

BRIDGING GAPS: AI'S ROLE IN ADVANCING EDUCATIONAL EQUITY UNDER NATIONAL EDUCATION POLICY 2020

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ABSTRACT

In line with the ambitious goals of the National Education Policy (NEP) 2020, the incorporation of artificial intelligence (AI) into education is bringing in a revolutionary period for India's educational system. The importance of education is emphasized heavily in National Education Policy 2020. The policy statement states that education should be utilized to develop decent persons with strong moral convictions, courage, resilience, compassion, and empathy, as well as scientists and creative thinkers and rational thinkers and doers. This study explores how NEP 2020 will significantly affect the use of technology in education, with a focus on AI and adaptive learning. It looks at how customization enabled by AI can change education by adjusting it to each learner's particular needs. It also looks at how AI can be used in exams to provide customized evaluation and feedback.

Keywords: NEP2020, AI, adaptive learning.

I. INTRODUCTION

Every nation's educational institutions have a duty to liberate and empower its people, and as a result, education is a vital tool for enacting social change. India must continue to support innovation and high-caliber research in its reputable educational institutions if it is to live up to its rich history and culture of education and become a global centre of knowledge.

In India, there have been continuous efforts to create a new education policy since 2015. On July 29, 2020, the Ministry of Human Resource Development (MHRD) released the National Education Policy, following several meetings with stakeholders from the education sector regarding the draft NEP of 2019[2]. It is the outcome of a democratic process that involved gathering proposals in a bottom-up manner from thousands of villages, districts, states, and union territories. This is India's

first education policy of the twenty-first century and its third after independence, having been in place for 34 years after the last one. This information alone allows for the evaluation of NEP-2020's necessity and applicability.

The 66-page NEP paper that was released addresses every facet of education and takes a fairly inclusive stance. The scope of the coverage is astounding, timely, and futuristic, with the potential to drastically alter India's educational environment. NEP-2020 fits in with the national initiatives of the Indian government, such as Made in India, Skill India, and Atma-Nirbhar (self-reliant) India. It also takes into account the need for strong solutions for India's economic development and progress. The primary goals of NEP-2020 are to prepare students for the workforce and society by providing them with the essential 21st-century skills of experimentation, digital literacy, critical and creative thinking, and problem solving. The five guiding pillars of Access, Equity, Quality, Affordability, and Accountability form the foundation of NEP 2020. It will equip our young people to handle the many domestic and international issues of the twenty-first century. It suggests that each subject's curriculum be pared down to its "core essential" information in order to provide room for learning that is comprehensive, analytical and discussion-based.

A. NEP & ITS KEY INITIATIVES

Among the significant modifications included in NEP-2020 are:

- The Ministry of Human Resource Development (MHRD) has been renamed the Ministry of Education due to its emphasis on education rather than on it being the next step in human resource development.
- Replacing the independent AICTE (All India Council for Technical Education) and UGC (University Grant Commission) organizations with the Higher Education Commission of India (HECI), a single central academic regulator and accreditor for HEIs (higher education institutes).
- The NEP-2020 also includes revisions to the educational phases spanning from school to higher education.
- The "10+2" educational structure used in schools has been replaced with the "5 +3+3+4" design, which places more emphasis on experiential learning and enhances the quality of

teaching and learning outcomes by introducing vocational education in the form of internships to impart skills early in life for a student's holistic development.

- NEP-2020 envisions that by 2030, the gross enrolment ratio (GER), which measures access to education for all, will rise from the current 28% in school-level education and 5% in higher and professional education to 20% and 50%, respectively, due to the strengthening of infrastructure facilities across all dimensions[2].

B. SCOPE OF AI IN EDUCATION

In the realm of education, artificial intelligence (AI) is essential. Both teachers and students benefit from the automated method it offers for grading answer sheets and automating instruction. Artificial intelligence improves education in both the administrative and curriculum domains, enabling teachers to assist students considerably more successfully. It can help educators speed up the assessment process by providing feedback and identifying strengths and weaknesses of students.

