

LEVERAGING AI FOR PERSONALIZED LEARNING: A STEP TOWARDS ACHIEVING THE GOALS OF NEP 2020

* *Piyali Ghosh Hore & Dr. Sangeeta Nath*

* Assistant Professor & **Principal, Oriental College of Education, Sanpada, Navi Mumbai.

Abstract:

To improve the educational system, the Indian National Education Policy (NEP) 2020 places a strong emphasis on integrating technology, particularly artificial intelligence (AI). AI is acknowledged as a potent instrument that can transform several facets of education. By concentrating on the individual needs of each student, personalized learning can help adjacent the gap and improve engagement, comprehension, and academic results. Personalized learning is an educational approach that adapts the learning experience to the individual needs, interests, strengths, and learning paces of students. The traditional one-size-fits-all model frequently finds it difficult to address the diverse learning needs of students, especially in large and diverse classrooms. This paper emphasis the needs of the students in overall aspects and can participate in the curriculum in a way that best suits their learning style, this paper also go through the NEP 2020's highlights towards the change from the traditional one-size-fits-all model to a more learner-centric approach. It also focuses on the inclusive and holistic impact of AI for personalised learning which enhances policy recognition that every learner has distinct learning needs and that the system should facilitate each learner to progress at their own pace.

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Introduction:

The National Education Policy (NEP) 2020 is a comprehensive framework designed to guide the development of the education system in India. It was approved by the Union Cabinet of India on July 29, 2020, marking a significant shift towards a more inclusive, holistic, and flexible approach to education. The policy replaces the National Policy on Education (NPE) 1986, which had been in place for more than three decades. NEP 2020 is a forward-thinking document that aims to prepare students for the future, making education more relevant to the needs of the 21st century. NEP 2020, a comprehensive framework introduced by the Government of India, aims to transform the Indian education system to make it more holistic, accessible, and aligned with global standards. One of the key objectives of NEP 2020 is to provide quality education to all students, ensuring equity and inclusion while fostering critical thinking, creativity, and lifelong learning. Among the various innovations proposed, the integration of Artificial Intelligence (AI) in education is poised to play a crucial role in achieving these goals, particularly in the domain of personalized learning.

The Need for Personalized Learning: Personalized learning is an educational approach that tailors the learning experience to the individual needs, interests, strengths, and learning paces of students. The traditional one-size-

fits-all model often struggles to address the diverse learning needs of students, particularly in large and varied classrooms. Personalized learning can help bridge the gap by focusing on the unique needs of each student, thereby promoting better engagement, understanding, and academic outcomes.

NEP 2020 emphasizes the importance of “learner-centric” approaches, wherein the pace, style, and mode of learning are adjusted according to the learner's needs. It advocates for a shift from rote learning to an experiential, inquiry-based learning system, where students are actively engaged and provided with opportunities to explore subjects in-depth. AI offers the tools necessary to make this vision a reality by providing real-time feedback, adaptive learning paths, and intelligent content.

NEP 2020 for Personalized Learning:

The National Education Policy (NEP) 2020, launched by the Government of India, represents a transformative approach to education in the country, emphasizing a holistic, inclusive, and learner-centric approach. One of the central pillars of NEP 2020 is the concept of personalized learning, which aligns with the evolving needs of students in an increasingly diverse and dynamic world.

Personalized learning refers to customizing the educational experience based on the individual needs, interests, learning paces, and strengths of each student. NEP 2020 recognizes the importance of providing a learning environment that caters to the unique characteristics of every learner, promoting their overall growth, creativity, and critical thinking skills.

Here is a deeper look into how NEP 2020 envisions personalized learning and the key components that contribute to it:

1. Focus on Individual Learner Needs:

NEP 2020 stresses a shift from the traditional one-size-fits-all model to a more learner-centric approach. The policy acknowledges that each student has different learning needs, and therefore, the system should provide opportunities for each learner to progress at their own pace. By doing so, NEP 2020 seeks to ensure that students are not left behind and are able to engage meaningfully with the curriculum in a way that suits their learning style.

