Can AI Close the Learning Gap of Indian Education System?

When it comes to the Indian Education system, we've come a long way. But there still exist some gaps and deep-seated challenges that, if overseen, can grow as the curriculum becomes rigorous. And if the problem is not resolved soon, it will cost India up to 10% of the national expenditure on primary education. The need of the hour is to customise the curriculum based on an individual's pace and comfort. Some believe AI can help address this problem effectively within a short span. But can it really? Let's understand.

We may all resonate with the constitutional amendment that makes free education compulsory for children in the age group of six to fourteen years across Government schools. However, there are some deep-seated challenges pertaining to the Indian education system that will leave us questioning our approach towards the implementation of this fundamental right.

> **"one cannot oversee the huge gap that continues to widen as the curriculum becomes rigorous. The problem persists not only within government schools but also across private institutions. ...India needs to understand that fixing it late can cost up to 10% of the national expenditure on primary education.**

According to a recent survey, about half the students in government schools fail to comprehend a simple text. There are also instances of students who fail to do rudimentary arithmetic even in the 8th grade.
Whether it is due to a weak foundational understanding or the lack of personalised attention, one cannot oversee the huge gap that continues to widen as the curriculum becomes rigorous.

The problem persists not only within government schools but also across private institutions.
Some states and entrepreneurs do realise the problem but India needs to understand that fixing it late can cost up to 10% of the national expenditure on primary education.

We can no longer continue with a 'one-size fits all' approach. Hence, the need of the hour is to customise the curriculum based on an individual's pace and comfort.

The solution lies with AI technology or Artificial Intelligence that can address this problem effectively within a short span.

AI, and the personalized learning experience that it fosters can fundamentally change how courses are delivered.

In India, the importance of a developed education sector is amplified by a large youth population. Estimates indicate that currently over half the population of the country is below the age of 25. As the adoption of digital means of gathering data increases, it is important that these methods are effectively leveraged to deliver improved education and teaching. Let's understand AI's game-changing potential through these three scenarios:

> **Facial recognition, voice recognition, and emotional analysis can measure student engagement, emotions, and determine their attention, understanding, and confidence.**

Scenario 1: Helping Teachers
Course instructors can avail an AI system to make teaching effective. For instance, facial recognition, voice recognition, and emotional analysis can measure student engagement, emotions, and determine their attention, understanding, and confidence. AI also enables teachers to access the best content available globally and personalize it for each student in their local language.

Scenario 2: Personalizing the Learning Experience
AI-based tutoring and guided content that adapts according to the learning style, needs, and engagement can help students learn at their own pace. For example, adaptive homework or learning aids can tailor assignments or content to align with a student's understanding, moving and provide better coaching and tutoring.

Scenario 3: Enhancing Third-party Learning Content
Online adaptive learning platforms have made huge strides in the past few years. AI turbocharges such third-party tools by personalizing the experience, understanding how a specific student is interacting with the platform, and recommending the right content for each student to ensure that they are making progress.

What is the Value of Investing in AI for Education?

The potential economic and social benefits of AI taking a front seat in education create a case for action that is difficult to ignore:

- Benefit 1: Better educational outcomes
- Benefit 2: Improved quality and scalability of teacher training

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21st Century Classroom

91%
of teachers have computers in their classroom but just **1 in 5** feel their classromms have the right level of technology

Increasing the presence of the following Technologies could change that ratio

Learning Analytics

- Help teachers assess top concerns and achievements related to their students

Online Courses

- Almost a third of all college students take atleast one online course

- Online enrollments saw **21%** growth while overall higher education student population only saw **2%** growth

- Only **65%** of education institutes count online learning as critical for long-term educational success

Games & Gamification

- **43%** of teachers have used online games in the classroom

In one study, games raised average test scores:

- **91.5%** with the use of digital games **79.1%** without the use of digital games

Top 3 reasons for teachers **to use technology in the classroom**

76%
adapt to diverse learning styles

77%
boost student motivation

76%
enhance the material being taught

81%
of teachers believe tablets enrich classroom learning

86%
of students believe they study more efficiently with tablets

59%
of students would like to see thier own mobile devices to enhance learning

With the Continuous and Comprehensive Evaluation or CCE pattern, we wanted to foster personalized learning. However, this process is practically dying due to the lack of synergy between the learners, the course, and the educators. With AI, we can make personalized education a reality. The important considerations to make greater use of AI in the Education system would be:

Personal Privacy -. Parents are never comfortable sharing any data of their children without sound reasons. Data is the foundation for effective AI-based tools and in order to make it successful, schools must provide a clear and understandable value proposition to families, employ sophisticated tools and practices to maintain and protect student data, and operate with transparency.

Freedom from Bias- AI developers and educators must remain aware of any bias with regard to the data collected by an AI system. If the system is geared towards a certain demographic aspect (race, economic tier, or culture), the output could be biased.

Given the huge diversity represented across our global society, it is hard to imagine how educational systems can tailor the learning process for everyone.

Many students already juggling myriad economic, political, environmental, and technological pressures, arguably would be happy with simply having enough books, supplies, and teachers to go around. This is what makes the use of AI in education so tantalizing. If applied correctly, it would allow teachers to deliver a personalized learning experience in the classroom and at home, and help more students understand the content, get promoted, and ultimately graduate. It will also make education systems more efficient and cost effective—which is critical at a time when several systems face a severe funding crisis.

AI can improve teachers' performance by helping them access the best resources and teaching them methods for specific students, thus minimizing the need for other, less-effective (and costly) training activities on the topic.

Research has found that individualized learning interventions (either via tutoring or in the classroom) can boost high-school passing rates by 2.2%, and college level graduation by 13 %. Such interventions can also increase passing rates by up to 7%14 and, over an extended period, by up to 29%.1. Probably this is why CBSE recently took the landmark decision of introducing Artificial Intelligence as a skill subject in its curriculum. This subject of artificial intelligence will be for class 8, 9 and 10, and it will an optional subject.

The results of using AI for education are practical and possible but we need to know how fast we can implement the process.

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About the Author

A highly committed and result-oriented L&D specialist with a passion for leadership building, Smriti has helped transform businesses and people for over 17 years. As a Strategic and Tactical L&D professional and a certified behavioural analyst, she is involved in crafting strategies, vision and action plan to implement dynamic learning systems contributing to the success of an organisation. Her forte' also includes developing infrastructures for all training and development programs. Smriti has successfully spearheaded multiple projects involving but not limited to Leadership Development, Behavioural and Competency Development, Change Management, Talent Development, Internal Capacity Development, and Organisational Development. Her keen interests are in exploring multiple ways to build a flexible and agile learning infrastructure, governed by the use of new age technologies (AR & VR, AI, ML).