Artificial intelligence provides teachers with a number of benefits, including learning analytics (LA), virtual reality (VR), grading/assessments (G/A), and admissions. Three models of artificial intelligence can be distinguished: directed, supported, and empowered AI. Every paradigm offers fresh possibilities, challenges, and opportunities for teaching methods.

The best ways to use AI for pedagogy on a bigger scale and how it can impact teaching and learning in higher education are yet unknown to educators. Advances in algorithms, large amounts of data, and inexpensively available computer power and storage are just a few of the ways artificial intelligence technology advancements help solve educational problems.

II. ALIGNMENT OF AI WITH NEP 2020 GOALS

Artificial Intelligence (AI) can play a significant role in achieving several goals outlined in the NEP 2020[5]. Here are some ways AI can align with the NEP 2020 goals:

1. **Access and Equity:** AI-powered educational tools can provide personalized learning experiences tailored to the needs of individual students, regardless of their geographical

location or socio-economic background. This can help bridge the gap in access to quality education.

2. **Quality Education:** AI can assist in improving the quality of education by providing adaptive learning platforms, intelligent tutoring systems, and educational content recommendation systems. These technologies can enhance the effectiveness of teaching and learning processes, ensuring better learning outcomes.
3. **Multidisciplinary Education:** AI promotes interdisciplinary learning by integrating concepts from various fields such as computer science, mathematics, and cognitive science. This aligns with NEP 2020's emphasis on promoting multidisciplinary education to foster critical thinking and creativity among students.
4. **Teacher Professional Development:** AI can support teacher training and professional development by offering personalized feedback, recommending teaching strategies, and facilitating access to online resources. This can help enhance the pedagogical skills of educators, aligning with NEP 2020's focus on continuous professional development.
5. **Assessment and Evaluation:** AI-powered assessment tools can provide real-time feedback on students' performance and progress. By analyzing large datasets, AI can generate insights into students' learning patterns and areas for improvement, enabling educators to offer targeted interventions.
6. **Flexible Learning Pathways:** AI-driven adaptive learning platforms can accommodate diverse learning styles and paces, allowing students to progress at their own speed. This supports NEP 2020's vision of flexible learning pathways that cater to the individual needs and interests of learners.
7. **Research and Innovation:** AI facilitates research and innovation in education by enabling the analysis of educational data, modeling learning processes, and developing intelligent educational technologies. This can contribute to the advancement of educational practices and policies as envisaged in NEP 2020.

8. **Ethical Use of Technology:** NEP 2020 emphasizes the ethical use of technology in education, including data privacy, security, and equity considerations. Integrating AI responsibly into educational practices requires addressing ethical concerns and ensuring equity in access to AI-powered tools and resources.
9. **Augmented reality and virtual reality:** AI-powered tools such as augmented reality (AR) and virtual reality (VR) are being used in higher education to create immersive learning experiences. AR and VR allow students to visualize complex concepts and interact with virtual objects in a way that was not previously possible.

Overall, aligning AI with the goals of NEP 2020 can contribute to the transformation of the education system in India, making it more inclusive, effective, and responsive to the needs of 21st-century learners. However, it's essential to implement AI initiatives in education with careful planning, stakeholder engagement, and monitoring to maximize their benefits while addressing potential challenges.

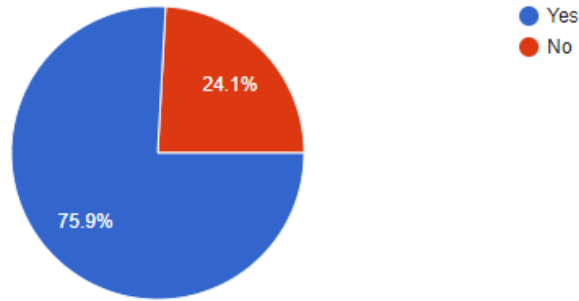
III Research Methodology

Primary and secondary data form the foundation of the research. Google Forms is used to collect primary data from respondents via questionnaires. For the objective of the study, 52 responses have been collected. Through the Ministry of Human Resource Development's NEP 2020, secondary data is gathered. Convenience sampling is the sample strategy that is employed.

