH QUESTIONS:

- What is the Zero Classroom Wholistic Program?
- What activities are included/part of the Zero Classroom Wholistic Program?

FOUNDATIONS OF ZCWP:

Poor learning levels among Indian students continue to persist due to a lack of proper school infrastructure and unfavourable learning environments. Women and other marginalized communities face significant challenges in accessing learning resources. The ZCWP approach can improve the situation by addressing these challenges based on the following foundations.

 ***Self-planning* -** This foundation empowers students by providing them with tools and resources to plan their studies effectively, take responsibility for their education, and develop the motivation and ownership to learn. This approach prepares students to tackle academic and career challenges with confidence, leading to a fulfilling and successful life.

 ***Self-management* -** Self-management is key to academic achievement. It allows students to effectively manage their time and learning, prioritizing tasks, setting goals, and creating a schedule. This foundation helps them stay on track and achieve their academic objectives. Students who possess these skills are better equipped to handle the demands of a rigorous academic curriculum and succeed in their academic pursuits.

 ***Cooperative learning* -** Cooperative learning promotes collaboration among students, allowing them to learn from each other, share ideas, and build a supportive environment. It

enhances participation, interpersonal skills, and motivation to succeed. This approach prepares individuals for success in today's workplace.

 Self and peer group evaluation - Self and peer group evaluation helps students identify their strengths and weaknesses, and improve their academic performance. It is an effective approach to assess learning progress and performance, providing an opportunity for learners to develop effective strategies for continuous academic improvement.

The program that enhances itself is essentially founded on certain features. **Merriam, Caffarella and Baumgartner (2007)** have identified some traits of Self-paced learning, which are as follows:

1. To enhance the capability of learners to take responsibility for their own studies.
2. Support transformational learning.
3. To stimulate emancipatory learning and social action.

These characteristics are instrumental in enabling student teachers to select their experiences and customize their educational journey according to their own pace and comfort. This not only fosters independence but also cultivates a culture of lifelong learning.

ACTIVITIES/IMPLEMENTATION:

The students managed, planned, and implemented significant program activities with minimal guidance from the teacher. These activities required meticulous planning and execution by the students themselves to achieve success. Some of the activities planned are:

The Ice-Breaking Activity:

This interactive and enlightening game allows students to have a better knowledge of their friends while also creating a sense of community and respect within the group. To begin, each trainee chooses a bright piece of paper and traces their handprint on it. Once the handprints are complete, trainees form a circle with their selected papers. They are then entrusted with putting down the characteristics of the peer seated on their left. These attributes might include personal strengths, abilities, and commendable characteristics noted throughout encounters.

Mindfulness Activity:

Mindfulness is described as a mental state in which one can focus on the current moment, their surroundings, and the tasks they are doing without becoming engrossed by prior or upcoming situations(Baer et al., 2006). Over the last decade, several researches have been conducted on mindfulness and its benefits for students. Mindfulness exercises have been employed in higher education settings, and research proves that they are advantageous for students. Mindfulness practices have been shown to improve the mental health of students (Huppert & Johnson, 2010).

Gardening:

Gardening can have positive effects on the physical and mental health of students, according to studies by Ohly et al. (2016), Soga et al. (2017), Van den Berg and Custers (2011), and Detweiler et al. (2012). School gardening programs can enhance academic achievement and motivation, according to research by Evans and McCormack (2018) and Blair (2009). Gardening tasks offer students a comprehensive educational experience that develops their psychological,

cognitive, and interpersonal skills, connects them with nature, and broadens their academic and practical knowledge.

Plantation & Botanical Names of the Trees:

The trainees of ZCWP embarked on an interesting and informative quest of planting a diverse selection of botanical specimens in the exciting world of "Botanical Bonanza." Accompanied by skilled facilitators, the trainees went on a discovery journey where they learned the botanical names of the plants they tended. Through interactive discussions and hands-on activities, the trainees explored the exquisite beauty and diversity of plant life, ranging from delicate petals of blooming plants to the robust leaves of trees.