Key Strategies:

- **Flexible Curriculum Design:** The policy promotes flexibility in the curriculum, encouraging schools to move beyond rigid textbooks and syllabi to allow space for students' interests, skills, and talents. This will enable students to focus more on areas where they are most engaged.
- **Multiple Pathways for Learning:** NEP 2020 proposes multiple pathways, including vocational education, arts, and sports alongside traditional academic streams. This flexibility allows students to pursue subjects that align with their strengths, interests, and future aspirations, fostering a more personalized educational experience.

2. Integration of Technology for Personalized Learning

One of the most powerful enablers of personalized learning is technology, particularly Artificial Intelligence (AI) and digital platforms. NEP 2020 outlines the need for technology to be embedded in the educational

process, enabling personalized learning experiences through smart tools, adaptive learning software, and data-driven insights.

Key Strategies:

- **Digital Platforms and Learning Tools:** The policy highlights the need for online platforms that adapt to a student's learning pace. Tools that provide personalized learning paths, monitor progress, and suggest resources can tailor learning to individual needs, thereby promoting better engagement and retention.
- **AI and Data Analytics:** AI can analyze student performance in real-time, providing immediate feedback and recommending resources based on their strengths and weaknesses. This makes it easier for educators to focus on students who need additional support and provide advanced challenges for high-achievers.

3. Holistic and Multidimensional Assessment

NEP 2020 advocates for **continuous and comprehensive assessment** instead of the traditional focus on one-time exams. By adopting a multidimensional approach, NEP aims to personalize assessments by considering a wider array of student capabilities, such as critical thinking, creativity, emotional intelligence, and problem-solving skills.

Key Strategies:

- **Formative Assessments:** Continuous evaluation through regular assessments ensures that teachers understand the learner's progress over time. This approach supports personalized learning by allowing for real-time interventions and adjustments to teaching strategies.
- **Competency-Based Learning:** The policy emphasizes assessing competencies rather than rote memorization. Students are encouraged to demonstrate their understanding of concepts at their own pace, which can be supported through personalized learning pathways.

4. Emphasis on Social-Emotional Learning and Mental Health

Personalized learning goes beyond academic achievements to focus on social-emotional learning (SEL) and mental health, which NEP 2020 recognizes as integral to holistic development. The policy acknowledges that each student's emotional and psychological needs must be addressed for effective learning.

Key Strategies:

- **Counselling and Mentorship:** Schools are encouraged to incorporate counselling services, peer mentoring, and emotional intelligence programs to help students navigate challenges and ensure that their individual needs are met.
- **Inclusivity and Equity:** NEP 2020 advocates for inclusive education that caters to students with diverse learning abilities and backgrounds. Personalized learning plays a critical role in ensuring that marginalized and differently-abled students are not left behind. Technology can assist in providing tailored resources for students with disabilities or learning challenges.

5. Teacher Empowerment and Training

To effectively implement personalized learning, teachers must be equipped with the necessary skills and tools. NEP 2020 emphasizes continuous professional development for teachers, ensuring they are trained in

new pedagogical approaches and technologies that foster personalized learning.

Key Strategies:

- **Professional Development Programs:** NEP 2020 stresses the need for teachers to be trained in modern teaching methods, digital literacy, and how to use technology to meet the needs of diverse learners. This includes understanding how to assess students' needs and adapt their teaching strategies accordingly.
- **Collaboration and Autonomy:** Teachers are encouraged to collaborate with peers, share best practices, and create personalized lesson plans. NEP 2020 advocates for autonomy and flexibility in the classroom, giving teachers the freedom to design learning experiences based on student needs.

6. Flexible Learning Paths and Lifelong Learning

NEP 2020 recognizes that learning should be a lifelong pursuit and advocates for flexible learning paths that allow learners to progress at their own pace. This is particularly important for adult learners and those in non-traditional educational settings.

Key Strategies:

- **Multiple Entry and Exit Points:** The policy promotes flexible entry and exit points in education. Students can enter or exit formal education at different stages depending on their personal needs or career goals, which is a hallmark of personalized learning.
- **Lifelong Learning:** NEP 2020 emphasizes the need for a robust lifelong learning ecosystem, where individuals can continue learning through online courses, certifications, or other forms of education. AI can support this by recommending courses based on individual career goals and skill gaps.