IV Analysis of Data

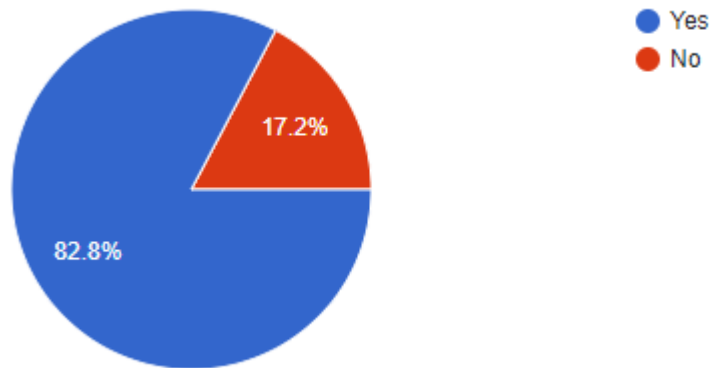
The study was conducted with total of 50 samples. The questionnaire was filled by graduate students and were based on how much aware they are about NEP2020 and contribution of Artificial Intelligence in implementing the policy.

Awareness of NEP2020



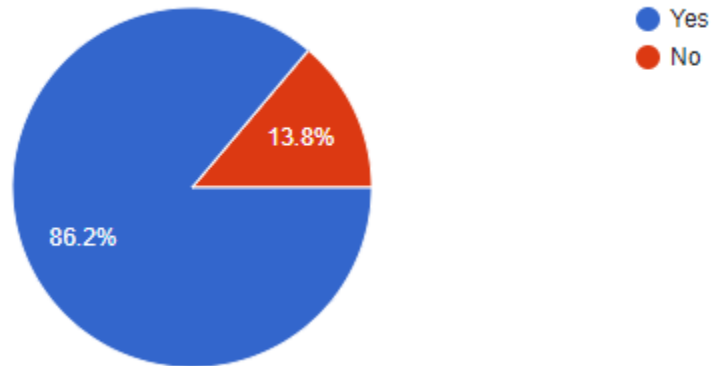
The above figure shows that 75.9% of students are aware about the policy whereas 24.1 % are still unaware about this. Generating awareness and upgrading the teaching pedagogy as per the policy will help the students in improving their academics as well as Industry skills.

Understanding of goals and objectives of NEP 2020



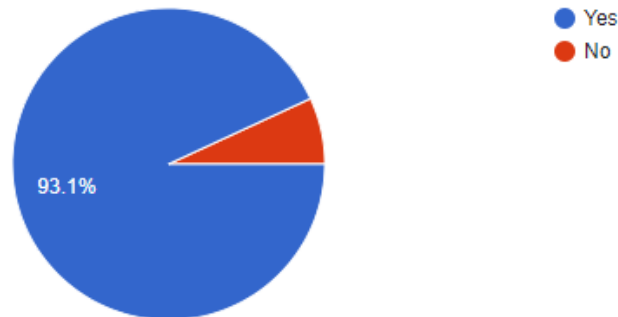
The above statistics shows that majority of students have clarity about the goals and objectives of NEP2020 whereas 17.2% know the overview of the policy but don't have in depth knowledge of its goals and objectives.

NEP 2020 addresses the issue of educational quality effectively



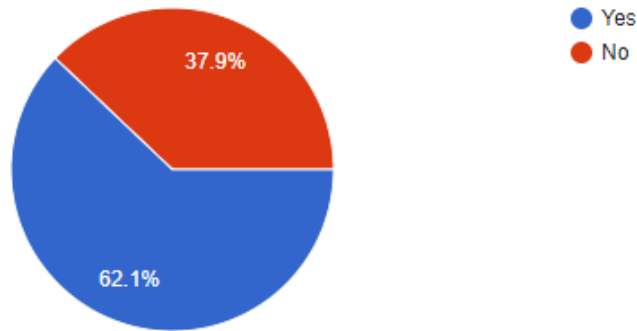
The 86.2% respondents agree with the fact that NEP2020 will enhance the quality of the education amongst the students.