Cancer Drive:

The students followed their guiding principles and transformed the school into a compassionate learning center. They organized informative seminars and interactive sessions on cancer, self-examination, and supporting loved ones. Bright posters were put up in the corridors, and fundraising events were held to raise money for cancer research. The Cancer Awareness Drive had a long-lasting impact on the school community, confirming its commitment to making a difference in the fight against cancer.

Interaction with Faculties and Students of Jamia Millia Islamia:

ZCWP provides a unique opportunity for students to engage in thought-provoking discussions with Jamia Millia Islamia's faculty and students, fostering lifelong learning. These exchanges transcend academic boundaries, promoting a collaborative environment that promotes mutual growth and academic excellence.

Debate & Symposium in ZCWP:

Engaging in debates and symposiums provides several advantages for teacher trainees, according to various academics. These exercises improve communication skills, critical thinking ability, and topic knowledge. According to research, trainees improve their capacity to convey ideas effectively and logically by offering their perspectives in a controlled way while participating in respectful dialogue with peers (Brown et al., 2019). Symposiums allow teacher trainees to expand their topic knowledge and keep current on educational trends and research results (Johnson & Smith, 2020). Trainees learn about novel teaching approaches, educational technology, and industry best practices through presentations, panel discussions, and networking events (Garcia & Martinez, 2021).

Given the numerous benefits of debates for professional development, critical thinking, and interpersonal skills improvement, researchers methodically prepared an online debate tournament on February 2, 2024. The tournament attempted to imitate the essence of traditional face-to-face debates in a virtual setting, with the goal of encouraging intellectual discourse and providing a forum for students to demonstrate their debating skills. The event began with a well-structured framework that followed the standards of formal debate. Participants were expected to conduct thorough research, develop convincing arguments, and explain their positions eloquently. The

topics of debate, *NATURE VS NURTURE: Debunking Myths and Understanding the Interplay in Child Development and Does Development Lead to Learning or Learning Drives Development* were thought-provoking and relevant to current situations, motivating participants to conduct in-depth critical analysis and constructive discussion. The competition was judged by a panel of distinguished faculty members and subject matter experts, and it upheld high standards of intellectual rigor and impartiality throughout.

Over the course of two fascinating days, students and the coordinators of the project organized a two-days intensive symposium on Educational Society and Educational Technology, demonstrating their research expertise and enthusiasm for academic conversation. With each participant presenting a topic relevant to their area of interest, the symposium provided a vibrant forum for the exchange of ideas and perspectives. Steadfast focus and precise organization were critical in ensuring a successful symposium that attracted and inspired participants.The symposium attracted a wide audience of students, faculty members, and education aficionados from all around the world. The virtual format encouraged extensive involvement and interactive interaction, with viewers actively engaging in conversations via live chat and Q&A sessions.Throughout the symposium, attendees discussed a wide range of subjects, from the influence of social media on education to the use of artificial intelligence in classroom instruction.

Creative Story Sparks: Igniting Imagination through Writing

In this creative writing project, students are given a starting stanza to use as a springboard for their creativity, as well as the opportunity to write their tale in any genre they like. The activity begins with each student getting a stanza that acts as the starting point and basis for their tale. The stanza goes like "*Sanvi along with two of her friends visited the library to find some relevant books for her upcoming exam. While searching for the book, Sanvi stumbled upon a suitable one that contained everything she needed to study for the exam. As she flipped through the pages, she found a 'photo' that slipped onto the floor...*". They came up with creative stories. It was a fun and engaging activity and the trainees truly enjoyed this.