How AI Can Facilitate Personalized Learning:

1. Adaptive Learning Platforms:

AI-powered adaptive learning platforms can analyze student responses, identify areas of difficulty, and provide tailored learning paths. By continuously assessing the student's progress, these platforms adjust the difficulty level of tasks, ensuring that students are neither overwhelmed nor under-challenged. This helps maintain an optimal learning pace, which is one of the fundamental principles of NEP 2020. Tools like smart tutoring systems can assess student performance, offer personalized guidance, and suggest resources specific to their needs, fostering a deeper understanding of the subject matter.

2. Data-Driven Insights for Teachers:

AI can empower educators by providing them with data-driven insights into students' learning patterns, strengths, and areas that need improvement. Teachers can use this information to design personalized learning interventions, group students effectively, and provide targeted support. By freeing teachers from administrative burdens, AI allows them to focus more on the individualized needs of students, aligning with NEP's goal of enhancing teacher quality and reducing workload.

3. Intelligent Content Creation:

AI can be used to generate dynamic and interactive learning content, such as quizzes, exercises, and multimedia resources that cater to the diverse needs of learners. For example, an AI-based system can

generate customized learning resources based on a student's current progress, reinforcing concepts they struggle with while providing advanced challenges to more proficient learners. This ability to offer dynamic content supports the NEP's emphasis on experiential learning and creative problem-solving.

4. Real-Time Feedback and Assessment:

AI can provide instantaneous feedback on assignments, quizzes, and other learning activities, enabling students to understand their mistakes and correct them in real time. This instant feedback loop is vital in maintaining student engagement and motivation, which are critical to the success of personalized learning. As NEP 2020 advocates for continuous formative assessments over traditional summative assessments, AI can ensure timely and effective feedback that helps students track their progress.

5. Inclusive Learning:

AI can make learning more inclusive by supporting students with diverse needs. For instance, students with disabilities can benefit from AI-driven assistive technologies such as voice recognition, text-to-speech, or customized learning interfaces that meet their specific requirements. These inclusive tools will ensure that students from all backgrounds and abilities have equal opportunities to succeed, a key component of NEP 2020's focus on inclusivity and access to quality education.

6. Encouraging Lifelong Learning:

NEP 2020 stresses the importance of lifelong learning, where learning is not confined to the early years but continues throughout an individual's life. AI can support this goal by offering personalized learning resources beyond the formal classroom, such as online courses, certification programs, and micro-learning modules. AI tools can assess the learning needs of adults, identify knowledge gaps, and suggest targeted courses to enhance their skills, promoting a culture of continuous learning.

Challenges and Considerations in Implementing AI for Personalized Learning:

While AI has immense potential to revolutionize education, its integration into the education system requires careful planning and consideration. Some challenges include:

- **Data Privacy and Security:** AI systems rely on collecting large amounts of data to personalize learning experiences. It is crucial to ensure that this data is stored securely and that students' privacy is protected in accordance with national data protection laws.
- **Equity in Access:** For AI-powered personalized learning to be effective, it requires access to technology and the internet. Given that many parts of India still face infrastructural challenges, the digital divide must be addressed to ensure equitable access to AI tools for all students.
- **Teacher Training:** Teachers must be adequately trained to use AI-based tools and integrate them into their teaching practices effectively. NEP 2020 emphasizes the need for continuous professional development, and training teachers in AI literacy will be critical to realizing the full potential of AI in education.
- **Ethical Use of AI:** It is essential to ensure that AI tools are used ethically, with a focus on enhancing learning rather than replacing human teachers. AI should act as a supplement to teaching, not a replacement.

Conclusion:

Leveraging AI for personalized learning is a significant step toward realizing the goals set forth by NEP 2020. By tailoring educational experiences to the needs of individual students, AI can create more engaging, inclusive, and effective learning environments. It aligns with NEP 2020's vision of a student-centric, flexible, and lifelong learning system. However, the successful integration of AI in education will depend on overcoming challenges such as infrastructure, training, and equity, ensuring that the benefits of AI are accessible to all students. As technology evolves, the Indian education system has the opportunity to embrace AI as a powerful tool to transform the learning experience and shape the future of education in India.

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Cite This Article:

Hore P.G.& Dr. Nath S. (2025). Leveraging AI for personalized learning: A step towards achieving the goals of NEP 2020. **In Educreator Research Journal: Vol. XII (Issue I)**, pp. 73–78.