

Paper title: Inclusive education and Artificial Intelligence: A theoretical framework

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Abstract:

In the era of Artificial Intelligence (AI), Universities may not be confined to their physical boundaries. Quality education can reach to masses with the help of technology where Universities can develop AI enabled educational tools to impart relevant education to masses. This will make education more inclusive and less expensive. AI can simulate university like atmosphere virtually where students can synchronously attend classes, interact with professors and discuss with other students in real time.

AI based platforms can be exploited to connect educators/universities, Students and employers to make education more relevant. Skill based education can also be imparted through simulations. Assessment of students and personalized coaching can be imparted with the help of machine learning algorithms.

AI will help good universities to reach masses beyond the constraints of their physical classrooms, eliminating the ever pervasive substandard education by multiple local educational institutes. This will make education more affordable, relevant and inclusive geographically and economically.

The paper describes current issues in higher education because of the limited reach of the good quality Universities and proposes AI based Models for adoption by quality Universities/Educational Institutes. This paper deals with the theoretical frameworks of credible education and narrates the role of AI in scaling up and making education more inclusive.

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Introduction:

Education across the globe has been a matter of discussion in last few years. The evolution on technology enabled education has started to change the perception of delivery of higher education. Higher education refers to colleges and universities which provide degrees at post graduate level, professional degrees and the equivalent qualifications (Clark, 1986). Higher education is going through a sea change in present times and with increased aspiration for students worldwide for enhancement of knowledge and skill levels. With prosperity and economic growth, nations are also witnessing positive growth of the higher education Industry and hence there is a growing appreciation of the value of quality in higher education (Elassy, 2015).

Even today most Universities globally follow a traditional brick and mortar format of imparting education. Universities spend a lot of their investment in building physical infrastructure in classrooms, libraries, hostels and other facilities. However, the conventional style of imparting knowledge is limited in its scope to enroll students. Good universities also need to invest huge amount of money on attracting the right manpower (faculty). The total intake of students is getting limited to the available physical infrastructure and number of faculty in a particular discipline. This leads to a high demand and supply gap which tends to be filled by substandard local education institutions. These institutions mostly focus on the building the physical infrastructure, though lack in quality faculty and industry connect. Growth of private sector in recent years has increased the number of people that can be employed in industry, services and other forms of employment. Private sector needs huge number of quality trained man power. This entices many job seekers to enroll them in substandard local B Schools to update their skills and gain knowledge. This situation has given rise to the other format of learning through distance learning. Advancement of technology and penetration of internet has changed the format of distance learning. Kerka (1996). Internet has provided the flexibility and availability of the course anywhere in the world and this has also increased the quality of the learning experience of the students (Garrison 2001; Alexander 2001).

Disruption in Education: role of Technology

Massive Online Open Courses (MOOCs) started to create their impact from 2008. The popularity of MOOCs has led to formation of various platforms worldwide through which these courses are delivered. Some of the more popular MOOCs platform are Coursera, Edx, Udacity etc. Students started participating in such platforms that could provide an alternative to contact sessions

(Pappano 2012). Such programs on MOOCs helped in facilitating students in receiving the latest business expertise and in preparing for future corporate roles (Chau et.al 2015).

The regulated education sector in India didn't witness much private sector participation in online education. However, in 2016, Ministry of Human Resource Development (MHRD) started an initiative to bring quality education on a technological platform-SWAYAM (www.swayam.gov.in). Despite, such sporadic initiatives, higher education in India is still mostly driven by classroom sessions. But the existing classroom education infrastructure is grossly inadequate to create the desired pool of skilled professions. Technology opens up new avenues to create bigger scale impact on inclusive education by providing the opportunity to create virtual education models. These can integrate quality professors, universities, employers and aspirants irrespective of their geographical presence. This can also make education more inclusive.

