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NEP 2020 and AI: Redefining the Role of Teachers

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Abstract

Quality education is one of the key goals outlined in the Sustainable Development Goals (SDGs) introduced by the United Nations in 2015. Through the implementation of the National Education Policy (NEP) 2020, India is making significant progress toward achieving this objective, with Artificial Intelligence (AI) serving as a major driving force.

AI is contributing significantly to the successful implementation of NEP's major goals, such as universal access to education, modernization of the education system, and the development of a holistic and multidisciplinary learning approach. Its components—machine learning, deep learning, and extensive data-based knowledge systems—are transforming the educational landscape.

By presenting vast amounts of human knowledge in an accessible and user-friendly way, AI has revolutionized learning. However, this progress also raises concerns about the possibility of machines replacing human roles. Despite this, the human element in education remains essential and cannot be replicated by machines.

Teachers play a vital role as they nurture students' emotional intelligence, social skills, resilience, interpersonal abilities, and sense of psychological safety—all of which are crucial for meaningful learning. Therefore, rather than reducing the importance of teachers, AI actually strengthens and supports their role.

Instead of imagining a future where AI replaces teachers with robotic substitutes, it is more realistic to view AI as transforming the role of educators. It allows teachers to utilize their time more efficiently and apply their expertise more effectively, leading to improved learning experiences.

Ultimately, AI does not replace teaching; it enhances it. Teachers will continue their fundamental role of educating and guiding students, but with more advanced tools and resources at their disposal.

Keywords: Quality education, SDGs, NEP 2020, AIED, teachers' role.

Introduction

During the 70th session of the United Nations General Assembly in 2015, all 193 member states adopted 17 Sustainable Development Goals (SDGs) as part of the 2030 Agenda for Sustainable Development. These goals provide

a comprehensive framework aimed at ensuring peace and prosperity for people and the planet, both now and in the future, through global collaboration.

Among these, Quality Education (SDG 4) plays a crucial role in achieving the broader set of goals. The United Nations defines quality education as “ensuring inclusive and equitable education and promoting lifelong learning opportunities for all.” In alignment with this vision, India's National Education Policy (NEP) 2020 has restructured the education system to support meaningful learning and to help achieve the targets set under the SDGs.

Education is often regarded as the foundation of nation-building. While a nation may be defined by its geographical boundaries and legal systems, its true strength lies in the knowledge, skills, and values of its citizens—outcomes that are shaped through education. By ensuring inclusive and equitable access, education empowers children from marginalized communities, learners with disabilities, and those in conflict-affected areas, giving them equal opportunities to succeed. This, in turn, leads to the development of skilled, informed, and responsible citizens who contribute to national progress.

In this transformative journey, Artificial Intelligence is emerging as a powerful cognitive driver that can support the implementation of NEP 2020 at the grassroots level. It facilitates digital literacy, personalized learning experiences, intelligent content creation, customized study plans, and automates routine administrative tasks such as grading and attendance.

By automating these processes, AI provides teachers with valuable time that can be redirected toward personalized mentoring and fostering stronger student-teacher relationships. Therefore, by effectively integrating the guiding principles of the SDGs, the vision of NEP 2020, and the capabilities of AI, teachers can expand and strengthen their role in delivering quality education at scale.

Scope of study :

1. Basic working of AI
2. Enhancement of teachers' role in Teaching -Learning process through AI

3. Enhancement of teachers' role for administrative work through AI
4. Enhancement of teachers' role for content creation and curriculum support through AI

1. Basic working of AI

In India, era of digitalisation started with the launch of Internet by VSNL on 15th August 1995. But it took two decades to propel our nation towards digital country. On 1st July 2015 Prime Minister Narendra Modi launched 'Digital India' program, with an objective of connecting rural areas with high speed internet networks, improving digital literacy across the country. With the release of NITI aayog's National Strategy for Artificial Intelligence (#AI for All) in 2018, AI came in central focus and entered in almost every field of life, including education, healthcare, agriculture, industries and governance.

The transition from basic digitisation, to the era of Artificial Intelligence is a journey of turning physical information into 'thinking' data using advanced software algorithm. AI is a paradigm shift in Digitalisation. While traditional software follows "If-Then" logic (e.g., "If the user clicks this, open that"), AI identifies patterns in data, to make its own decisions smartly. This process is done in three steps:

- **Data Collection (The Library)**- In this step the system is fed with massive amounts of information—text, images, audios, videos etc., which acts as the 'fuel' for the AI.
- **Training (The Learning)**- Here an algorithm (the "brain" of AI) processes this data and records it in mathematical pattern.
- **Inference (The Output)** – when any new prompt is given to AI, using pattern matching it predicts the best answer.