CONCLUSION:

To be successful , one must possess not only knowledge of the subject matter but also a deep passion for learning and an optimal learning environment. This requires the development of self-discipline and decision-making skills that can be applied in challenging situations. The ZERO CLASSROOM WHOLISTIC PROGRAM is the perfect first step towards achieving these goals, offering a comprehensive approach to learning and development that is designed to provide practical solutions for teachers seeking to imbibe these qualities among their learners. With the ZERO CLASSROOM WHOLISTIC PROGRAM, we can be confident that we are on the path to make our learners more effective, skilled, and confident.

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NEP 2020 and Inclusive Education: Making it Happen through Open Distance and Online Learning

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Abstract:

In India, the traditional education system has played a significant role in fostering inclusivity in education, but this system still has some rigidities and constraints that sometime turn barriers for students from marginalized groups. In contrast, open and distance learning (ODL) provides opportunities for these learners through learner-centric and flexible teaching-learning approaches. Therefore, National Education Policy (NEP 2020) recognizes the importance of ODL and has expanded its scope to include digital and online education, further facilitating access to education for deprived or disadvantaged learners.

In this context, present paper examines theprovisions of NEP 2020 for the educational empowerment of weaker sections of the society and issues of accessibility and equity in education and discusses this matter in the context of previous policy documents too. Additionally, it tracesthe prospects and challenges related to policy implementation and offers suggestions to help ODL higher education institutions (HEIs) implement the policy more effectively to makeinclusive education a reality. The study is based on secondary data, mainly previous studies and the NEP 2020 document, and employs document/content analysis methods. The findings of this study may be beneficial for policy planners, institutional leaders, and educational practitioners in formulating guidelines and executing strategies to make education more inclusive, accessible and useful for the target groups.

Keywords: Inclusive education, ODL, NEP 2020, NIOS, IGNOU, Gross Enrollment Ration GER.

Introduction:

The recently announced NEP 2020 sets ambitious goals, aiming for a 100% literacy rate by 2030 and a 50% Gross Enrolment Ratio (GER) in higher education by 2035 (NEP, 2020). Additionally, the policy seeks to reform school education, higher education to achieve Sustainable Development Goal (SDG) 4.3, which targets universal access to school education and higher education. This ambitious target cannot be realized or achieved without educational empowerment of disadvantaged groups, which constitutes a major chunk on total population in India. To achieve these goals, *open* and distance learning(ODL) system may turn a viable and efficient educational delivery mechanism which offers a cost-effective, innovative, flexible and learners' friendly approach of teaching and learning. Despite some challenges, this system has continuously helped central and state governments in achieving ambitious educational targets by promoting literacy across all societal segments through implementation of contemporary policy provisions for inclusive education.

The term inclusive education and related issues are very common word in developing countries including India. The UNESCOhas organized and International Conference on Education, in Geneva from November 25 to 28, 2008 and the theme "Inclusive Education: The Way of the Future" was the focus of the 48th session. The leaders from different countries discussed policy implications and challenges related to inclusivity in education across various contexts and different levels and forms of education. The leaders agreed that primary challenge is to create more inclusive, just, and equitable societies by developing quality education systems that are more inclusive and responsive to the diverse learning needs of individuals (Acedo, 2008).Bordoloi (2018) concurs, noting that inclusive growth involves equal access to education, health services, economic opportunities, and more. The NEP 2020 asserts that "education is the single greatest tool for achieving social justice and equality" (NEP 2020, pp. 24-50).Similarly, it emphasizes upon creating inclusive educational environment at all level and providing level playing fields for learners coming from different socio-economic backgrounds, including leaners with special needs.

