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M S, Navaneeth and Siddiqui, Ismail

Indian Institute of Technology Madras

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# How Inclusive Is Online Education in India: Lessons From the Pandemic

Navaneeth M S\*

*Indian Institute of Technology, Madras, India*

Ismail Siddiqui

*Indian Institute of Technology, Madras, India*

## ABSTRACT

*After years of mandatory remote education, there is still a question that remains to be answered: “Is the online medium inclusive enough to be deemed a solution?” As classrooms relocate to online environments and pedagogies rely on technologies, it becomes imperative to ensure that no one is left behind and education remains accessible to every learner. The issue of the universality of access to techno-logical resources in India mingles with various socio-economic disparities that hinder the successful implementation of online education. This chapter attempts to analyze and bring forward the factors that may contribute to the stark contrasts regarding the practicality of the online education scene in India, including accessibility, gender, socio-economic factors, and policy issues. In mitigating the impact of an educational disruption (e.g., global health crisis) as well as the future adoption of online instruction, this chapter summarized the topics that need addressing into themes: content understanding, learning outcomes, technological, pedagogical, and behavioral.*

## INTRODUCTION

The foundational belief in designing modern classrooms is that they are safe spaces that give students equal opportunities with a conducive environment to learn (Lamsal, 2022). A shift towards online learning means both factors are negated, and the learner’s performance is to be directly influenced by a myriad of factors (e.g., domestic circumstances, cultural differences, and material support). In the case of India, the glaring differences and inequality among the masses had amplified the issue in the ongoing pandemic.

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\*Corresponding email: [msnavu@gmail.com](mailto:msnavu@gmail.com)

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Taking literacy rate as a preliminary yardstick, India has performed poorly compared to the other South and East Asian states by ranking 19th in terms of literacy, and more than half of the children under ten years old in India cannot read a basic sentence (Murali & Maiorano, 2021). Progress with regards to female literacy rates has been abysmal as the worst performers – Bangladesh and Nepal – have come on par with India. In the backdrop of these challenges, the COVID-19 pandemic emerged as a severe crisis for education as schools and colleges shifted to the online mode of teaching.

The outbreak of the COVID-19, a novel coronavirus, in December 2019 quickly transformed into a raging pandemic that caused enormous disruption to daily life functioning, especially to the education systems. The disease caused the cancellation of examinations, suspension of in-person classes, closure of schools, and physical distancing that did not allow face-to-face instructions. These challenges and disruptions resulted in the transformation of the education medium: the adoption of the online mode of instruction across the world. Schools and colleges shifted to screens, and instructors and students adapted to this new learning model, with new teaching protocols and the adoption of relevant infrastructure. The sudden transition to online learning was not so easy for the institutions in developing nations due to a lack of resources and limited infrastructure (Garcia & Revano, 2022; Oyedotun, 2020).

## **LITERATURE REVIEW**

### **The Rise of Online Education**

Online learning refers to the education environment that happens through the Internet using computers, mobile phones, and other technological devices for instruction and management of academic programs (Barak & Usher, 2020). Online learning can be synchronous or asynchronous with the former referring to real-time instruction while the latter involves flexible schedules for the students and the instructors (Singh & Thurman, 2019). Studies by Khalil et al. (2020), Varea and González-Calvo (2021), Garcia and Revano (2022), and Donitsa-Schmidt and Ramot (2020) have already put forward the problems posed by the online mode of learning: ranging from socioeconomic factors and policy challenges to the concerns related to pedagogy, logistics, and technology. As the instructors had to face issues due to the unfamiliarity with the online medium and as opposed to the conventional method of teaching, workshops

and peer support systems were launched to smoothen the transition to the online medium. On the other hand, various socio-economic factors increased dropout rates among students, and lack of face-to-face interaction hampered the quality of academic performance (Franchi, 2020).

The online education scene in India was usually self-paced and used for supplementary learning purposes, with an upward-moving trajectory over the last two decades, but coronavirus gave it an un-wanted boost. The sudden shift in paradigms has exposed the fault lines in the accessibility of online learning in India (Goswami et al., 2021; Naik et al., 2021). Lack of stable connectivity and accessibility, the prerequisite of being familiar with technology, regional disparity, and gender differences, coupled with socio-economic factors, inhibits the inclusion of a large part of the population in online learning or significantly hampers the quality of experience enjoyed by their peers. Online medium of education significantly undoes schools' long and difficult attempts as platforms to blur the inequalities among students belonging to different sections of society. It brings the focus back on the available means and background of the students. This chapter is an attempt to look at how the online medium of education in India has affected and exacerbated the existing inequalities in the wake of the COVID-19 pandemic.

