

Economic Realities of Virtual Higher Education in a post-pandemic India*

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Abstract

The acceleration of the implementation of 'online' education in the aftermath of the Covid-19 pandemic has now normalized the idea of online schools and universities. This new mode of interaction between teachers and students has wider implications in terms of delivery of services (education); quality of courses, certification, and skills. The market for education can be understood as a monopolistic competition wherein each supplier (school or university) presents their service (education) differently to others. These differences might stem from curriculum, quality of teachers, pedagogy, and mode of certification. With the adoption of online classes, the existing differences have gained new variants in terms of product (service) differentiation according to delivery, pedagogy, curriculum learning outcomes, and certification. These layers of product differentiation go beyond the differentiations of correspondence education, brought about in the late 19th century. While 'online' education started in 1989 with the University of Phoenix establishing a fully online collegiate institution providing undergraduate and postgraduate degrees, the 'online' mode remained supplementary to the regular mode of service delivery. Meanwhile, Massive Open Online Courses (MOOCs) began to appear in 2008, followed by skill enhancement courses of various kinds. These developments have led the already

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hierarchical and differentiated market for higher education towards new milestones in terms of quality and pricing. The availability of courses and diplomas, offered by various platforms and managed by private players in partnership with foreign universities, has added to the existing competition between the classroom-based model and the online model, with the latter gaining popularity.

The traditional classroom-based higher education system has been characterized by 'cost disease' and it is argued that the online avatar will make higher education more affordable in terms of cost of access and supply. Based on a critical review of literature and drawing from a theoretical understanding of higher education as a service and associated peculiarities, this paper seeks to counter the cost-effectiveness claim of online higher education and seeks to establish the 'cost disease' phenomenon with plausible explanations. The paper draws parallels from case studies carried out in the U.S. and presents theoretical underpinnings for understanding the economics of online higher education.

Keywords: cost, pricing, quality, online, differentiation, lag

Introduction

In the backdrop of the information age, we live with a multifaceted existence as our realities keep moving across physical, virtual, and augmented forms. The latest addition to these forms, Metaverse, presents a unified and immersive virtual world, which has been attracting various industries as well as academia. There are reports indicating that universities in the West have started utilizing Metaverse as a platform to enhance the learning experiences of students. Amid such global trends, digital universities and virtual laboratories are being encouraged in the Indian higher education system to promote digital education as envisaged by the National Education Policy (2020). The push towards digital education exemplifies the advantages over space and time as phrases with suffixes 'e', 'online', 'smart', 'digital', and 'virtual' are believed to be the panacea. With the Covid-19 pandemic accelerating the implementation of online education across all stages; debates over the suitability, accessibility, and feasibility of online education garnered the attention of people in general and academia in particular. While the acceleration of online education provides impetus to the growth of EdTech companies, the online mode itself seems to change from being a substitute for the regular or traditional system to a competitor. While a major portion (41%) of growth in the EdTech market lies in the K-12 (school) segment, higher education that's characterized by a wide variety of choices in terms of disciplines, courses, and possibilities viz-a-viz skill enhancement, provides EdTech companies with a wide range to offer their services. As school education and higher education differ significantly in their ways of service delivery, the provision for online services should also be looked into separately. While there exists considerable literature on the economics of online higher education in the context of the U.S., where it emerged and has reached the Metaverse, similar studies for other countries remain scarce. As the area has become more complex and revealing for deeper investigations, an economic approach to present the

developments appears necessary to demystify the claims of advantages of online higher education. This paper seeks to serve this purpose by presenting economic perspectives in three sections – product, cost, and competition. The paper draws arguments from available literature on the economics of online higher education and tries to bring forth economic realities to understand the virtual world of higher education.

