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Beyond the chalkboard: A study on the shifting responsibilities and skill sets of teachers in the age of AI

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Abstract
The integration of Artificial Intelligence (AI) into the educational landscape is fundamentally reshaping the role of the teacher. This paper investigates this transformation, moving the teacher's function from a traditional "instructor" to a modern "facilitator." The research, conducted in Nashik city, Maharashtra, explores how AI-powered tools are being utilized to automate administrative tasks, personalize learning experiences, and enable teachers to focus on higher-order skills development. Through a mixed-methods approach, this study examines the opportunities and challenges faced by educators in adopting these technologies, the impact on student learning outcomes, and the necessary shifts in pedagogical practices and professional development. The findings indicate that while AI offers significant potential for enhancing efficiency and individualizing instruction, its successful implementation requires strategic training, ethical considerations, and a fundamental change in mindset among both teachers and educational institutions. This paper also considers the impact of policies like the National Education Policy (NEP) and the pedagogical shifts necessitated by the COVID-19 pandemic on this ongoing transformation.

Keywords: Artificial Intelligence, teachers, pedagogical practices, educational technology, personalized learning, facilitator, Nashik, India, NEP, COVID-19

Introduction
The advent of Artificial Intelligence has been a game changer across various sectors, and education is no exception. Historically, the teacher's role has been that of a primary knowledge provider the "sage on the stage." However, with the proliferation of digital information and the introduction of AI-powered educational tools, this traditional model is becoming increasingly obsolete. AI technologies such as intelligent tutoring systems, adaptive learning platforms, and automated grading software are now capable of handling many of the routine and repetitive tasks that once consumed a significant portion of a teacher's time.

This seismic shift has created a new paradigm where the teacher's role is evolving into that of a "facilitator" or "guide on the side." In this new role, the teacher leverages AI to gain insights into student performance, tailor instruction to individual needs, and foster critical thinking, creativity, and socio-emotional skills-abilities that AI cannot replicate. This paper aims to explore this transformative process within the specific context of schools and colleges in Nashik, a city that represents a blend of traditional educational values and a growing embrace of modern technology. Furthermore, the study acknowledges the significant impact of the COVID-19 pandemic, which accelerated the adoption of digital tools and online teaching, and the National Education Policy (NEP), which explicitly promotes the use of technology and a shift towards skillbased, student-centric learning.

Objectives of the Study
The primary objectives of this research are:
1. To identify the specific AI-powered tools and applications currently being used by teachers in schools and colleges in Nashik.
2. To analyse the impact of these tools on educators' daily tasks, particularly in terms of administrative workload and instructional time.

3. To examine how the integration of AI, influenced by the NEP and the experiences of the COVID-19 pandemic, is changing the pedagogical practices of educators.
4. To assess the perceived benefits and challenges of AI adoption from the perspective of teachers in the city.
5. To recommend strategies for effective AI integration and professional development for educators in the Nashik educational system.

Review of Literature

The global literature on AI in education consistently highlights a move away from traditional teaching methods. Research by Zawacki-Richter *et al*. (2020) [1] and a comprehensive review by The Academic (2025) emphasize that AI is not meant to replace teachers but to augment their capabilities. Studies have shown that AI can effectively provide personalized feedback and adaptive learning paths, thereby catering to the diverse needs of students in a single classroom.

In the Indian context, the shift is particularly relevant given the large student-to-teacher ratio in many schools and colleges. A 2025 study from IIT Delhi revealed that a significant number of students and faculty are already using generative AI tools, indicating a growing acceptance and integration of these technologies. However, this same research also pointed out ethical concerns like data privacy, potential biases in AI, and the risk of over-reliance on technology, which could undermine the development of critical thinking skills. This body of literature provides a strong foundation for the present study, underscoring the need to investigate these trends in a specific urban setting like Nashik. The National Education Policy (NEP) 2020, with its emphasis on leveraging technology to enhance learning and its promotion of a holistic, skill-based curriculum, provides a key policy framework for this study. The transformative period of the COVID-19 pandemic, which forced a rapid transition to online and video-based teaching, also serves as a crucial contextual factor, accelerating the adoption of digital tools and changing the pedagogical mindset of educators.

Research Methodology

This study utilized a descriptive research design with a cross-sectional approach, combining both qualitative and quantitative data collection to provide a comprehensive understanding of the use of AI in education in Nashik. The research was focused on educators at the graduation level, specifically teachers in colleges within the city.

The study was conducted with a sample of 110 educators, all of whom were teachers at various colleges in Nashik. A stratified sampling method was employed to ensure a representative sample, dividing the teacher's population into strata based on their university affiliation and academic discipline. A structured questionnaire served as the primary data collection instrument, gathering both quantitative and qualitative data.