## **Remote Learning Experiences**

There is a growing body of literature addressing these issues in the realm of this new normal of online learning (Muthuprasad et al., 2021). There has been a considerable focus on the policies, curriculum management, and the experiences of students adapting to online learning. Singh and Thurman (2019) used the quantitative descriptive approach to analyze the experience of students to find out that while students appreciated the use of technology in online learning, half of them preferred the conventional classrooms over the online medium. Since a quantitative approach restricted the findings of Singh and Thurman (2019), Khalil et al. (2020) made use of a qualitative approach to find deeper interpretations of the students' experiences. They examined the efficacy of synchronized online learning in a medical school in Saudi Arabia. They find out that there is a positive perception of synchronous online learning, but there are challenges mostly in terms of technical difficulties such as poor internet and individuals not being able to keep up with the pace of content delivery. Adarkwah (2021) fleshes out these challenges in the study of the students in Ghana using the approach of narrative inquiry. Lack of social interaction, limited infrastructure, and poor learning outcomes were the issues that the students encountered. Day et al. (2021) report similar issues added to the challenges of poor learning spaces at home, stress among students, and widening of pre-existing inequalities, based on evidence from six institutions across three countries.

Emphasizing the specific student experiences in online learning, Fawaz et al. (2021) studied the pandemic's impact on the mental health of college students and their coping mechanisms. Overwhelming load of learning, lack of social interaction, and concerns about evaluations were the major challenges the students faced. As a coping mechanism, students sought help from instructors, family members, and friends (Garcia & Revano, 2022; Treceñe, 2022). In addition, they engaged in recreational activities that helped them distract themselves from the stress of online learning. (Suryaman et al., 2020), on the other hand, focused on challenges faced in the home learning environment such as lack of technological literacy, and the cost of the internet and devices. Similarly, Kapasia et al. (2020) investigated the impact of lockdowns on learning performance. They find that lockdown caused severe disruptions in learning and virtual classes caused mental health

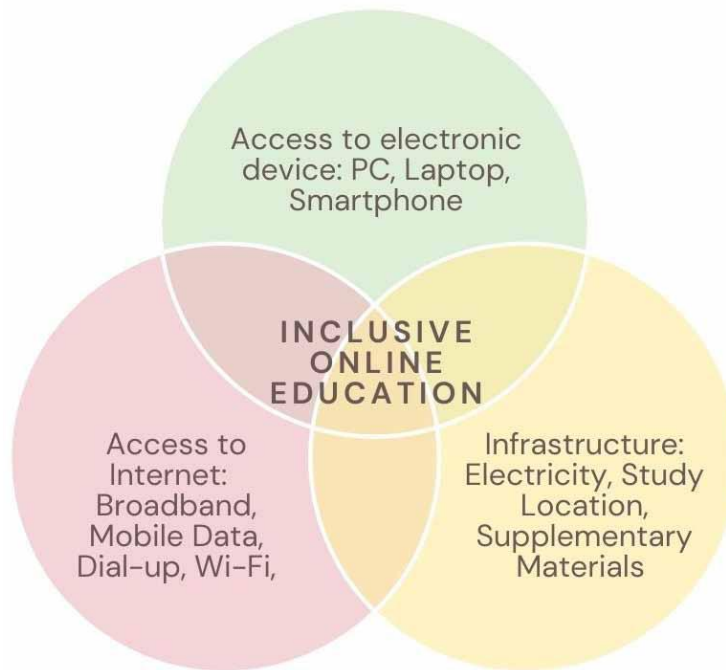
issues, added to the non-conducive environment for attending online classes in the case of students from marginalized sections or remote areas.

## **Theoretical Framework**

Before we embark on a comparative analysis of online education models, it is important to understand the theoretical underpinnings of online education. Any sustainable model of online education rests on the three pillars – access to the internet, availability of infrastructure, and access to compatible devices (See Figure 1). At the confluence of these three factors, one can come across conditions optimal for the growth of an inclusive online educational model.

