NAVIGATING THROUGH AI-DRIVEN WORLD: CURRENT CRISIS IN EDUCATION AND THE CRITICAL ROLE OF HUMAN-IN-THE-LOOP

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Abstract:

Education system has three functions in society. First is to teach knowledge and skills, the second is to use exams to identify students, and the third is to provide a common sense of facts and values. These three functions can be referred to as 'Human development', 'Sorting' and 'Socialisation'. The paper highlights the current crisis in education, where our education system has been focusing only on the 'Sorting' function rather than 'Human Development' inculcating the culture of rote memorisation and the developments in the fields of education are only quantitative than qualitative as evidenced by the Annual Status of Education Report (ASER). This paper explores and tries to understand the reasons behind the decreasing quality of education, the probable solutions with the help of AI in education, focusing on the balance between technological innovation, traditional learning approaches, and also emphasises on the importance of human oversight. While AI offers personalized learning, tailored curriculums, and interactive environments, it struggles with fostering cognitive abilities, creativity, and critical thinking. Solutions such as the Teaching at the Right Level (TaRL) approach and the integration of Humans-in-the-Loop approach are proposed to address these gaps.

Keywords: *Education, Artificial Intelligence, Role of Human intervention*

Introduction:

"The teacher who walks in the shadow of the temple, among his followers, gives not of his wisdom but rather of his faith and his lovingness."
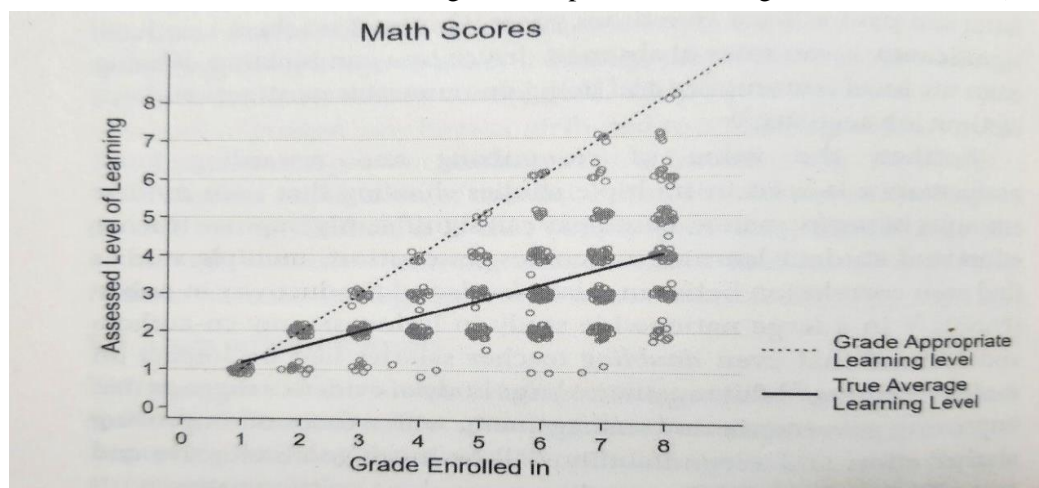
(Kahlil Gibran- The Prophet, 1923)

According to Merriam-Webster dictionary, artificial intelligence (AI) is the ability of a machine to mimic intelligent human behavior. AI is the driving force of the Fourth Industrial Revolution (G Velarde, 2020). AI has started to restructure social order by influencing economic structures, labour markets, governance, services and our daily interactions (Saseanu, Gogonea & Ghita, 2024). Despite its benefits, AI has faced scrutiny due to instinctive fears about job loss, privacy invasion, and loss of human control. In a recent survey conducted by IIM Ahmedabad, 67% of people fear AI will steal their jobs and 53% expect AI will create new opportunities. The World Economic Forum report on Future of Jobs underscores the dynamic nature of the labor market and the critical need for adaptability among workers and employers alike (WEF, 2024). The fear of job losses due

to technological changes like automation is not new in history. But some argue that this is a clear exaggeration of AI capabilities (A Zirar, 2023). AI will endanger jobs which are repetitive in nature. AI has become an umbrella term and shades its light on all aspects of life including Education. During a survey conducted in mid-2024, 77% students said they were using AI regularly in the class work (Tushar Gandhi, 2024). As Winston Churchill once said, "Never waste a good crisis." This highlights the need to proactively study AI's impact on education, develop a strong policy framework, and shape its use in a way that ensures benefits for all. Everyone in education has a responsibility to harness the good to serve educational priorities while also protecting against the dangers that may arise as a result of AI being integrated in education. To create a better learning environment for future generations, collaboration is essential among teachers, support staff, leaders, policymakers, universities, institutions, funders, and organizations. Everyone in education has a responsibility to harness the good to serve educational priorities while also protecting against the dangers that may arise as a result of AI being integrated in edtech. This paper shades light on the problems regarding Indian Education and probable solutions with the help of AI.