Product

The online mode of interaction between teachers and students has immense implications for pedagogy, as well as for the nature and characteristics of the product (education). The market for higher education has always been hierarchical and characterized by product differentiation (a phenomenon in the imperfect market where competing products can be shown to be different from each other with the help of packaging). With the online mode as a new method of delivery of services (education) in place; variants such as course quality, certification, and skill have increased to provide greater product differentiation, as online education has become more segregated and discriminated not only in terms of price but also in quality. Though product differentiation through mode of delivery of education dates back to the late 19th century when correspondence education emerged with the aid of postal services; present differentiations riding on the growth of information and communication technologies (ICT) seem to be competing with the mainstream classroom-based traditional model.¹ While ‘online’ education started in 1989 with the University of Phoenix launching a fully online collegiate institution providing undergraduate and postgraduate degrees, the ‘online’ mode remained supplementary to the regular mode of service delivery. Meanwhile, Massive Open Online Courses (MOOCs) began to appear in 2008, followed by skill enhancement courses of various kinds.² Like the fate of association between correspondence education and the traditional mode, the possibilities of substitutability or supplementary association between the online mode and the traditional one would depend on regulatory provisions, recognition, and acceptability by the society.

Worldwide, higher education institutions (HEIs) appeared to be struggling with the spread of the pandemic. Ewing (2021) traces the challenges HEIs in India, Australia, Thailand, Sri Lanka, Singapore, Bangladesh, New Zealand and Macau are facing, based on interviews with academic leadership from these countries.³ Along with academicians, international agencies such as the OECD, the UNESCO, and the International Association of Universities have also engaged themselves with developments in different countries in the aftermath of Covid-19 and are looking at how universities are responding to the challenges posed

1 The History of Online Schooling: <https://www.onlineschools.org/visual-academy/the-history-of-online-schooling/>

2 A Brief History of MOOCs | MAUT - McGill University: <https://www.mcgill.ca/maut/news-current-affairs/moocs/history>

3 Rethinking Higher Education Post COVID-19: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7869944/>

by the pandemic and ensuing online pedagogy.⁴ The struggle of HEIs depending on fees paid by students for revenue has also increased. These have resulted in retrenchment of teaching staff and voluntary retirement schemes (Australia). While excellence still remains on the top of agenda, at least for above-average HEIs; the struggle for survival amid a global economic downturn is evident. In these circumstances, proliferation of online education adds to the challenges. Even some of the top universities are offering online courses through various platforms. Such ventures might add to the existing popularity of their courses through traditional mode and also allow them to reap the benefits of the online mode. Such a blended mode can again be traced back to the blending of correspondence education with formal classroom education by many universities in India and abroad. The Metaverse is expected to add to these forms of blending with the use of unified and immersive technologies. The idea of substitutability or emerging competition between the traditional classroom-based model and online mode of higher education revolves around affordability in terms of price, space, and time.

Cost And Pricing

The higher education sector in India is characterized by a rising fee-structure that's influenced by a decline in public expenditure on higher education and emergence of private providers. Public HEIs might need to cross-subsidize courses which are lesser in demand from revenues earned (through charging higher fees) from courses which are high in demand. Private HEIs might resort to profiteering through charging higher fees and incurring lesser cost on providing courses. Thus, the efforts of HEIs to cross-subsidize (public) or to profiteer (private), correspond to the cost of production (providing courses or degrees or delivery of higher education) and pricing (fee-structure) of such provisions.⁵ While the cost of production and pricing play an important role for any commodity, higher education as a good has been found to be different from other commodities in terms of production and utility. These peculiarities, discussed in the literature on economics of education, are crucial as they restrict the application of general productivity enhancing principles (as applicable in the manufacturing industry) in the higher education sector. As for illustration, increasing the burden of classes on a teacher or to increase the class size may seem as enhancing productivity but considering the peculiarities of the higher education sector, these can lead to compromise with research outputs of the faculty or deterioration in quality of education for all students. Chattopadhyay (2012) presents a detailed discussion on the nature of higher education as a commodity and the peculiarities of the same market.

4 COVID-19: Higher Education challenges and responses - IAU: <https://www.iau-aiu.net/Covid-19-Higher-Education-challenges-and-responses>

5 Here, the HEIs are presented as firms or producers for the sake of economic understanding of the process. The HEIs as producers produce services that are reflected in terms of courses offered by them. Alternatively, they might also be gauged from degrees earned by students.