The typology of challenges examined in this study is largely based on Rasheed et al.'s (2020) systematic review of students' experience in an online learning environment. These difficulties are divided into five categories under self-regulation (SRC), technological literacy and competency (TLCC), student isolation (SIC), technological sufficiency (TSC), and technological complexity (TCC) challenges. SRC is a collection of behaviors that students use to gain control over their emotions, actions, and ideas to attain learning goals. TLCC refers to a group of issues concerning students' capacity to use technology successfully for educational reasons. The emotional distress that kids feel because of being isolated from their classmates is defined as SIC. TSC refers to a series of difficulties that students have when using available online learning technologies. Finally, TCC refers to the problems that students encounter when they are exposed to sophisticated over-sufficient technologies for online learning.

Two further clusters, learning resource difficulties (LRC) and learning environment challenges (LEC), can be added to the above clusters to address other potential issues during online classes. (Buehler, 2004). LRC refers to a series of difficulties that students encounter while using library resources and instructional materials, while LEC represents a set of constraints that students confront because of the condition of their learning environment, which has a direct influence on their learning experiences. The inclusion of LRC and LEC would allow us to capture other important challenges that students faced during the pandemic. This is especially important to students from the developing world because the learning environment at home and learning resources available to students have been shown to have a significant impact on the quality of learning and their achievement of learning outcomes (Drane et al., 2020; Garcia & Revano, 2022; Suryaman et al., 2020). This scenario would provide us with a complete and detailed picture of students' experiences when engaged in online learning due to an emergency. Given the restrictions in mobility at macro and micro levels during the pandemic, it is also expected that such conditions would aggravate these challenges. As a result, the purpose of this chapter is to gain a better understanding of these problems from the perspective of students, as they are the ones who would be most affected when it comes to the learning experience.



*Figure 1. Online education needs to be placed at the confluence of the above factors*  
*Source: Authors*

## **METHODOLOGY**

We have primarily used secondary data from the *National Sample Survey Office* (NSSO, 75th Round), which captured consumption patterns in the education sector. We also employ SWOT analysis as a theoretical and timeframe perspective to qualitatively analyze available research and policy inputs in the field. Further, stakeholder analysis is used to prioritize the role of various institutions and regulatory bodies in the adaptation and future development of online learning platforms.

## **RESULTS AND DISCUSSION**

### **The Myth of Accessibility**

Online platforms are deemed to democratize education, particularly in the higher education sector, creating equal opportunities regardless of economic status, social status, or geographical disadvantage. However, we find sufficient evidence pointing to the fact that online courses are not a panacea to the inequality regarding education, since most of the pedagogies are aimed to cater to those who have an adequate degree of prior exposure to the topic, especially the content on most of the leading Ed-Tech platforms. Again, surveys show that the vast majority of the subscribers of the much famed international MOOC (Massive Open Online Courses) platforms are college-educated men of developed nations, and it means they are not adaptable to the developing world due to the existence of several barriers (Christensen & Alcorn, 2014).

	Enrolled in School		Enrolled in College	
	Internet Access	Computer Access	Internet Access	Computer Access
Scheduled Tribes	10.7	4.0	12.8	4.9
Scheduled Castes	14.3	3.8	16.5	5.9
OBC	19.5	6.5	22.5	8.6
General	35.1	16.2	39.4	19.9

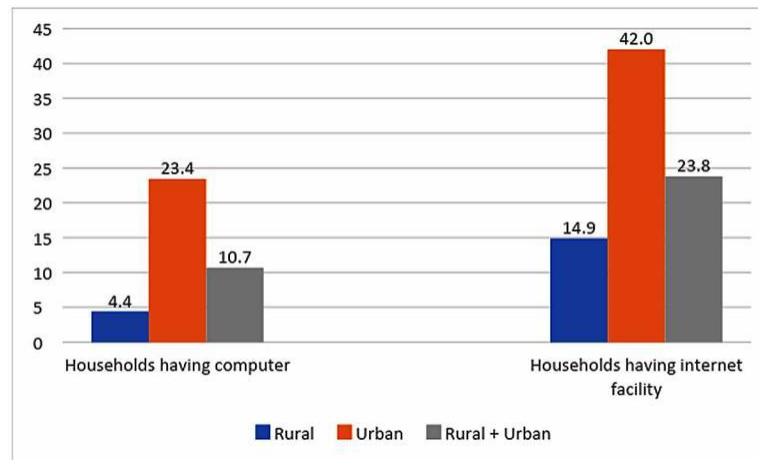
*Table 1. Social group-wise distribution of households in terms of internet access*