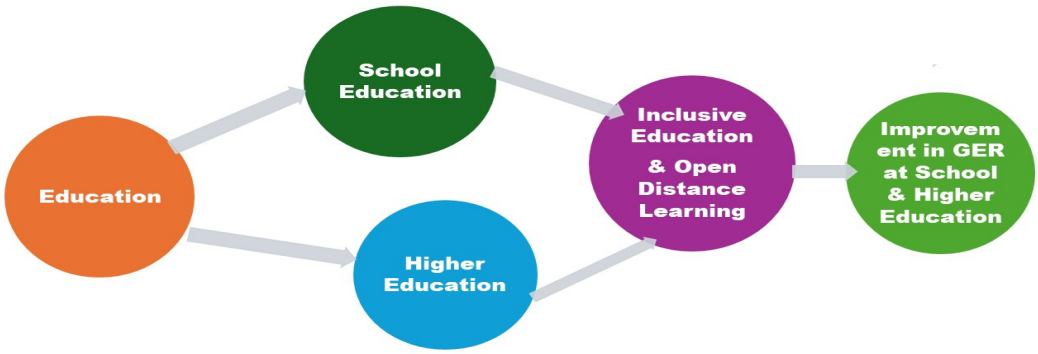


Figure 1. Conceptual Framework: ODL, NEP 2020 and Inclusive Education

Rationale of the Study:

Despite various policies and efforts for educational reforms, there remains a significant gap in literature, particularly regarding inclusive education, implications of policies like NEP 2020 and implementation strategies in ODL systems. According to Haug(2017)the pursuit of inclusive education, while universally supported in theory, faces significant challenges in practice. The alignment between ideals and implementation is weak, there are inconsistent practices and outcomes hindered by political, social, and historical disparities across nations. This gap and lack of focused studies pose a significant obstacle in achieving equity and equal educational opportunities for all.Therefore, there it is very imperative to understand how government policies intersect with ODL to address emerging challenges and develop targeted strategies for the inclusion and empowerment of communities with unique requirements.

Objective of the Study:

1. To discuss the provisions of inclusive education in NEP-2020 for the empowerment of weaker sections and policy implications.
2. To describe open distance education and its role inmaking education inclusive.
3. To discussprospects and challenges and propose suggestions to toward simple mentation policy provisions to improve GER.

Methodology:

The present study employs a descriptive research methodology, gathering data from secondary sources including policy documents including NEP 2020. Through systematic literature review, relevant research papers were selected to understand the implementation and impact of inclusive education policies, particularly on disadvantaged groups, and to assess the role of ODL in achieving policy objectives. Content analysis of pertinent chapters of NEP 2020 was conducted. Digital resources and relevant literature were retrieved from platforms like Google Scholar, Shodhganga, and eGyanKosh. Key insights from previous studies formed the basis for a systematic analysis, facilitating conclusions and recommendations for the effective implementation of NEP 2020, crucial for the educational empowerment of individuals that is basis for the creation of an inclusive society.

Inclusion, NEP 2020 and Educational Empowerment:

India has embraced the 2030 Agenda for Sustainable Development Goal 4, and is committed towards ensuring inclusive and quality education for all by 2030. NEP 2020, also underscores the critical role of inclusive education in fostering equitable accessto quality educational opportunities. Chapters 6 and 14 of NEP 2020 delve into the specifics of addressing low educational penetration and high dropout rates among weaker sections, offering detailed strategies to resolve this problem. The policy recognizes and seeks to address the diverse needs of learners with varied socio-economic and cultural backgrounds who face various obstacles in their educational pursuit caused by numerous factors.

The policy highlights lowenrollment and high dropout amongweaker sections, especially among SCs, STs, differently-abled children (PwD), and female students. NEP 2020 aims to foster

an inclusive culture and provide robust learners support and monitoring system to ensure transparency and equality.Establishment of a Gender-Inclusion Fund to promote gender-inclusive education is another vital point mentioned in the document.Policyalso highlights the representation of minority communities in education, aligning with the overarching goal of promoting social justice and equality through education. NEP 2020 recognizes the transformative potential of education in addressing social, economic, and environmental challenges, and this transformative initiative has the potential to reshape the country's education system by addressing a wide range of social, economic, and environmental challenges (Kaur and Sharma, 2023).