Hierarchies exist in higher education as they are demanded for by society. For instance, HEIs at the top maintain supply below the existing demand to keep their prestige intact (Winston, 1999). So, the unmet demand in the higher education sector might not arise only due to lack of supply in structural terms, rather this might be the result of the hierarchy-producing strategy of the sector. Alternate avenues such as distance and open education have existed for many centuries, but these avenues have not replaced the traditional classroom model. The distance and open education systems have adopted technologies as they evolved, such as postal services, television, and internet. But these evolutions along with the adoption of mixed strategies (blended mode of classroom and online learning) by the existing HEIs have not replaced the traditional classroom model. The reason behind this status of the traditional classroom model is the prestige earned by the HEIs and the sense of quality perceived by the students and in the job market. While the cost-advantages of online higher education in the given conditions (as discussed above) might help the sector to remain viable in certain courses, the traditional classroom model illustrated by the range of its product differentiation will stay as long as the quality differential remains significant.

Higher education is a labor-intensive service and the requirement of a high-skilled labor force is one of the prominent reasons for the rise in the cost of higher education (Baumol, 1965; Bowen, 1966). This feature is analogous to the music and performing arts sectors which experience rise in unit labor costs more often than the overall economy. This phenomenon arising out of 'productivity lag' of one factor (labor) with respect to other (capital) is known as 'cost disease'. While Cowen (1996) expresses doubts over this phenomenon citing that innovation in services delivery can reduce cost; Archibald and Feldman (2006) have found conforming results for this phenomenon from their studies on the rising cost of higher education. Similar results were obtained from an economy-wide study by Li (2013) explaining the inability of supply to match the rising demand for higher education due to the existence of the 'cost disease'.⁶ Here, it is to be noted that the increasing cost is not only due to the productivity lag (higher marginal cost) but also due to the bulky nature of capital, leading to a higher average cost for expansion. The two taken together cause a 'supply-lag' with respect to increasing demand for higher education.

As online higher education picked up after 2006 in the U.S. due to ease of regulations, the period also coincides with increased access to internet services and enhancement of internet speed. Marginson (2004) presents the developments in the sector since the 90s and the possibilities for the emerging tech giants of the Asia-pacific. He mentions the booming expectations for online higher education in the 90s and the predictions of the death of brick-and-mortar universities. Most of the discussion on online higher education revolves around the cost-advantage of the model over the traditional one. Even the scholar credited with popularizing the idea of the 'cost-disease' accepted the cost-advantage of online higher education over the traditional classroom model (Bowen, 2012a).

6 Bela Balassa (1964) and Paul Samuelson (1964) in their parallel studies have come across this phenomenon. The insights can be traced back to the works of David Ricardo in the 19th century.

The cost of online higher education can be understood with the help of two terms: average cost and marginal cost.⁷ As online higher education requires more (or specific) capital assets as compared to the traditional classroom, the start-up (average) cost for the former can be higher due to capital assets being expensive and requiring adaptation with time. The requirement for adaptation arises due to the need of compatibility across networked systems, including those owned by students. Thus, online higher education might reduce the cost of labor, but it adds to capital costs as bulk cost remains a feature of equipment/devices and system upgradation (Bapna et al., 2020). The cost advantage is expected from the labor cost (teaching staff) and the ability of reproduction (recordings). While the traditional classroom-based model suffers from 'cost-disease' mostly due to the labor cost, the online model might not address the problem. While the reproduction (recordings) converts education from a service to a commodity, augmented realities (Metaverse and MOOCs) add to the layers of product differentiation (McCowen, 2016; Chattopadhyay, 2020). Therefore, while the online model changes the characteristics of the market for higher education, it does not necessarily lower the average cost.