Current Crisis in Education:

After Independence, India paid more attention to tertiary education, however this came at the cost of underinvestment in Primary Education. In early 1980's Government of India started prioritising primary education and was able to achieve enrolment gains. Despite this, learning levels remain low (ASER, 2023).
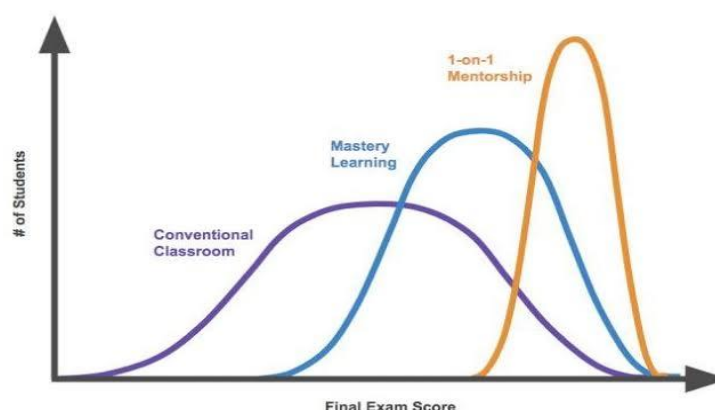

(Graph: Murlidharan, 2019)

On the other hand, there are Indians who rule the Global Companies like Google, Microsoft, IBM, Adobe, Starbucks and Cognizant. This educational crisis is one of the greatest challenges we face as a country today. Also this is the area where large research has yielded new insights. The reasons for this dire state of education can be attributed to: Outdated curriculum, Teachers' shortage and quality, Infrastructural gaps, Inequality in access, Exam-centric approach, Lack of industry alignment, Poor assessment, Lack of research and development, and Political & Bureaucratic interference.

With the help of AI we can improve the education system in several ways:

1. **Personalised Learning:** The study published by Benjamin Bloom, an Educational Psychologist shows that students who received one-on-one mentoring performed significantly better than the traditional educational methods (2 Sigma Problem, 1984).

2. This observation highlights the need to reduce inequalities in access to education, ensuring that all students receive the support and resources necessary for effective learning. Newer technology has been the key to increasing productivity. Using AI in education can similarly facilitate sharp gains. The possibilities of including technology are:
   a. Reduce inequality in accessing education
   b. Education can be more interactive
   c. Gamification and rewards can increase motivation
   d. Rapid feedback for improvisation.

3. **Teaching at Right Level (TARL)** : Where syllabus is tailored to students' current learning lever, rather than rigid age based curricula. It has been observed that supplemental instruction delivered by teachers can be highly effective at improving basic literacy (Abhijeet Banerjee & Ester Duflo, Nobel Prize Citation- 2019). In many developing countries the classrooms are overcrowded and grouping students according to their ability and providing personalised training is difficult. AI can help overcome this challenge by bridging the gap between the standard curriculum and students' actual learning levels. With its ability to assess individual progress and adapt teaching methods accordingly, AI can provide personalized learning experiences, ensuring that each student receives the support they need at their level.

4. **Importance of education in Regional Languages:** For most people, the vast majority of their dreams are likely experienced in their mother tongue, with studies suggesting that the percentage is very high, often close to 100% for individuals who are primarily fluent in one language. Most of the ideas are generated in their mother tongue. Since Indian education primarily focuses on the English language, students often struggle to express their ideas effectively. This language barrier limits their ability to innovate, as they may find it difficult to think, communicate, or present their ideas confidently in English. Even when they have creative thoughts, translating them into a foreign language can be challenging, hindering their participation in global

discussions and opportunities. AI powered tools can translate study materials in regional languages making the education more inclusive.

5. **Smart Content:** Our pictorial memory is often stronger than verbal memory because the brain processes and retains images more efficiently than words. We remember 80% of what we see and only 20% of what we read and 10% of what we hear (Allan Paivio, 1971). AI tools like quizzes, video lessons, and animations make learning more interactive and engaging by presenting information in a visually appealing and dynamic way. These tools help students grasp complex concepts easily, maintain their interest, and improve retention by making the learning experience more immersive and personalized.