*Source: Authors' computation from unit records of NSSO 75th round 2017–18*

Access to the platforms, as mentioned earlier, is primarily determined by factors like the availability of reliable electricity, access to internet devices, and high-speed internet. India's internet penetration still hovers around 55% (much of it being mobile devices with the boom occurring within the past de-cade) with one of the slowest internet speeds in the world, which is a significant hurdle considering that most of this educational material consists of online lectures (Bahia & Suardi, 2019). Again, the 55% accessibility is a confusing figure since there is a gap in the data to determine the average number of users. The total number of users does not always equate to the number of internet devices since the 2018 National Sample Survey report on education shows only 24% of households have internet facilities with 11% possessing any type of computer (See Table 1). Again, India has highly unreliable electricity with outages lasting hours in rural areas, and it often leaves out 'last mile' consumers (Heynen et al., 2019). The *Antyodaya Survey of 2019* by the Ministry of Rural Development (2019) shows that less than 50% of households had access to electricity for more than 12 hours a day (see Figure 2).

Smartphone-enabled online methods are often impractical when it comes to hassle-free submissions and viewing, which necessitated the need for a personal computer. The proportion of households using a computer varies ranging from 4.6% in Bihar to 23.5% in Kerala and 35% in Delhi. Further, the internet accessibility in India varies according to the region according to the sample survey report. While internet access is a given for the upper and middle classes in metropolitan areas, one can see a gradual fall in rural areas. An iconic example can be seen in Kashmir where online education was proposed as a solution to the frequent school shutdowns owing to the general unrest. But the state policy to deny 4G bandwidth has scuttled any such attempts. The aura of technological progress makes many forget that lack of basic educational infrastructure continues to be the reality for a vast majority of Indians. The digital divide is also evident when we cross-check the issue of accessibility within various social groups where we can see that 89.3% of Scheduled Tribes and 85.7% of Scheduled Caste households whose children were in school did not have internet access. At the same time, for the Forward Castes, the same was 64.9%. Similarly, for higher education too, the same trend can be observed.

By looking through the 71st and 75th round sample survey on education, one can see that there is almost a 198% increase in the annual private expenditure on general education between 2014-18. The traditional brick-and-mortar education system is unable to fulfill the rising demand, especially since the government's initial goal to increase the Gross-Enrolment ratio to 30% was due by 2020. Here online platforms can look like an attractive option given it's cheaper and accessible to many. However, the catch is that all existing platforms only act as a supplementary resource and are still expensive to a vast majority. Not to mention the scaling up of the current online platforms requires significant investment in physical infrastructure and human capital, which are available only to a select few public institutions and private players.



*Figure 2. Distribution of households in terms of access to internet and computer*  
*Source: NSSO 75th round 2017–18*

	Enrolled in Government Institutions	Enrolled in Private Institutions
General	47.4	52.2
OBC	57.3	42.6
Scheduled Castes	69.4	30.5
Scheduled Tribes	77.8	22.0

*Table 2. Distribution of students in government and private institutions*

*Source: Authors' computation from unit records of NSSO 75th round 2017–18*

Around 77.8% of Scheduled Tribes and 69.4% of Scheduled Castes were enrolled in government institutions, while more than 52.2% of Forward Castes were enrolled in private colleges (see Table 2). A greater proportion of the vulnerable sections relies on government education since it is less expensive and more accessible than private schools. Students and their families face further financial hardship because of the shift to online education.

## **The Language Barrier**

More than 90% of the content on online learning platforms is in English, and consequently, it fails to cater to the linguistically diverse audience in India. It remains accessible only to a specific section of the population while a large section of learners cannot make much use of it. The National Achievements Survey (2017) by NCERT shows that almost 50% of Indian school kids don't have basic reading proficiency in their mother tongue. Navigating, therefore, in an arena where English is the dominant



medium proves to be a big challenge. Ouma (2019) analyzed the challenges in delivering online learning and observed that a major constraint was the lack of a reading culture among students which results in underutilization of the course materials and understanding of more complex paradigms. This reading culture is in turn associated with socio-economic privilege, imbibed to young children by their parents and those in the lower strata are sure to miss out on this. The educational system so far in India has focused quite a lot on memory and rote learning, and this, coupled with an overall disregard to develop public library systems, means most of the children are missing out on the most rudimentary aspects of learning. While societal practices and culture cannot be transformed overnight, the nascent stage of basic infrastructure aggravates the impact on first-generation learners. In the case of online education, the assumed ability to navigate the internet and tech devices and the reading material in an unfamiliar language will significantly inhibit a learner's motivation.