Online higher education might reap cost advantage in terms of marginal cost approaching zero which would make the service delivery viable at higher scales only (Marginson, 2004; Saltzman, 2014). Operating at a higher scale would require a large strength of students which can only be achieved after a considerable lead time. This might only be possible for skill enhancement courses and professional courses such as data science and management. Otherwise, the start-up (average) cost might be higher depending upon the nature of the institutions and courses. Thus, the considerations of students and the job market play important roles in viability of online higher education. Demand for a product has always been significant in driving the market for the product. However, huge average cost might act as an entry barrier and almost zero marginal cost may lead to rent-seeking (Pathak, 2022). The situation of rent-seeking should be understood as a situation when an economic agent earns without incurring any cost. In such a situation, the existing HEIs would make it extremely difficult for any potential entrant to operate as the entry-level costs would be higher than the marginal cost incurred by the existing HEIs. These tendencies would enhance the monopoly power of the HEIs already at the top. With increasing monopoly power and decreasing competition, the quality of services (higher education) would be compromised.

Competition

As mentioned above, the market for higher education is hierarchical in nature and HEIs compete for inputs (students and staff) as the production is driven by them. Apart from

7 The average cost can be obtained by dividing the total cost by the number of students. The marginal cost refers to the cost of providing education required for the incremental student if we go by adding students one by one. The total cost includes fixed costs and variable costs.

prestige, rank, or quality; the location of the HEI has been found to be one of the important factors for decision-making by students. Online methods with asynchronous and blended learning facilitate choice over space and time. The HEIs with traditional classroom-based models are restricted by their location in attracting students and have a different dynamic arising out of cultural contexts, regulation, and equivalence of degrees (Marginson, 2006). So, with a proposed central digital university and two existing state digital universities, the competition in the online education sector is not limited to only them. Indian HEIs with different ranges of online services would compete with their foreign counterparts and web-based platforms. Foreign HEIs have advantages in terms of lead time and scale as they have the benefit of an early start. These benefits have been extended to the web-based platforms which operate in partnerships with some of the leading universities.

Regulation of the market is expected to be crucial in such situations. With regard to online higher education, the University Grants Commission on one hand promotes MOOCs and SWAYAM – a public platform for MOOCs, but restrains the HEIs in India from collaborating with foreign web-based platforms in offering courses. Moreover, governments seem to be promoting digital universities but have no policy for regulating quality and competition. The policies regarding the regulation of online education lack clarity and foresight. If Indian HEIs are only allowed in later years, they will lose a significant share of the market which will already be in the hands of the foreign HEIs. Here, the intention of the paper is not to advocate the proliferation of online courses with partnerships of Indian HEIs and foreign web-based platforms, but to raise an important issue related to current policy discourse.

Apart from this, there are issues of privacy and intellectual property rights (IPR) involved in the online business of higher education (Bowen, 2012b). Web-based platforms gather a lot of information related to students and might utilize this information along the lines of social media firms. Content creation for online education platforms involves creative labor to make the course content distinguishable. Not only such platforms, the pandemic witnessed a plethora of online content being uploaded on the websites of colleges and universities in the wake of increasing online classes. The issue of IPR has not been adequately looked into this form of content creation. While availability of digital content appears healthy for learning, it seems to undermine the creativity of teachers who put their efforts and struggle for their existence in the competing sector. The issue deserves adequate deliberations and debates.

Conclusion

The affordability of higher education becomes dependent on the purchasing power capacity under the market regime even if the traditional market models cannot be applied to higher education in general. The present scenario of Indian higher education showcases trends for profiteering through privatization. As a matter of fact, few private parties can be philanthropic in nature, but increasing privatization and the policy push for corporatization confirm the tendency of profiteering. Even public HEIs have showcased tendencies to

increase fees. As the fate of the association between open or distance education and the traditional classroom-based model was shaped, the possibilities of substitutability or supplementary association between the two would depend on regulatory provisions, recognition, and acceptability by society at large. With new product qualities, added hierarchical structures, the higher education sector will become more complicated and hard to understand with the help of traditional economic approaches. With huge average cost and almost zero marginal cost, the online market presents entry barriers and rent-seeking tendencies. These might lead to monopolization of the market by few foreign HEIs and render the low-rank domestic HEIs out of market. Such developments would be detrimental for affordability and access. The Indian higher education system appears unprepared for protecting domestic HEIs from foreign competition and regulating quality ♦

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