Educational opportunities for all through ODL system:

Traditional or conventional educationsystem often face constraints related to insufficient infrastructure, shortage of faculty members and inadequate funding, whereas ODL system has potential to work within limited infrastructure, funds, teachers and has turned itself a better alternative pathway, particularly beneficial for learners who may be facing some barriers. According to Holmberg (2005), “Distance education covers teaching-learning activities in the cognitive, psycho-motor, and affective domains, characterized by non-contiguous communication, allowing it to occur anywhere and anytime, making it attractive to adults with professional and social commitments."Due to features like flexible teaching methods, maximum autonomyto learners, robust learner support system, well-organized, professionally-coordinated management and administrative networks provides extensive opportunities for higher education on a large scale.

According to (Keegan, 2014)structureof ODL system resembles with an industry with a clear division of labor. Such a comprehensive system effectively addresses the educational aspirations of diverse groups, including those from underdeveloped regions, individuals with special needs, and people burdened with various responsibilities, by allowing them to study fromtheir home as per their convenience (Khokhar, 2007).The advent and use of innovative technologies has further augmented thepopularity and effectiveness of teaching-learning through distance. Thus, recognizing its potential, NEP 2020 calls forextensive use of the ODL system to promote participative and inclusive education.Through targeted interventions and a commitment to addressing systemic inequalities, the policy seeks to pave the way for a more equitable and just society(Kaur and Sharma, 2023).

Inclusive education and role ODL institutions

Distance education institutions like Indira Gandhi National Open University (IGNOU) and National Institute of Open Schooling (NIOS) have made substantial contributions towards achieving the goals of equitable and inclusive education as envisioned in NEP 2020.

These institutional have implemented innovative technologies and platforms to enhance accessibility, equity, and inclusion, particularly for disadvantaged and marginalized groups. IGNOU's regional centers(RCs) and learner support centers (LSCs), alongside NIOS's inclusive approaches and technological adaptations, exemplify efforts to bridge the educational divide and ensure educational access for all.According to IGNOU (2023), “the university is ensuring access, equity, and inclusion through 69 RCs and 2063 LSCs and strives to reach out to students, from

remote areas. It also operates exclusive LSCs for jail inmates, women, and disabled groups."

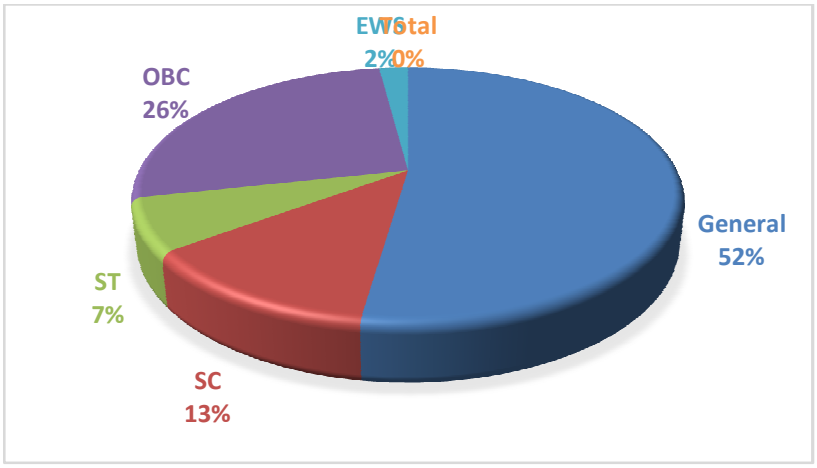
Table 1, Social category-wise enrolment at IGNOU in 2022

Social Category	No of fresh students	%
General	3,60,650	52.30
SC	86,685	12.57
ST	46,213	06.70
OBC	1,81,904	26.38
EWS	14,084	02.04
Total	6,89,536	100

Source:- IGNOU Profile (2023)

In 2022, the enrolment statistics for the IGNOU across various social categories revealed an interesting distribution. Out of a total of 6,89,536 fresh students enrolled, the majority, constituting 52.3%, belonged to the General category, amounting to 3,60,650 individuals. Following this, the SC (Scheduled Caste) category comprised 12.57% of the enrolment, with 86,685 students. ST (Scheduled Tribe) students made up 6.7% of the total, with 46,213 enrollees.Meanwhile, the OBC (Other Backward Classes) category accounted for 26.38% of the enrolment, which translates to 1,81,904 students. The EWS (Economically Weaker Sections) category constituted the smallest portion, with 2.04% of the enrolment, representing 14,084 individuals.