## **Challenges in Achieving Gender Equity**

The gender dimension in the context of online education is highly relevant, especially in India. Though online and distance learning is neutral to gender, it does not mean that the learning environment will prove to be inclusive and free of gender-related problems for the community that shifts from the traditional medium to the online mode. Female students who are learning online must take up the added burden of immersing themselves in the technological medium of learning, overcoming the constraints posed by their domestic lives. Possible frustration with technology, coupled with the infrastructural drawbacks such as poor internet and lack of sufficient electronic devices, are the problems faced by them which are added up if they have to play multiple roles of parent, income provider, and a student (Müller, 2008). The digital domain provides a possibility of space with lessened hierarchy and the free exchange of information, the differences can mutate into the form of accessibility and facilities as class divisions can aggravate the issues laid down by online medium of education (Lamsal, 2022). In an utterly distinct setup in which the learners are not face-to-face with the instructors, students who are not used to writing texts and voicing their concerns online may find it challenging. The extent of overcoming this obstacle will rely upon how much the learner feels connected and comfortable with the instructors as well as fellow learners.

Although gender is not a monolith identity and one may find vast differences between the genders, the societal influences and the common sociological aspects affecting people in subtle ways cannot be denied. The dynamics between gender may surface and even prove resilient. In general, men are held to construct and maintain an independent self-construal (Cross & Madson, 1997). Consequently, men tend to be more independent and assertive, use language to establish and maintain status and dominate in relationships, transmit information, and offer advice to achieve tangible outcomes. On the contrary, women are more expressive, polite, and tentative in conversation, preferring to hold back their concerns and avoid interrupting others. Gender-related differences are evident in online communication (e.g., Kuchler et al., 2022) as men tend to assert their presence by being more individualistic while women are found to be more intimate and feel a communal and connective bond, consequently talking about the common issues rather than their grievances (Rovai & Baker, 2005).

The socially constructed behavior differences are especially stark in the context of India. Cultural norms of women being quieter and softer would mitigate their voices to be heard in an online classroom.

At the same time, the male learners may assert opinions as facts, use insults and even profanity to get their way, and in general manifest an adversarial orientation toward their interlocutors (Herring, 1993).

In a knowledge-based economy, it is hard for female learners to make use of the opportunities put forth by the new technologies due to a lack of access, funds, and societal norms. In India, Kakar et al. (2012) found out that technology is still regarded as an exclusive province of men. The subtle disapproval from the families regarding women using the internet emanates from cultural attitudes and many young women access undesirable material as well as getting connected to sexual predators, kidnappers, and traffickers a concern for many families. India likewise faces a major gender disparity in access to the Internet with women constituting only 35% of the total users. Online education thus becomes a “third shift” for women, especially in the developing world, with the time being constrained between their already packed life at home or work. The cultural obligations within the South Asian communities restrict modern technology for women and further one can see how the online pedagogy model fails to imbibe gender parity, as studies show how interactive classes by women could have a major impact on how young people view the role women should play in society.

The technological advances of this century have helped in the democratization of knowledge. While the expansive and enlightened policies in the field of education have provided access to female learners, the recent time has proved to be a golden opportunity for those who want to reap the benefits of formal as well as informal education. This has emerged as a chance for women and girls to reap the benefits and improve their social and economic circumstances. Researchers have shown that access to online learning is hindered by the same underlying causes as is the case with in-classroom education: lack of awareness, time constraints, financial issues, and cultural factors. Therefore, the solutions to these problems are similar as well. Awareness and advocacy, institutional steps to expand the access as well as the molding of approaches according to women’s needs and priorities are imperative. Since an initiative needs to be carried out by women, women’s voices are necessary to move ahead in developing countries.

## **The Dilemma of Learned and the Learners**

The online classroom provides a radically different environment not just for learners, but for the instructors too. Replacing a “brick and mortar” classroom with a virtual medium hampers the quality of interpersonal communication and rich discussion, which may fall short of a rounded learning experience. A lack of face-to-face conversation debilitates the instructor’s ability to get the mood of the class. The non-verbal cues that significantly direct the teacher’s flow and their ability to gauge the situation of the class are non-existent. Bambaeroo and Shokrpour (2017) have shown how non-verbal communication is an inherent aspect of teaching. Skilled instructors effectively use non-verbal cues like smiling, eye contact, and the position of arms and legs and can discern the level of attention and interest by subtly noticing the body language of their students. In an online medium where the instructor cannot see their students, due to technical and non-technical issues, this aspect of enriched learning is lost. A skilled instructor may not always translate to being an efficient facilitator of learning in an online mode since proficiency with technology is a sine qua non for online instruction. Thus, the glaring drawbacks of a virtual classroom mitigate a rich learning experience of a physical classroom. Another aspect that can further hamper the quality of learning is the difficulty of learning experiment-oriented subjects online.

