

Higher education in India and the grand Indian challenge

Archaic pedagogical models & Unmet industry needs

critical thinking is largely absent
less than 1 in 5 demonstrates application skills
underdeveloped communication skills

Employability, not employment is the concern.

Gap in quality education

< 100 premier institutes
> 35,000 colleges
Production and distribution of quality content is limited both in reach and resources
54% of faculty positions are vacant

Size and scale

1.5 million seats in engineering across 5672 colleges
700,000 graduate every year
less than 4% of them are employable in product companies
1/2 billion Indians need employment in next two decades

Diverse demographic and socioeconomic indicators affect learning outcomes

Do MOOCs offer a solution?

Traditional training models don't scale

MOOCs transformed technology enabled education at scale. But

average drop-out rate is 7.8%
very little or no individual attention
if individual attention is given, economic model becomes unviable
faculty are not available most of the time
course creation is highly specialized and often is more resource intensive than traditional classroom course
assessment models are still experimental
learning requires individual attention, group play and collaboration and MOOCs don't fully support them
they are a just a collection of courses

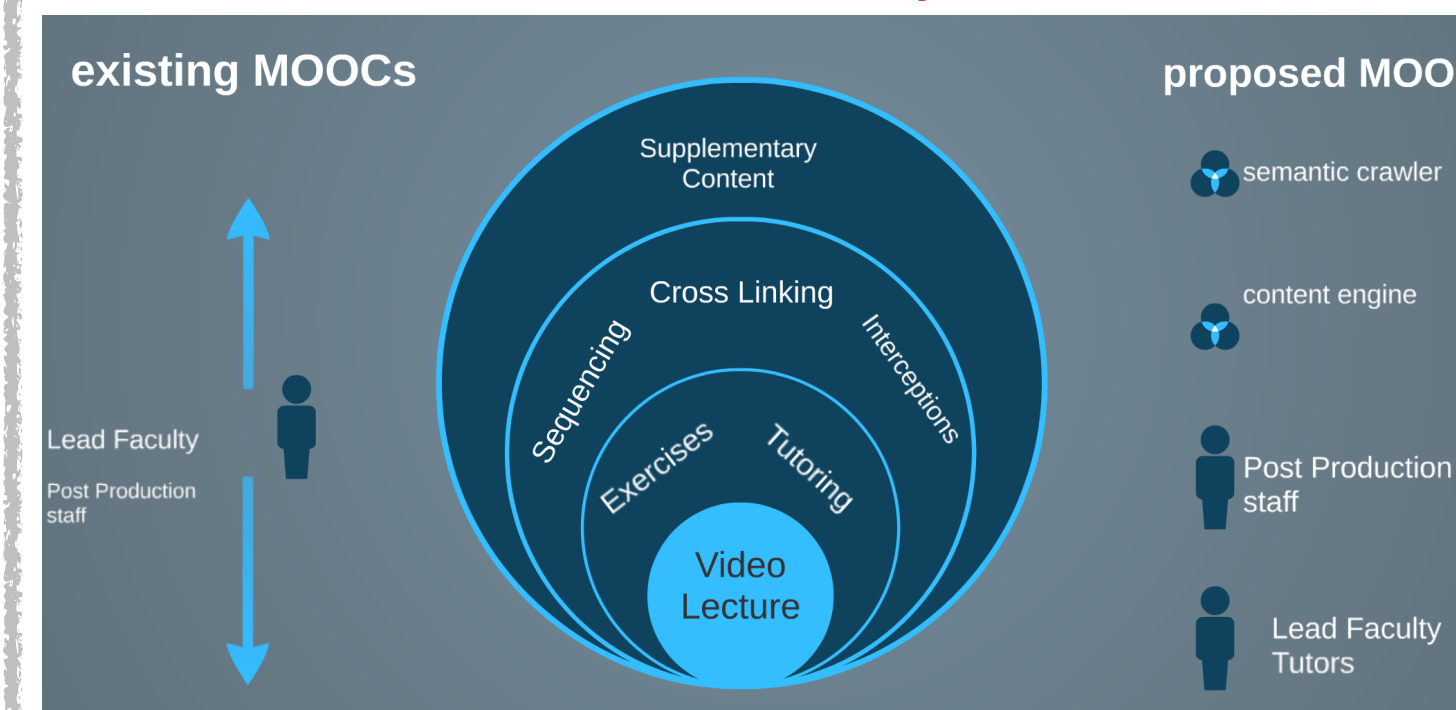
A technology is needed that

decouples content creation from course assembly
facilitates intervention at the right time to those who need it
delivers personalized learning paths to each learner
measures proficiency across courses and topics
enables teaching instrument evaluation
creates focused communities
ensures that everyone succeeds

