

Artificial Intelligence -- Education

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Background

- AI has become a reality
 - Big data
 - Machine learning
 - Computing power
- AI can be equal or even superior to human intelligence
- AI for All

Context of Indian education

- Indian education system is the largest in the world – more data.
- Public education system is weak and ill resourced.
- Pedagogical challenges -
 - low learning levels in Indian schools
 - large class size and inadequate number of teachers

AI in education

- Big data – static and dynamic
- Develop algorithms that can support -
 - Self-learning through adaptive practice.
 - Teaching through personalized education.
 - Macro diagnostics and predictive models, across groups of learners.
- Capturing large volumes of curricular resources, with metadata
- Capture actual use of these resources in different learning situations
- Analyzing if the learner has ‘learnt’ / understood the concept.
- Suggesting the appropriate content/pedagogy for any learning requirement.

AI in education in India

- Data collection is still in its nascent stages.
- Private companies collect data for AI – Ex. ‘Mindspark’ collect millions of records for lakhs of students.
- NROER (National Repository of Open Educational Resources) repository has listed a set of 31 metadata elements.
- UDISE (Universal District Information for School Education) – microlevel data collected by Govt of India.
 - Collected only once a year and is static.
 - Could be analyzed to derive directions for provision of school infra, teachers, etc.,.

AI in education challenges

- Algorithms constituting the AI are not ‘neutral’ or ‘objective’
- Biases of the programmers get into the code and get amplified in the machine generated code.
- Indian education scenario
 - ‘folk-pedagogies’
 - bias of the syllabi developers
 - rigid and feudal society – ‘intelligence’ of caste system

Mitigation of challenges

- To save us from a Kafkaesque future, we must democratize AI.
- Data collected for AI should be regulated with frameworks of data protection.
- Frameworks to ensure
 - Data collected in ethical manner
 - Stipulate data ownership to lie with the school
 - Not allow for monopoly control of data by the company providing services to the school

Conclusions

- Promote the idea of learning as ‘learner-centred’.
- AI could help in suggesting diverse content and pedagogy possibilities to teachers be regulated with frameworks of data protection.
- AI shouldn’t become another force dis-empowering the teacher and forcing her to blindly accept content and pedagogy choices in the teaching-learning processes.
- Any change in education has huge impact - affects future generation and society and hence the use of AI in education should be done only with adequate attention to the issues raised.

Thank you!!

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