Existing literature shows that online learning can make participants feel isolated, reducing their learning pace as well as their confidence. Hence efforts are needed to ensure online peer-to-peer study groups or learning communities counter the trend. When comparing online and face-to-face learning, online learners are considered to be capable of collaborative learning and rapid growth environments, whereas conventional learners are more positive about their learning outcomes (Kundi & Nawaz, 2010). The implementation of a group learning strategy to foster collaboration and teamwork is vital pedagogy in education (Garcia, 2021). Most of the online learning platforms are built upon an objectivist theory of learning which sees education models as predictive and a “fit for all” solution without any social, economic, or cultural consideration with a particular bias towards western models. This could mean students would feel increasingly alienated, especially when they are learning a curriculum without any direct examples from their surroundings. Thus, Revano and Garcia (2020) recommend to integrate innovative strategies like a design thinking curriculum to situate the learning process using real-world scenarios.

Again, the pandemic was an eye-opener to the social role of schools as they kept students engaged for a large part of the day, benefiting working women and providing nutrition to a large section of the population through mid-day meal schemes. Parents at large face difficulty in catching up with the latest technologies to help their kids with their studies, which is a stark reminder of the digital divide. Furthermore, in households with multiple children, a conflict for online resources is bound to emerge since only 24% of Indian households have Internet access, implying that the parents would be forced to let their children use mobile devices which are otherwise used for personal use. A lot of subtle issues remain unnoticed. While face-to-face interaction is an integral part of pedagogy, there have been instances where many students feel hesitant in turning their cameras on during the classes. A reason for this is that many who do not belong to well-off socio-economic backgrounds feel uncomfortable with exposing their surroundings to the entire class. A conducive environment for online classes presumes a private space within the households of the student, and those who belong to the disadvantaged sections, it thwarts the overall learning experience.

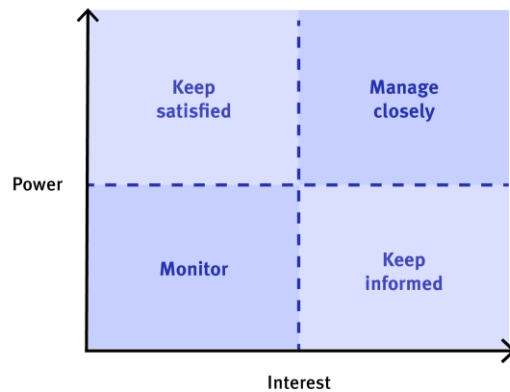
## **Stakeholder Analysis of the Present Online Education System in India**

Stakeholders are identified to be those upon whom the organization or an institution depends for success and similarly they also depend upon the institution or an organization to realize their goals (Mitroff & Mason, 1980). Thus, a stakeholder model is needed to judge the effectiveness of an organization, a state which will ensure its survival. In this case, it is important to analyze whom the primary and secondary stakeholders are through the usage of a brief stakeholder analysis, based on the following power interest grid.

The above-given grid in Figure 3 gives a basis for defining the part that a certain community or a group of likewise people plays in a project, policy, or subject defined on the power they hold and the interest they have over the subject. Table 3 presents the stakeholder analysis following the grid and Figure 4 presents the integrative results.

## Is Online Education a Good Social Investment?

Social investment can be defined as an investment that creates an impact on the lives of people by the means of imparting skills and offering development and growth to an individual. Education comes under one of the major categories of social investment and hence does e-learning. In Table 4, we draw a SWOT analysis for e-learning in terms of the social aspect, to determine its characteristics of it as a social development model.