To perform these tasks, AI relies on these three core technologies:

- **Machine Learning (ML)**: Instead of a human programmer writing manual rules for every possible scenario, ML uses algorithms to parse data, learn from it, and then make a determination or prediction.
- **Neural Networks**: These are nested software structures inspired by the human brain to recognize complex details.
- **Deep Learning**: It is a more advanced version of neural networks with multilayers (hence "deep"). It is what allows AI to understand human requirements and act accordingly. E.g. recognising speech or driving a car.

Thus AI analyzes complex data, generates creative content, and simplifies daily tasks. Due to this, it is assumed that, AI has solution for all queries. But unless large amount of data is fed by subject specific experts and nested programming is done by expert programmers, AI can not work. Therefore, AI is often compared to a growing child, as its behaviour is heavily influenced by the data and parameters provided by its human creator. Thus AI is celebration of human qualities.

2. Enhancement of teachers' role in Teaching -Learning process through AI

Integration of Artificial Intelligence in education has shifted from a 'futuristic concept' to a practical reality. With AI, many advanced tools and techniques in hand, teachers can enhance their role in teaching-learning process drastically. One of the greatest challenge in traditional education was the "teaching to the middle" or "one-size-fits-all" where fast learners were bored and struggling learners were left behind. There was no scope for children with marginalized backgrounds and those with disabilities. NEP 2020 has strongly recommended to move away from this approach. And AI will play vital role in achieving this target.

- With the help of AI, teacher can analyse students' performance. A dash board can be created to know different levels of students and with the help of personalised learning tools and techniques teacher can create different versions of core lesson for different level of students - for advanced learners, for the general class, and with scaffolded support for weak learners, thus addressing individual challenges more effectively.
- AI can help students with different disabilities. For students with visual impairments, AI can read digital content through natural-sounding voices in the selected language. For deaf or hard of hearing students, speech to text software can be used for instant captions. All these features will help to create a **inclusive classroom** and **equitable learning opportunities**.
- NEP 2020 has insisted on local languages or **mother tongue** as medium of instruction till grade five. Students with same language can be grouped and with the help of Audio aids, can be instructed in their language.
- One of the recommendation of NEP 2020 is, no hard separations between curricular and extra-curricular activities, between vocational and academic streams. With the help of advanced features of AI, like AR/VR (Augmented reality/ virtual reality) teachers can provide activities, project, to fulfil this recommendation.
- With the help of AI, teacher can improvise CCM. **Multidisciplinary approach** can be given to contents, which will shift emphasis from rote learning to conceptual learning, creativity and critical thinking. It will also help in encouraging intellectual curiosity, which will lead to lifelong learning. Different dimensions can be added to methodologies with the help of audio, video and graphical aids. With the use of these aids, students' engagement will improve and thus teachers will have better class control.
- With the help of AI, **Intelligent Tutoring** System can be adopted, teachers can guide students to use platforms like DIKSHA, e-pathshala, swayam-prabha, which will provide students with content tailored to their specific learning pace and style.
- AI can help in conducting **Adaptive Assessments**, instead of fixed exams. AI-driven tests can be conducted, which will adjust their difficulty level based on student performance in real-time, helping to identify specific learning gaps. Also instant automated feedback on these exams, will allow students to iterate

immediately. With early identification of learning difficulties, teachers can adjust instruction proactively to enhance learning quality

- Advanced AI technique offers wearable integration tools. It means connecting smart devices (like watches, rings, glasses) with AI software, which can automatically share data of students behaviour. From this data, students grasping, understanding, concentration level, can be known, which can further be used for personalised learning.

With all these features of AI, a question arises, can teachers be replaced by **robots**. In current situation, the answer is 'NO', not completely. They will rapidly become **indispensable partners** in the classroom to assist teacher in digitalised and repetitive work. Teachers can utilise this free time productively and their expertise will be better deployed to provide high quality learning experience.

3. Enhancement of teachers' role for administrative work through AI

AI can restore teacher's primary identity as a mentor and creative content creator by automating the 'drudgery' of administrative work.