Awareness about Artificial Intelligence (AI) in the context of education



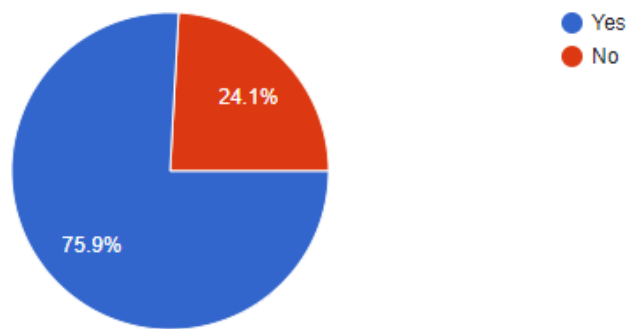
The study shows that 93.1% students are aware of the role of Artificial Intelligence in education sector. They agree that AI has given boom to Education sector by coming up with various innovation teaching learning pedagogy tools.

Awareness of AI-driven initiatives or tools aimed at promoting educational equity under NEP 2020?



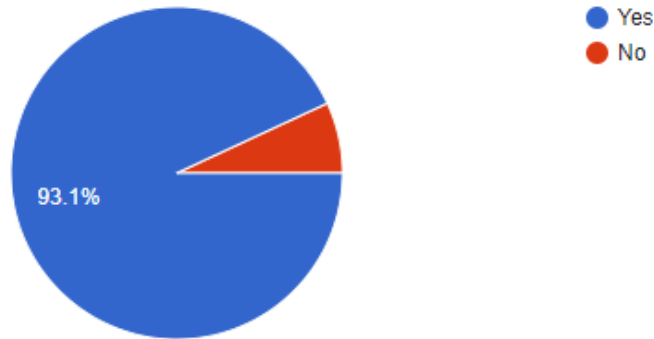
The study shows that there is still need of making the students aware about the AI-driven initiatives or tools aimed at promoting educational equity under NEP 2020. Only 62.1% respondents have used or gained knowledge of these tools.

Ethical or privacy concerns associated with the use of AI in education, especially in the context of equity



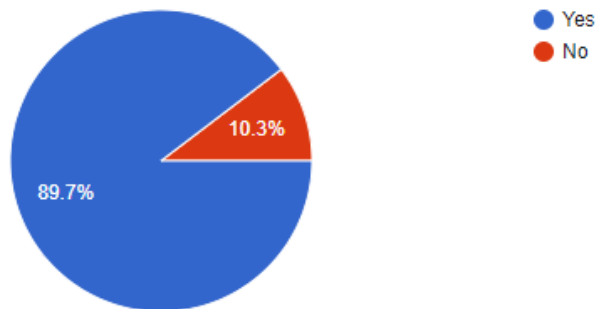
Around 75.9% students agree on this opinion that there are ethical or privacy concerns associated with the use of AI in education sector. These concerns should be taken care of while implementing them in real world scenario.

Impact of AI on the educational outcomes of marginalized or underserved communities



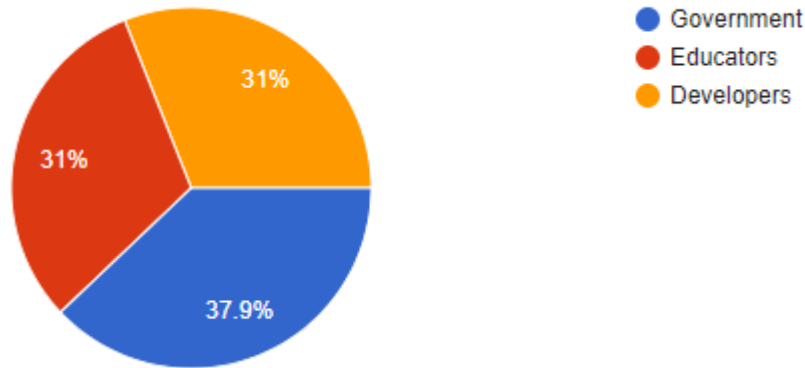
Majority of the students have the viewpoint that use of AI can have a positive impact in upliftment of marginalized or underserved communities as they can provide them with new techniques and methods of enhancing their education and also plays major role in other areas also such as healthcare, agriculture, jobs, etc.