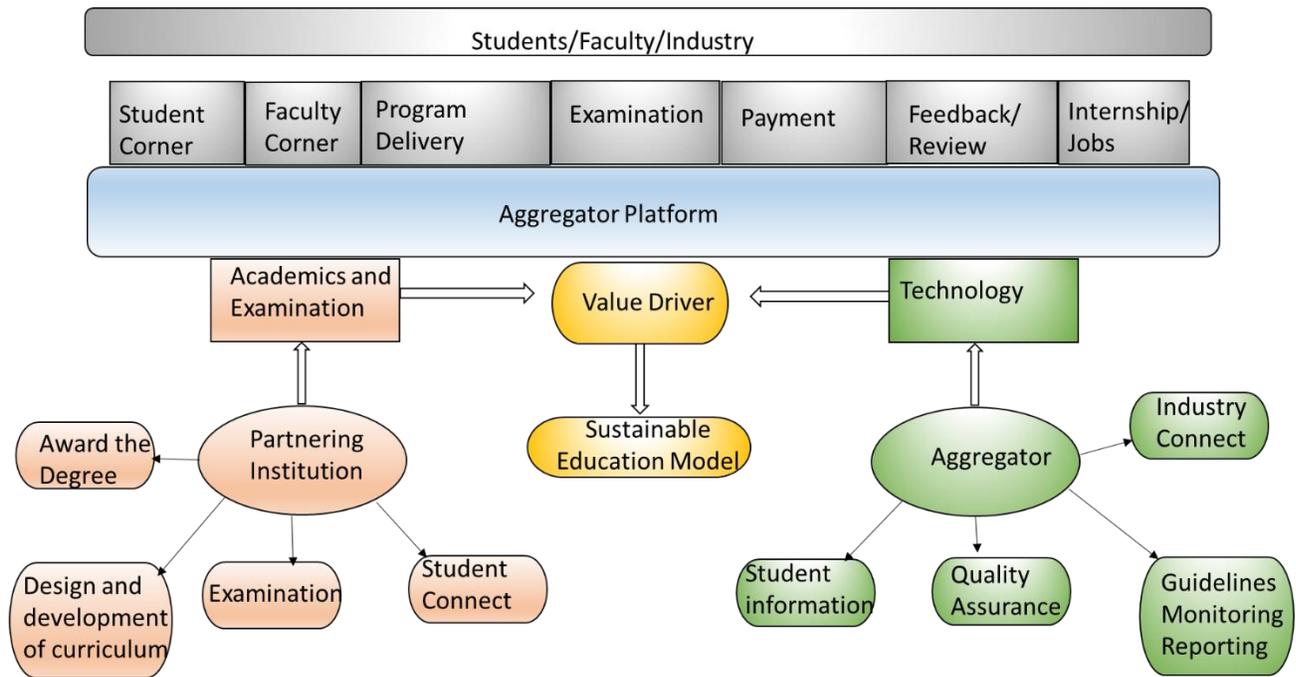
Virtual Education Models:

There are more than 3500 colleges/institutes offering a Post Graduate Degree in Business Administration in India. These are either standalone Institutes or constituents and affiliates of various universities. Baring few, other institutes offer low quality education. They charge lower tuition fee and play hardly any role in enhancing the employability or connecting the students to the job market. These institutes may not have good industry connect and hence are not able to provide campus placement facilities to the students. Students in such institutes neither get good education nor get the opportunity to participate in a placement process. Virtual education models that can enable reputed Business Schools to provide the same quality as on campus education at a fraction of the cost. It can also reach out to masses in various geographies making it more inclusive. The virtual platform can also connect with employers to a vast number of job seekers and in various geographies. This can enable aspiring students get quality education at much affordable rates and also get opportunity to work or intern with recruiters. This will not only make education inclusive, but will play a major role in skill development at hinterlands.

The following are two technology enabled virtual models that can shape the future of education industry to make it more inclusive and relevant. Use of analytics and artificial intelligence will enable these models to be more student friendly and enhance the reach.

A. Education Aggregator Model (EAM) : Technology platforms created by investment from Govt. or private sector can bring the various stakeholders together on the platform. The figure below demonstrates the structure of delivery and role of different stakeholders.

Figure1: Education Aggregator Model



Source: Author

The technology platform will work as an aggregator of various courses and programs offered by various partnering institutions/universities (PIs). The PIs will be responsible for designing the course, delivering the course, conducting examination and connecting with the students. The aggregator will be responsible for providing the technology. The peripheral systems like monitoring, reporting, student information management, quality assurance to maintain uniformity and industry connect can be handled by the Aggregator.

The aggregator will reduce the asymmetry of information from various universities by bringing most quality PIs together. This will reduce the burden of creating and managing a portal for each PI. This will also reduce the influence of online education information portals/advertorials. The portal will connect educators, Universities, employers and regulators on the same platform. As the number of PIs increase, the number of students participating on the platform will increase. This will also create an opportunity for the aggregator to connect with the employers for offering

internships and jobs to the aspirants on the portal. The aggregator can manage the traffic of all stake holders and the large scale of operation will minimize its cost. A part of the tuition fee can be shared with aggregator to manage the platform.

Such a model will have positive impact on reduction of the tuition fees, will be more inclusive to reach out to people irrespective of geographies. This will also limit the presence of the substandard B Schools that have proliferated to meet the demand supply gap in recent years.