Results show that the General category had the highest enrolment, followed by OBC, while SC, ST, and EWS categories represented comparatively smaller percentages. This distribution underscores the importance of considering more diversity and inclusivity in education, for ensuring more equitable opportunities for all social categories.



Source:- IGNOU Profile 2023

Figure 1: Category-wise enrolment at IGNOU in 2022

The results also highlights the diverse socio-economic landscape of the students, it also underscores the need for targeted initiatives to ensure equitable access and opportunities for education across all social categories.

The enrollment distribution at IGNOU in 2022 sparks discussions on multiple fronts. Firstly, it prompts considerations about the effectiveness of outreach programs aimed at underrepresented communities, particularly SC, ST, and EWS categories, to enhance their participation in higher education. Additionally, it raises questions about the socio-economic factors influencing enrollment patterns and the role of affirmative actionsand policies in fostering inclusivity. Moreover, it underscores the importance of ongoing efforts to address systemic barriers and promote equal access to education for all, regardless of social background, to create a more equitable learning environment.

In the direction of inclusive education, National Institute of Open Schooling (NIOS) has also adopted a multifaceted approach and comprehensive strategies that include, collaborating with the Postal Department, *Grampanchayats,* NGOs, and other organizations to ensure learners access to electronic devices, power, and internet connectivity and also establishing additional support centers, especially in rural and remote areasto make its delivery mechanism more inclusive and accessible. (NIOS, 2022).The support centres of open school disseminate information about admissions, courses, online classes, and examinations, thereby enhancing accessibility for a broader range of students.Following the principle of access, equity and quality education to all, it provides maximum flexibilities and plenty of opportunities to its learners so that they can study at their own pace and through use of multimedia based learning resources. Besides these for the purpose of inclusion of children with disabilities into the mainstream education, theNIOS, has also developed mechanism of providing learning material in Indian Sign Language and orienting parents and learners through Indian Sign language dictionary (Singh & Mahapatra, 2019).

Initiatives and figures from above two ODL institutions underscores the importance of implementing inclusive policies and affirmative action measures to ensure equitable access to education. By actively addressing systemic inequalities and providing support to underrepresented groups, institutions like IGNOU and NIOS can foster a more diverse and inclusive learning environment that benefits all students.

Technology for inclusivity and challenges

The integration of technology in distance education has made teaching and learning more flexible and accessible.According to Jacobs (2012) technology-mediated innovative teaching-learning modesreduce the time and costs associated with travel, increase opportunities for accessing and collaborating with prominent teachers/experts , provide students with the flexibility to access courses at their convenience, need and choice. As a whole online education, use of digital tools, and innovative teaching methods, has revolutionized the whole education system. Therefore NEP 2020 too recognises the potential of technology by emphasising to implement advancededucational technologies and tools to enhance educational experiences of learners and teachers.

Despite these advancements, there are various challenges as reported by Ching-Chiang et

al. (2022); Ersoy (2023), they found a few challenges faced by weaker sections like limited digital literacy, digital, language and cultural disparities, and lack of support and motivation. Mehra et al. (2004) advocate for the active involvement in empowering the learners form weaker sections shaping various aspects of internet access, training, content development, and system design and evaluation to remove barriers and promote inclusivity for all users, regardless of their backgrounds.