AI has the potential to reduce disparities in learning outcomes across different demographic groups



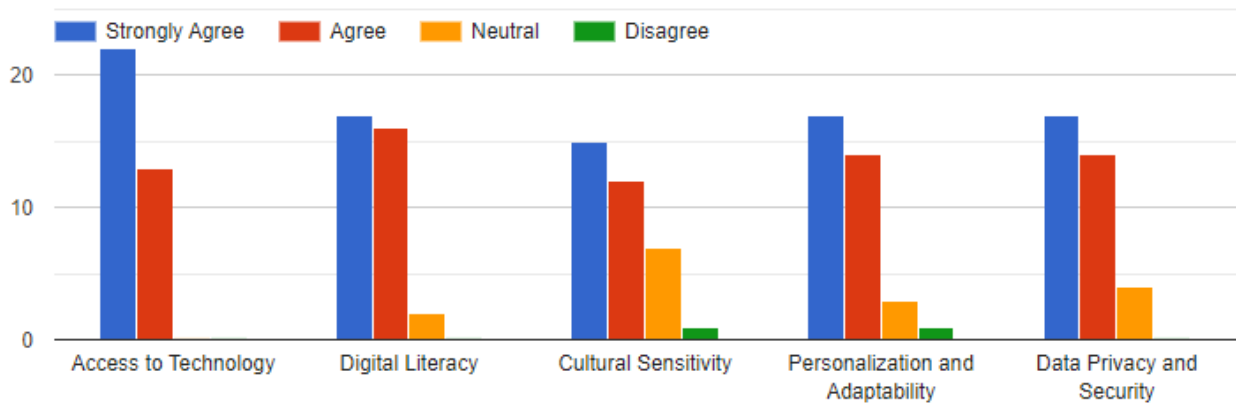
Around 89.7% respondents agree that AI can reduce the disparities in learning outcomes across different demographic groups. Only 10.3% respondents still have doubt on this aspect.

Stakeholders playing a major role in leveraging AI for educational equity under NEP 2020



According to the respondents all these three stakeholders i.e. Government, Educators and Developers play nearly similar role in leveraging AI in educational sector. AI can help in making the tasks easier, understandable and learnability can become more practical oriented.

Factors crucial for the successful integration of AI in promoting educational equity



It has been observed that for successful integration of AI in NEP2020 access to technology is of utmost importance followed by digital literacy, personalization & adaptability, data privacy & security and cultural sensitivity. All these factors play a crucial role in promoting educational equity[19].

That being said, the fast spread of Artificial Intelligence (AI) is driving a major revolution in the education sector. It is currently flourishing in classrooms all over the world, bringing the idea of customized instruction and universal accessibility to life and playing a crucial role in closing the achievement gap in education. It's critical to comprehend the potent convergence of AI and learning in order to deliver equal education for all kids, regardless of their socioeconomic circumstances, as global trends in education continue to take inventive twists.

CONCLUSION

AI and other cutting-edge technology will become more and more important as the education industry develops in order to guarantee that every student receives a top-notch education. Utilizing AI, remote learning tools, and student skill development can assist NEP 2020 realize its vision and is in line with its objectives. With the help of AI-powered learning platforms, students can receive individualized recommendations for learning routes and content, enabling them to progress at their own speed and in a way that best meets their needs. Higher education is using AI-powered technologies like augmented reality (AR) and virtual reality (VR) to build immersive learning environments. Students may now visualize difficult ideas and engage with virtual things in a way that was not previously feasible thanks to AR and VR. Therefore, by utilizing AI's potential, we can close gaps, promote inclusion, and open the door to a better future for everybody.

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