*Figure 3. Stakeholder analysis grid*  
*Source: Thompson, (n.d)*

## The Policy Conundrum

Globally, several online courses can be credited to regular college programs on a one-on-one basis partnership between the service providers and institutions. Such a mechanism does not exist in India which impedes the end goal of the online learning process. Surveys show that the majority of online programs were not attracting students who were far away from the institution, pointing out the need for the development of hybrid models (Palvia et al., 2018). Case studies show the flexibility and success of online learning in China when the traditional lecture mode was enhanced with online “network learn-ing” (i.e., materials were accessible online and were expected to be read by students). These methods were observed to be quick but less effective (Zhao et al., 2009). The *Arab Open University* (AOU) is the most popular institution in the Middle East which follows the hybrid online model where students have a physical infrastructure to register, write exams, and meet with faculty on prior appointments (Mirza & Al-Abdulkareem, 2011). The online mode was observed to be popular in Australia owing to its need to accommodate lifelong learning in its fast-changing economy and to leverage the productivity of its small population (Palvia et al., 2018). These examples show online education offers excellent promise for upskilling as well as making education reach the masses, provided sufficient state policy exists to guide them. But the State in India notably lacks both the imagination and the foresight to formulate policies on the same, causing the absence of any notable contribution to the discussion on regional disparity in terms of language and access to quality education.

The First National Education Policy (NEP) of 1986 discussed in length the expansion of the open university system (IGNOU) as well as the need for distance learning to make technical and managerial knowledge more democratic. It also acknowledged the issue of time and distance as a significant constraint to students and deliberated the use of technology to address the same. Of course, the internet in 1986 was a rudimentary system, and hence it wasn’t exactly envisioned as a key to the solution, though the first strides towards online teaching mode were being experimented with elsewhere. The current NEP of 2020 puts immense faith in MOOCs and sees them as a fast solution to tackle roadblocks on the path to basic literacy and skill development despite the vast disparity that exists in terms of access. Although the policy accepts that these programs have not been incredibly successful, there is an emphasis on improvement with a digital repository of all such content but unfortunately without any analysis, strategies for implementation, or general guidelines. Also, there is an exclusive focus on technical and management courses without any models to include components of medical education or implement similar policies in school systems.

Table 3. Stakeholder analysis

No.	Stakeholder Name	Power	Interest	Primary/ Secondary Stakeholder	Analysis
1.	Students	High	High	Keep Satisfied: Primary	Students use e-learning to get coaching and get enrolled in higher education and allied activities. For many, it forms a portion of their education, be it coursework or to enhance their skills; and for many others, it is the sole way of getting an education.
2.	Teachers	High	High	Keep Satisfied: Primary	Teachers play a major role in any education system, be it via teaching the curriculum or providing sufficient mentoring Any mode (online, offline, or hybrid) affects their professional and personal life Teachers/mentors need to be up to date with the technical sophistication of new technologies to provide a smooth e-learning experience.
3.	Parents	High	Low	Manage Closely: Secondary	Several students rely on their parents for financial support making them major stakeholders The primary responsibility of the parents is to monitor the child's internet activity. Parents directly influence the home environment of the learner, which plays a vital role in the academic performance
4.	Educational Institutes and the Administration	High	High	Keep Satisfied: Primary	The educational institutes concern themselves directly with the student issues and the resistance from the faculty in adapting to online education. Act as primary contact points for distance learning mode
5.	Content Producers	Low	High	Keep Informed: Secondary	Changes in the mode of learning require certain changes to the curriculum. They influence the nature of educational content and the mode of delivery to ensure maximum learning.
6.	Technology Producers	Low	High	Keep Informed: Secondary	The goal of profit maximization through providing solutions and technology that are accessible, cheap, and easy to use Further, it also opens up prospects for new markets and products that might have a high return on investment (ROI).
7.	Regulatory Bodies	High	Low	Monitor: Primary	Provide framework and policies that ensure a level playing field of educational opportunities across the nation, especially in a country like India. The ultimate authority to encourage or discourage e-learning. They directly influence the formation of curriculums, which keeps on evolving in the education sector.