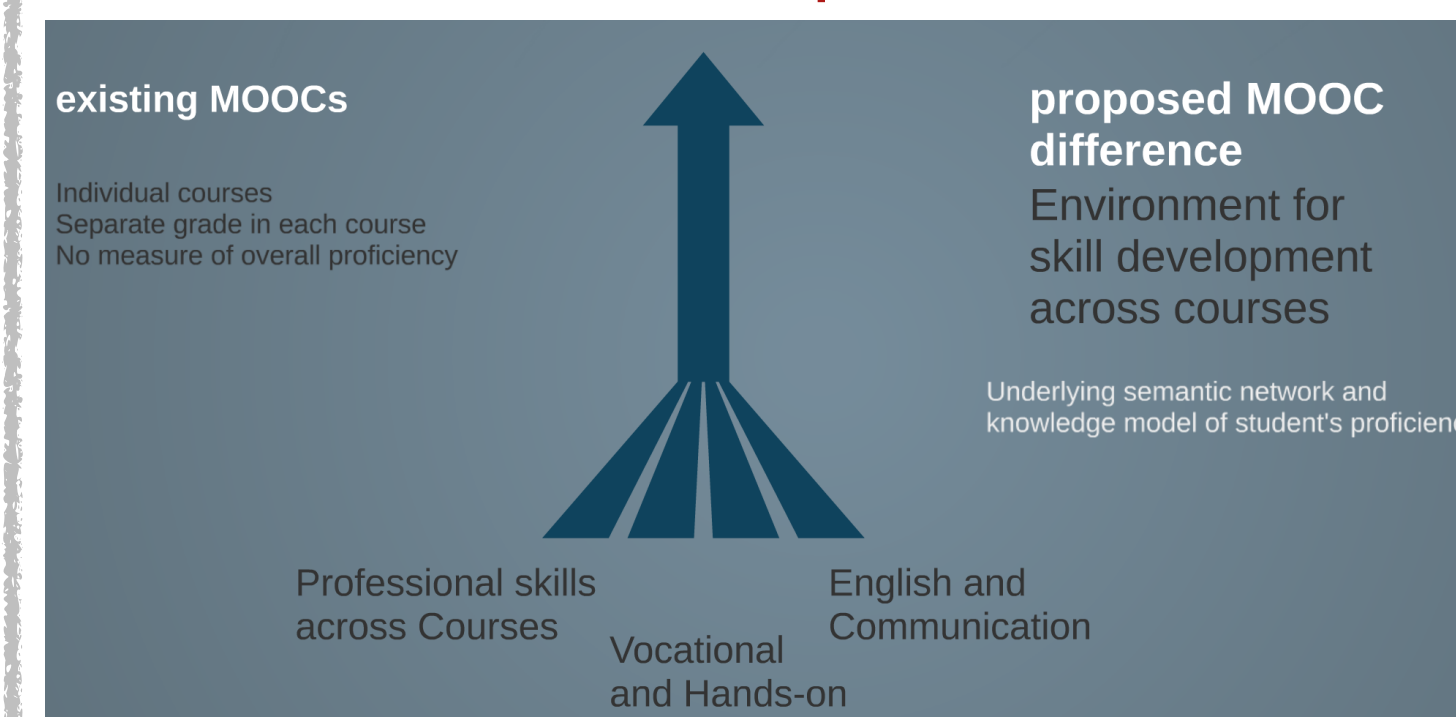
MOOC 2.0