- One of the main aim of NEP 2020 is to reduce dropout rates by implementing various strategies. With the help of AI, monitoring attendance, grade patterns and health issues, students with high risk of dropping out can be identified. This early intervention will definitely help to reduce dropout rates.
- Using Predictive Analytics AI can alert teachers to early signs of student disengagement or mental health struggles before they manifest as failing grades.
- With the help of Smart Scheduling algorithms, AI can optimize complex timetables, managing room availability and teacher substitutions in seconds—a task that previously took hours of manual jigsaw work.
- AI can help in health checkup and immunisation records.
- AI can help in taking Scholarship decisions for disadvantaged and underprivileged students as per government policies.
- AI can help in recruitment of teachers depending upon subject wise and location wise vacancies. Also transfers of teacher to nearby places can be managed.
- NEP 2020 recommends to define Special education zones (SEZs) for disadvantaged regions. By properly analysing the data regarding academic progress and resources availability at rural areas, AI can help in this aspect.
- NEP 2020 strongly suggests promotion of teachers based on merit, rather than on seniority. AI can maintain Teacher's achievements records and help in this aspect.
- NEP 2020 strongly recommends, Standard-setting and Accreditation for School Education. AI can help in maintaining financial and academic records required for this aspect.
- Globalization of education emphasis on Academic Bank of Credits (ABC). AI can help to maintain the records of

ABC and also in transferring the credits across Universities as and when demanded by students.

4. Enhancement of teachers' role for content creation and curriculum support through AI

While NCERT/SCERT publishes 'what' is to be taught through textbooks, teachers decide 'how'. With subject matter expertise, teachers often create notes, supplemental readings, slide decks, and digital media that reflect their students' backgrounds and interests. Multimedia Integration and interactive quizzes makes learning joyful. Teachers act as a bridge between raw information and student's engagement of different learning styles.

Curriculum and syllabus are theoretical documents and a classroom is a living environment. Through these documents teachers provide the necessary scaffolding that helps a struggling student reach the high bar set by the curriculum.

With the help of AI applications like NotebookLM, Eelphas, Notion teachers' can organise these notes and documents. They can upload PDFs, websites, YouTube videos, audio files, Audio Overview, Google Docs, Google Slides and more on these applications and retrieve them as and when required easily in the teaching learning process. These apps are also capable of summarizing these documents and making interesting connections between topics, all powered by the latest version of AI's multimodal understanding capabilities.

This fulfils the requirement of NEP 2020; teachers as high-quality online content creators, themselves using online teaching platforms and tools.

Best practices to use AI :

- Pedagogy first, technology second
- Students should be made aware of entering a right query /prompt. A small change in prompt may lead to a different result.
- Data Privacy should be respected. Sensitive data should not be fed to open AI models.
- Depending upon stage of learning students should be instructed, when AI is "fully prohibited," "allowed for brainstorming," or "fully integrated" for a specific activity.
- The "OODA Loop" (Observe, Orient, Decide, Act) perspective can be used to define boundaries between human and machine. AI is excellent at Observing and Orienting (processing data) but Humans must retain the Decide and Act phases to ensure authenticity and ethical values of the output data.
- Teachers should know the difference between Human-in-the-loop (HITL) and Human-on-the-loop (HOTL) approach. In HITL approach, AI cannot complete the task without a human's active intervention. The process stops and waits for the teacher's input at critical stages. It ensures that AI doesn't make a "hallucinated" or biased mistake that directly impacts a student. Preparing lesson plans, creating contents, getting worksheets checked by AI are some of the examples of this approach. In HOTL approach, AI completes the task autonomously. Human interrupts the process only if they see an anomaly. Attendance

record, calculating grades etc. are some of the examples of HOTL approach.

Challenges in using AI:

- NEP 2020 has expanded the age window to 3-18. Looking at the mass population and diversity in our country, provision of effective & sufficient infrastructure is big challenge.
- Policies of NEP 2020 and AI are ambitious but many educators still lack structured training required to implement it successfully.
- Academic success is about more than just passing tests; it involves cognitive and social development that machines cannot yet replicate:
- Role of AI in Cultivating life skills like cooperation, teamwork, empathy, resilience, emotions, spiritual intelligence is questionable
- The screen time required to work with AI, may create different Health issues such as spine disorder, eye strain, fatigue etc.
- AI models can carry cultural or racial biases from their training data as each community will feed data as per their beliefs which might be contradictory with other community. Educators must "human-check" AI-generated content for fairness.
- The basic feature of education is 'Learning to learn for lifelong learning'. Over dependency on AI may hinder this approach.

Conclusion :

Quality education serves as the cornerstone for achieving all Sustainable Development Goals. Its success depends on a strong partnership between competent educators and advanced technologies. Rather than replacing teachers, Artificial Intelligence functions as an intelligent support system that enhances their effectiveness. When applied ethically and responsibly, AI enables educators to provide inclusive, personalized, and high-quality learning experiences. The ideal balance in education can be described as a "golden ratio," where AI manages data-driven and repetitive tasks, while teachers focus on inspiration, critical thinking, and contextual understanding.

However, it is equally important to consider the other side of technological advancement. AI infrastructure consumes significant amounts of electricity and requires vast quantities of water to cool data centers, thereby putting pressure on natural resources. This raises an important concern: is the rapid expansion of such technologies driven by genuine necessity, or is it an outcome of excessive dependence and technological ambition?

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