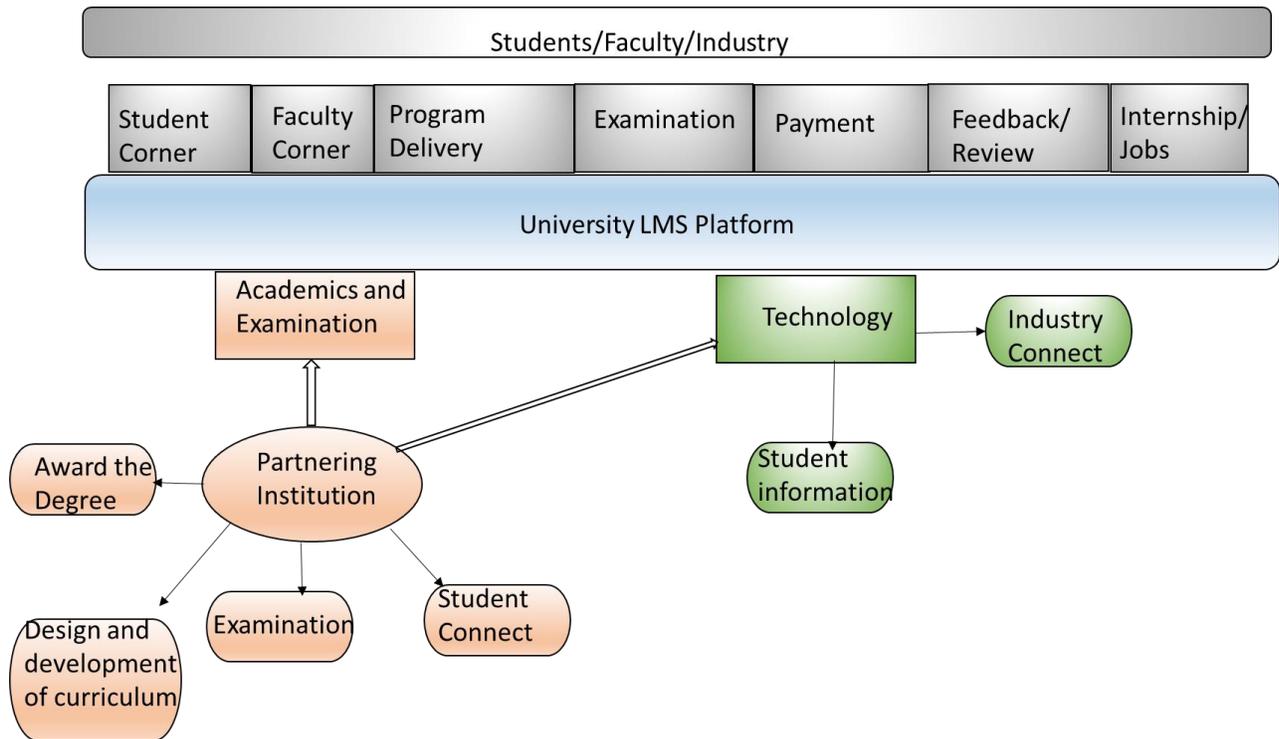
Technology will play a major role in emulating the campus environment with the help of technology. Classroom scenario can be simulated on a virtual platform and students can experience the presence of the faculty and classmates in the virtual classroom.

AI and Analytics can be leveraged in evaluating of the students, psychometric analysis of students, mentoring students and identifying the strengths and weakness, proposing the courses to the students based on psychometric profiling, helping the students in identifying the right subjects/courses etc. It will also create limitless options for students in studying the desired courses from various PIs. This will help redefine the programs like MBA, MS (Finance) and will enhance the scope of liberal arts. This will also enable the choice based credit system in its true spirit. Geographical boundaries will die, migrating from one university to other based on credit transfers will become automatic and smooth. Over the years the data gathered on the platform can be used to prescribe courses and support students in their career decisions.

The front end of the platform will have the user interface targeting various users like students, faculty, industry etc. The PIs will focus on course development, while the aggregator, will support with the technology. This will lead to a sustainable education model.

B. Alternate Model: Institution /University Online Model(UOM): In this case, the University/Institution will also do the role of the aggregator in investing in technology. The various courses will be hosted on a learning management system(LMS) and students can access the courses and accumulate credits. Students can earn a degree or a diploma based on the credits accumulated and the policy of the institute. This UOM model is possible for bigger institutions and universities that can accommodate multiple course and attract students. However, the EAM model will be more economical and provide more options to students.

Figure 2 : Institution /University Online Model(UOM)



Source: Author

Conclusion: In today's technology-driven world, Universities may not confine their offerings to their physical boundaries. Quality education can reach to masses with the help of technology where Universities can develop AI-enabled educational tools to impart relevant education to masses. This will make education more inclusive and less expensive. AI can simulate university-like atmosphere virtually where students can synchronously attend classes, interact with professors and discuss with other students in real time.

Technology-enabled AI-based platforms can be created either by an aggregator or by a University to connect educators/universities, Students and employers to make education more relevant. AI will enable assessment of students and personalized coaching with the help of machine learning algorithms and the CBCS can be implemented in its true spirit.

Quality education will reach masses beyond the constraints of their physical classrooms, eliminating the substandard education by multiple local educational institutes. This will make education more affordable, relevant and inclusive geographically and economically.

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