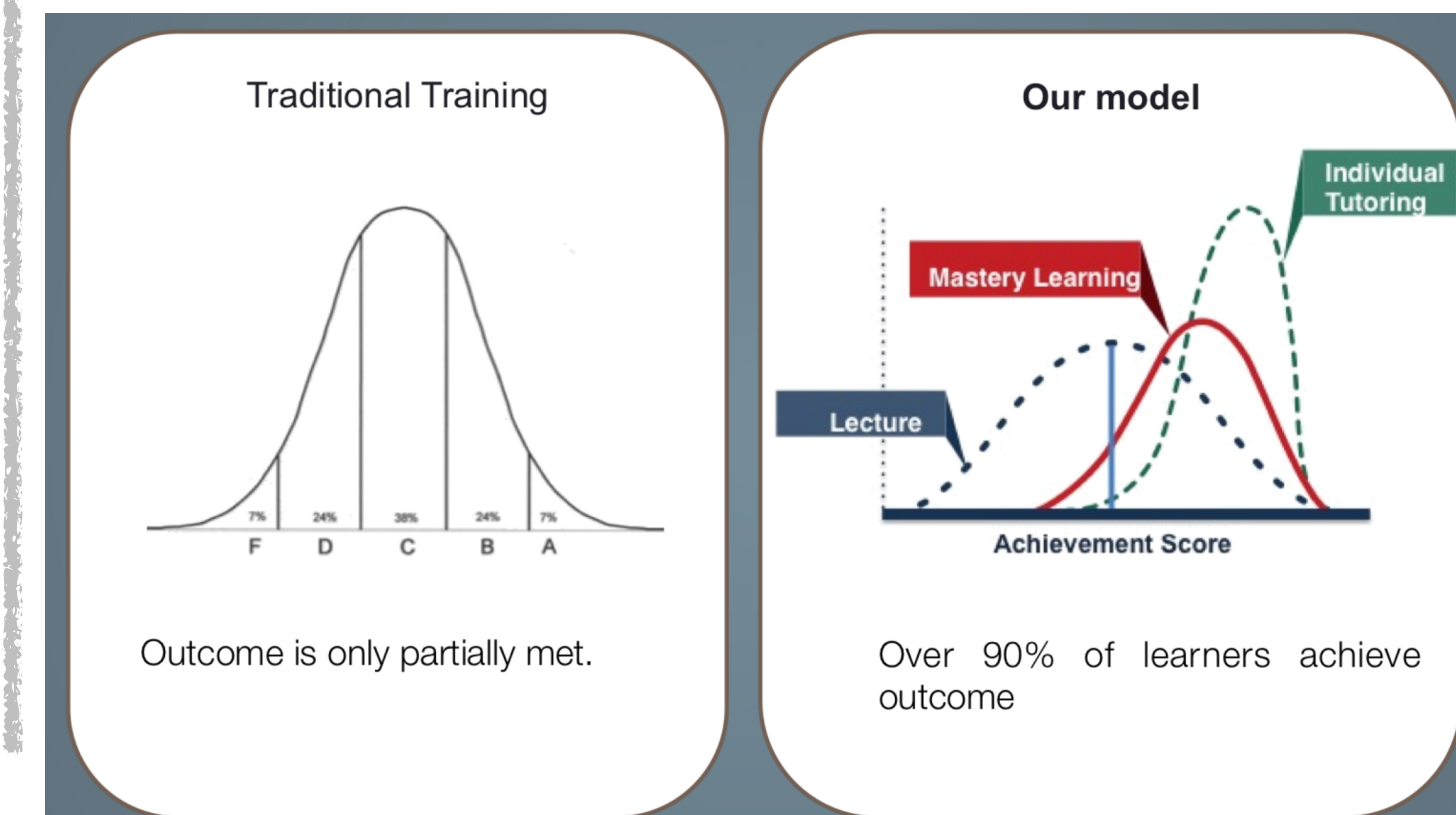
content creation, assembly and distribution