These challenges collectively hinder the achievement of equitable educational opportunities and to address these challenges a multifaceted approach is required, including funding systems, training for educators, and the development of inclusive technologies. According to Haug(2017), the development of teacher competencies in inclusive pedagogy is paramount and systematic efforts are required to equip educators with the necessary skills to effectively address the diverse needs of all students. The effective implementation of these strategies can empower and transform India's higher education landscape, making it more inclusive and equitable for all sections of society. They emphasize the importance of establishing a robust framework of community-driven learning supported by innovative lessons, learner support mechanisms, and initiatives to bridge gaps and promote equitable access to technology and education.

The implementation of NEP 2020 holds significant promise for transforming India's educational landscape into a more inclusive, equitable, and dynamic system. By engaging diverse stakeholders, including governments, educational institutions, and international partners, the policy aims to bridge gaps and address disparities and proposes scholarships and the establishment of Special Education Zones, skill development and employment opportunities. Nevertheless, Joshi et al. (2021) and Asgar and Ratra (2020) pinpoint significant barriers and challenges in online education, particularly those stemming from unfavourable home environments. They suggest that by allocating adequate budgets for educational technology, and investing in and developing rural infrastructure to enhance connectivity and accessibility may be helpful in addressing some challenges. Mehra et al. (2004) emphasizes upon examining the specific needsof marginalized groups to and role of technology in their educationalempowerment.Digital literacy training, financial assistance, development of localized content and collaborative e efforts by all to formulate multifaceted strategies to mitigate barriers faced by learners from weaker sections may turn out effective (Ersoy, 2023) and this canbuild higher quality human capital (), leading to the development of a more resilient and effective education system.

Additionally, the policy promotes targeted recruitment of teachers and leaders from minority etc, potentially creating more job opportunities in the education sector for Scheduled Castes (SCs), Scheduled Tribes (STs), and other disadvantaged groups (Nand, 2020). While Kumar & Singh (2022) stresses upon revamp of HEIs, through training and skill development to ensure equality of educational and employment opportunities, thereby empowering the local population of disadvantaged groups. Joshi et al. (2021) acknowledges the policy's focus on equity and inclusivity but emphasize that its true impact will only be evident when underrepresented, disadvantaged, rural, and remote areas' students gain equal access to education. They highlight this

as a key outcome that should be observed in the coming years.

Conclusion and Suggestions:

Over the time, state and central governments have introduced various initiatives and formulated policies aimed at providing comprehensive educational support to the general populace, with a special emphasis on inclusive education. This support extends to socio-economically deprived sections, women, transgender individuals, persons with disabilities, children with special needs, minorities, and other marginalized sections identified by the government. The NEP 2020, in particular, seeks to enact comprehensive reforms within the current education system to address issues of accessibility, equity, and quality education for all. The policy acknowledges the diverse needs of various deprived sections and endeavors to promote educational outreach and accessibility. In this context, ODL emerges as a viable alternative due to its flexible teaching-learning methods and cost-effectiveness,

While NEP 2020 is hailed as a visionary document with far-reaching implications for the Indian education system, several challenges need to be addressed to effectively educate learners from all groups, in a holistic manner. These challenges include inadequate infrastructure, a shortage of trained faculty, lack of familiarity with technology among faculty, high costs of education, language barriers, and varying social and ground realities. In view of these and results of discussions in the previous section following are the suggestions to address some of the problems and challenges:

1. *Bring awareness among students at all levels, particularly those from disadvantaged groups, about opportunities in higher education; availability of financial benefits such as fee exemptions, scholarships, grants-in-aid, and financial assistance to motivate them towards education.*
2. *Remove language barriers and offer programs and courses in local/regional languages to attract varies learners.*
3. *Create an inclusive environment and disabled-friendly infrastructure.*
4. *Empower women and transgender individuals by maintaining gender balance in admissions.*
5. *Ensure digital inclusivity in technological interventions and initiatives.*
6. *Foster collaboration and partnerships with NGOs and civil society to educate and empower marginalised and minorities.*
7. *Develop infrastructure and integrate technology with pedagogy.*

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