

● CHILDREN LEARN DIFFERENTLY

The role of Big Data in transforming education



Zishaan Hayath

IMAGINE A STUDENT and a teacher in a class on history, or even English or any language, mathematics, physics or science. The student is passively absorbing data—information shared by the teacher—and storing it in his mind. While the onus of learning lies on both, the interaction is primarily one-way. While the teacher's quality and ability makes a big difference, the student's ability to learn often goes unharnessed.

Children learn differently. No two students are the same. They may like different subjects, be good and bad at different topics, and have varying motivation levels while possessing differing grasping powers and attention spans. In the traditional setting, one teacher alone cannot tend to every student. Therefore, most students never learn optimally. That's where the technological side of data comes in.

Enter Big Data. It stands for extremely

large sets of data and information that are analysed to study behaviour patterns, trends and associations. In an educational context, Big Data doesn't deal with information given to students. Rather, it focuses on information about students. This includes their academic strengths, weaknesses, learning speeds, memory, assimilation skills, and retention and recalling abilities.

Digital players are utilising Big Data to analyse students' inputs on learning platforms and create behaviour models. They then plug Big Data with artificial intelligence and machine learning algorithms to predict user responses, based on their analyses. All of this comes together to create an adaptive approach that understands the unique learning ability and pace of individual students, and personalises vast amounts of quality educational content to their needs.

Now imagine a setting where a student is learning mathematics. The student's dislike for rote-learning and memorisation makes him adept at problem-solving, but slower at learning complex equations without understanding them. Without the right motivation, he would lose interest. Now, though, he no longer needs to follow a steady but common classroom pace which is more conducive to other students.

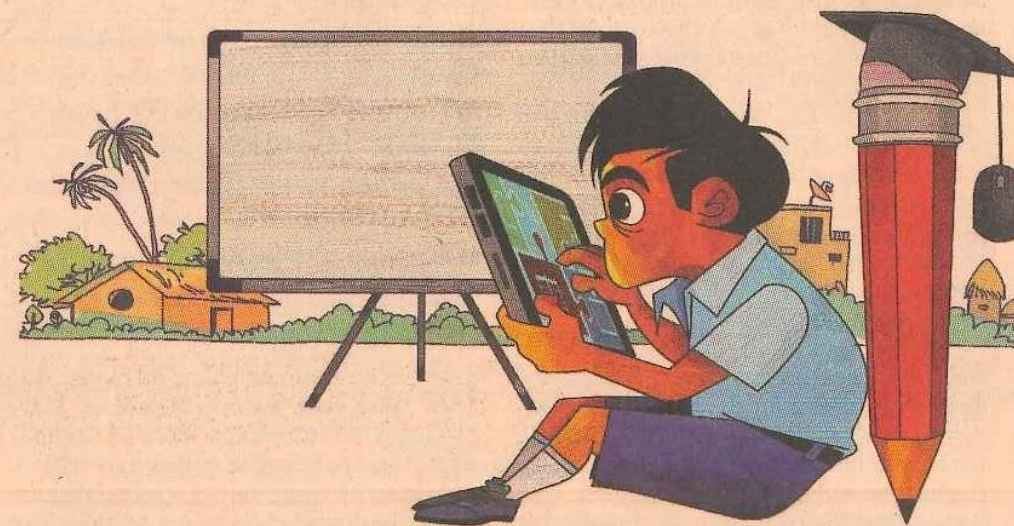


ILLUSTRATION: SHYAM

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He can, instead, spend more time understanding the equation by regularly practising questions around it—understanding complex nuances by breaking them down first. As he gets better with time, his problem-solving pace increases to a point that he's now better than some of his peers. All he needed was more time, at the right time, which he was unlikely to get in a typical

learning setting. Big Data understood his need and tailored his learning to maximise his productivity.

Now apply this scenario to millions of students across the country. Many of them cannot even afford basic education, let alone coaching classes like others from more privileged social backgrounds.

These students are often hindered by challenges like socio-cultural biases, inadequate infrastructure and resources, insufficient availability of quality teachers and sheer financial constraints.

With the use of technology, digital players are taking quality educational content, without the exorbitant costs, to these students. But technology alone isn't enough. The bigger a student's gap in knowledge, the more personalised his or her learning needs to be. Ultimately, that's the gap Big Data is solving, by harnessing their learning abilities to eliminate these gaps.

Thanks to it, students are now able to harness their inner potential and bring it out to the maximum—in order to learn better and move towards a brighter future.

The author is CEO & co-founder, Toppr.com, which provides learning apps for students of classes 5th to 12th