holistic skill development & assessment

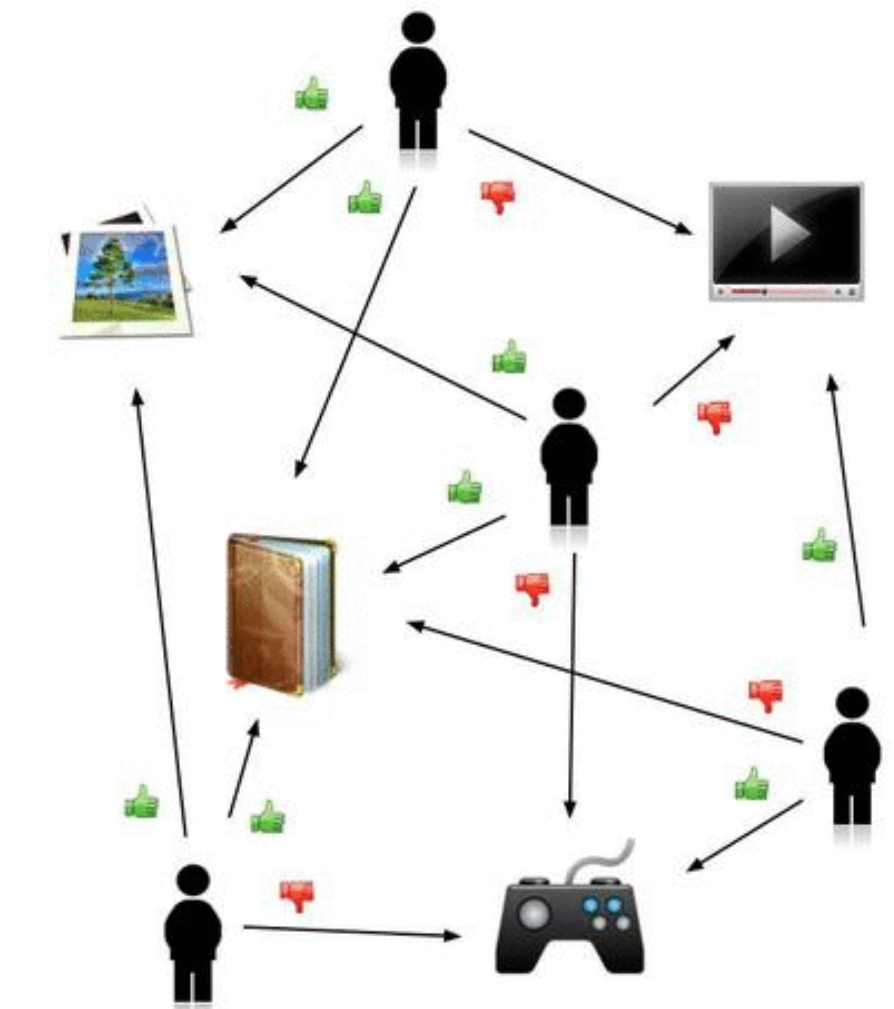


personalized selective intervention



KDD problems in MOOCs

Course recommendation engines based on user interactions



Peer assessment models and value-added models at scale
Teaching instrument efficacy studies
Community detection
Role play identification
Measure seemingly intangible skills
Variable & response selection for tracking learning activity
Visual analytics for providing feedback
Mining and integrating public data
MOOC data mining for social policy making

References

1. "Creating India's largest distance education infrastructure - a concept note," Nagaraju P., Canopus Consulting, 2006
2. "Agropedia: Humanization of Agricultural knowledge," Nagaraju P., Sarkar, R., and Prabhakar, T. V., IEEE Internet Computing, 2010.
3. "A supportability framework", Nagaraju P., Satish S., Feroz S., IEEE/IFIP workshop on Software Architecture, 2011.
4. "The past, present and future of MOOCs and their relevance in software engineering," Balakrishnan D et al, FOSE, 2014.
5. "Implications of skill incongruity on leveraging India's demographic dividend," Subhendu K R and Bhagavan D, International Journal of Humanities and Social Science Invention, 2014.
6. "India skill report," Confederation of the Indian Industries, 2014.