Importance of Human-in-the-loop (HITL):

"AI brings educational technology to an inflection point. We can either increase disparities or shrink them, depending on what we do now" (Dr. Russell Shilling). Automated responses generated by AI can often reduce responsibilities. Since AI lacks the quality of historical data, responses from AI can produce output that can be inappropriate and wrong, and lead to unwanted biases. Data Inequality (uneven distribution of data) to train the AI models can give inaccurate results if applied to a diverse set of populations. Unintended consequences of AI can widen the gap in understanding by creating disparities in access to quality education. If AI tools are not equally available to all students, those with better access to technology will advance faster, while others may fall behind (MIT, 2022).
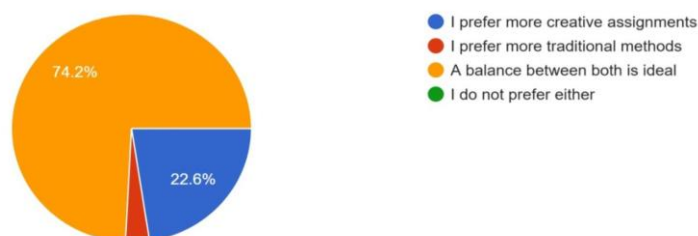
AI lacks Consciousness, Common Sense, and Contextual Judgment (the 3 Cs), which are essential in education, where decisions have real consequences. While AI can process data and provide recommendations, it does not truly understand emotions, ethical dilemmas, or the deeper context behind a student's learning needs. This makes human teachers irreplaceable, as they bring empathy, intuition, and real-world judgment that AI cannot replicate. Hence teachers should be part of the process.

AI struggles to create something entirely new from scratch. While impressive in imitating human language, ultimately offer a false promise because they lack true intelligence, reasoning, and ethical understanding (Noam Chomsky in NYT, 2024).

Each student has a unique neurodiversity, meaning their brain processes information differently. This makes every student's learning style, strengths, and challenges distinct (I Madden, 2023). While some students may excel in traditional learning environments, others may need alternative approaches to thrive. Understanding these differences is key to creating inclusive educational settings that cater to each student's individual needs. Traditional methods and teachers are often better equipped to understand and address these differences because they can observe students' behaviors, learning styles, and emotional responses directly. With their experience and personal interaction, teachers can adapt their teaching strategies to meet the diverse needs of students, something that might be harder for automated systems or AI to do.

A small survey conducted by us in 2024, where we tried to uncover the opinions of the participants in regard to AI in education. In this study, the perceptions of the participants on AI in education were examined. Purposeful sampling was preferred during the determination of the participants. Purposeful sampling is the selection in

accordance with the purpose of the research (Akgun & Dermirel, 2018). Three target groups that included 30 participants in total have been identified by the researcher regarding AI in education. The questions sent to the participants asked for their opinions on AI, specifically regarding how they perceive its role in education. Additionally, the survey inquired about their preference between traditional teaching methods and AI-based learning methods, to understand which approach they feel more comfortable with or find more effective. When the data was analysed it was observed that 74% of participants wanted a balance between the AI and Traditional method of education.

Conclusion:

Henry Ford famously said: "If I had asked people what they wanted, they would have said faster horses." This quote highlights thinking beyond the existing solutions. Similarly India's education system exemplifies our weak state capacity and poor quality of public expenditure to fix this problem. We must first acknowledge the significance of artificial intelligence and think beyond conventional perspectives. It's crucial to engage in discussions about how AI is transforming the world and its implications. Prioritizing AI should be a key focus in political agendas, as it has the potential to shape future economies and societies. Additionally, we must fundamentally reform our educational system to prepare future generations for the rapid advancements in AI and its impact on various industries.

The phrase "No solution is a permanent solution" implies that every solution has its limitations and requires regular review and adjustment due to the ever-changing nature of the world. A collective vision should be developed. The role of humans in the loop is just as crucial as that of artificial intelligence in shaping our world. While AI can process data and automate tasks efficiently, humans provide the necessary oversight, ethical judgment, and emotional intelligence that AI lacks. This collaboration between human expertise and AI's capabilities is essential to ensure effective decision-making and responsible use of technology.

As we embrace new technology and explore uncharted territories, we must also remember the importance of understanding our inner world. Balancing technological advancement with self-awareness and emotional intelligence ensures that we stay grounded and connected to our core values while navigating change.

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