The questionnaire, which was administered to all 110 teachers, captured several key aspects:

- **Quantitative Data:** Familiarity with AI tools, frequency of use, and perceived impact on workload were measured using a Likert scale.
- **Qualitative Data:** Open-ended questions were used to gain deeper insights into their experiences, challenges, and opinions regarding AI integration.

The study also collected secondary data from various sources, including government reports on the National Education Policy (NEP) 2020, academic studies on AI in education, and online course descriptions to understand the landscape of available professional development for educators.

Results and Observations

The results of the study indicate a significant increase in the use of AI tools among teachers in Nashik. Our findings show that 85% of the surveyed educators reported using AI for tasks such as creating lesson plans, generating quizzes, and automating parts of the grading process. This widespread adoption has led to a perceived reduction in administrative workload and an increase in time available for direct student engagement.

Quantitative Findings

The study found a strong correlation between the adoption of AI and pedagogical shifts, a trend strongly influenced by the COVID-19 pandemic. The data on professional development revealed that 70% of teachers are actively updating their skills through online and offline courses focused on digital pedagogy and AI applications. This proactive skill development is a direct result of the lessons learned during the pandemic.

- The study identified several AI-powered tools and applications in use. Among the surveyed teachers, 65% use ChatGPT or other generative AI models like Google Gemini for drafting content, simplifying complex topics, and generating quiz questions. Other popular tools include Canva's Magic Studio, used by 40% of educators for creating visual aids; Grammarly, used by 70% for editing and feedback; and platforms like Quizizz AI, utilized by 35% for generating interactive learning activities. Additionally, Quill Bot was mentioned by 30% of educators for paraphrasing and creating differentiated materials.
- The data revealed that 55% of female teachers reported using AI tools at least three times a week, compared to 45% of their male counterparts. This suggests a higher engagement level among female educators, particularly for administrative tasks.
- While 85% of teachers recognized the benefits of AI, a significant number around 60% expressed concern over the high cost of advanced AI tools, forcing them to rely on free, less powerful versions. Furthermore, 75% of educators felt there was a significant gap between their current skills and the skills required to effectively utilize AI, indicating a need for more comprehensive training.
- A striking 70% of the participants highlighted the lack of reliable internet access and institutional hardware as major barriers to effective AI integration.

This digital divide was a recurring theme in the qualitative data.

Qualitative Insights

Thematic analysis of the qualitative data provided deeper insights into the educators' experiences.

- A recurring observation was the ineffectiveness of AI

for subjects requiring visual or complex numerical representations. One teacher noted that for teaching numerical concepts, "the chalk and board are best and cannot be taught by AI," emphasizing the irreplaceable value of traditional methods for certain disciplines.

- Teachers observed that while students' understanding could be inconsistent with AI-generated content, learning became "more interesting if used properly," especially with the use of visuals. As one teacher aptly stated, "pictures can be explained more than words," highlighting the benefit of AI in creating rich, engaging visual content.
- The teachers highly valued the self-paced benefit of AI tools, with 90% of respondents acknowledging that AI-powered platforms allowed students to learn at their own speed, which was particularly useful for remedial work and reinforcing difficult concepts outside of the classroom.

Conclusion

- The research provides compelling evidence that AI-powered tools are actively transforming pedagogical practices among graduation-level educators in Nashik. This transition has been significantly accelerated by the lessons learned during the COVID-19 pandemic and is being guided by the principles of the National Education Policy (NEP) 2020. The study confirms that while the benefits of reduced administrative workload and enhanced personalized learning are evident, the transformation is not without its hurdles.
- A key finding is the nuanced adoption of AI, where educators, particularly female teachers, are leveraging these tools to save time and focus on more direct student engagement. However, the reliance on self-learning and the lack of formal, institution-provided training has led to inconsistencies in implementation and created an unequal playing field due to variations in infrastructure and skills. The study also clearly highlights the limitations of AI, especially for subjects requiring hands-on numerical problem-solving, reaffirming that technologies are a supplement to, and not a replacement for, traditional teaching methods. The concerns raised by teachers regarding the digital divide, cost factors, and student engagement underscore the need for a balanced approach.
- Ultimately, the future of education in Nashik will depend on how effectively educational institutions empower their educators. This involves not only providing comprehensive professional development and establishing clear ethical guidelines but also ensuring equitable access to technology. By addressing these challenges, institutions can harness the power of AI to create more dynamic, personalized, and human-centered learning environments, moving educators from traditional instructors to modern facilitators in the true spirit of the NEP 2020.

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