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Big Data, Artificial Intelligence and related technologies with relevance to current education trends



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As has been the case with every industry that the magic hand of IT has touched, education too, is undergoing a tumultuous revolution. It is one of the fastest growing industries in recent times thanks to IT. The first and foremost aspect of this revolution is the 'access'. The Internet has made so much information available at the simple click of a button. The old brick and mortar situation where at any given point of time the 'guru' knows more than the 'sishya' is a thing of the past. One can learn how to make a simple porridge or build a rocket by perusing the appropriate content available on the web. The second commendable aspect of IT enabling education is '**independence**'. What this means is that you are no longer dependent on one teacher or one school or confined to a geographic vicinity to learn. The third advantage is that there is '**flexibility**'. There are no boundaries when it comes to learning and you may learn whatever **you** want, whenever **you** want to and in whatever way **you** want. This is not to say that IT has only affected the learning population. It is also making huge changes in the way that the administrators and teachers are thinking about education. We are therefore at the brink of witnessing an era of 'illumination' (pun intended). Over the last decade, the focus has been on data mining, Analytics, Big Data, AI, bots etc. Big Data simply refers to large volumes of structured or unstructured data. We are all well aware of the wealth of information that schools and colleges collect about every student. Algorithmic analysis of this data can help administrators monitor and adjust their admissions activity, scale-up and bolster their program offerings, manage staffing requirements efficiently, tweak their career services program to get spot-on results. Teachers are able to effectively assess performance, potential and progress of students, evaluate teaching tools and methodologies that make the most impact, identify core-competencies and natural aptitudes of their wards, assist with those having learning difficulties and disabilities etc. The focus therefore shifts from the school to the student.

Where AI and Machine Learning enter this mix of analysis and

prediction is when IT is able to do the job of predicting the next move autonomously i.e. independent of human intervention. From the point of view of the Institution that is sitting on large amounts of legacy data gleaned over many decades of its operation, mining this data will allow the school to formulate the right approaches to realizing the goals and vision. However, for this exercise to be truly effective, there has to be a large enough quantity of data and the right questions need to be asked. Else, we may be blind-sided by inaccurate results from datasets that are created in response to flawed questions.

AI and analytics have directed uses in the education system especially now, with the advent of MOOC. More and more reputed educational institutions of higher learning coming forward to share subject expertise, free of cost reaching out to large populations through blended and online program offerings. Companies like Coursera are bridging the gap between the creators (teachers) and consumers (students) by operating vast clouds of educational material that can be accessed from anywhere in the world by anybody.

It follows therefore that learning never truly ceases. Education garnered from a traditional brick and mortar Institute is finite, whereas through these alternatives, one never has to stop learning or limit oneself to the traditional confines of learning through Institute-offered alternatives. It also brings in a high degree of flexibility in an otherwise rigid system of rote and examination. In a VUCA world governed by disruptive innovation, the only truly sustainable skill is learning. It is only by constantly upskilling and updating oneself with the latest trends and next best practices that one can hope to stay relevant and ahead of the competition. There is of course a lot of grey area in the governance and state policy aspects and given that this area is nascent, these can be expected to evolve given time.

It is my considered opinion that these new technologies are the harbinger of an era in education where borders and disparities are shed and in the end, all that will remain is a path to enlightenment.