Figure 4. Stakeholder analysis grid for online education

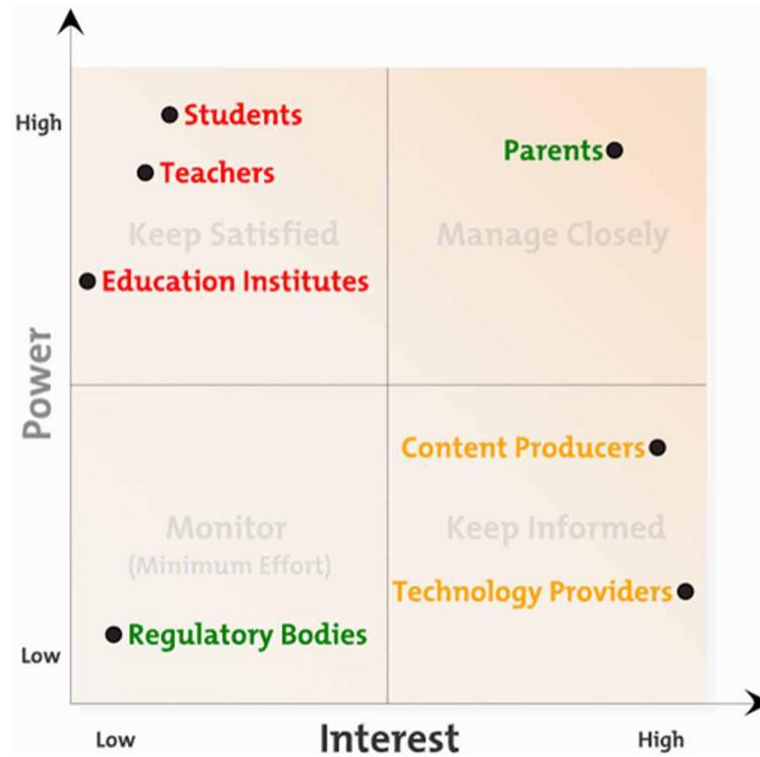


Table 4. SWOT analysis for online learning

STRENGTHS (+5)	WEAKNESSES (-3)
<ul style="list-style-type: none"> <li>• Accessible at home and even in remote locations.</li> <li>• Cheap in comparison to in-classroom education.</li> <li>• Flexible schedules</li> <li>• Due to the anonymity, studying for marginalized individuals becomes easy.</li> </ul>	<ul style="list-style-type: none"> <li>• Access to an individual device and the internet requires a lot of social capital and hence creates a sense of insecurity for those from economically weak backgrounds.</li> <li>• Lack of technological literacy across older age groups.</li> <li>• The disparity in access to the internet and electricity.</li> </ul>
<ul style="list-style-type: none"> <li>• Comes with greater access to the resource pool.</li> </ul>	
OPPORTUNITIES (+5)	THREATS (-4)
<ul style="list-style-type: none"> <li>• The opportunity for market growth.</li> <li>• Reduce unemployment through upskilling.</li> <li>• Cross the gender barrier, since this will open opportunities for women from orthodox backgrounds where it is forbidden for them to move out of households.</li> <li>• Offer an opportunity for women who need a career change and cannot do so due to family commitments.</li> <li>• Cross the cultural gap as students from all over the nation and the globe will get to interact with each other.</li> </ul>	<ul style="list-style-type: none"> <li>• It can be costly, in the case of predatory companies and institutions.</li> <li>• Lack of adequate laws to address cybercrimes.</li> <li>• There is a potential information overload.</li> <li>• Children might get access to age-filtered content.</li> </ul>

## SWOT Analysis of Policies for Online Learning in India

As Benzaghta et al. (2021) have shown in their integrative literature review of SWOT analysis, the method is getting more traction by scholars to address various issues and conduct strategic planning in the higher education sector, especially in the USA. Moving forward, let us look at the concept of online learning strategically in the Indian context that will structurally exhibit the advantages, opportunities, and avenues for improvement (see Table 5).

*Table 5. SWOT analysis of Indian policies*

STRENGTHS (+5)	WEAKNESSES (-6)
<ul style="list-style-type: none"> <li>• It acknowledges the defect in the currently online models and discusses the need for hybrid models.</li> <li>• The emphasis of the Public-Private Partnership (PPP) model ensures the industry is on board, especially regarding the offering of skill development programs.</li> <li>• It considers collaboration with international universities and brands to make world-class content available to the masses.</li> <li>• The scaling up of online education is owing to the improvements in digital infrastructure.</li> <li>• Recent policies emphasize the mental well-being of students.</li> </ul>	<ul style="list-style-type: none"> <li>• No models to include components of medical education</li> <li>• Absence of a robust, tested education model for deployment on a mass scale</li> <li>• Policies focusing on disadvantaged groups tend to get reduced into a cluster of courses having no coherence</li> <li>• Focus exclusively on Technical and management courses</li> <li>• Lacks a similar version for adopting online education at the school level</li> <li>• The regional and linguistic disparity is not addressed</li> </ul>
OPPORTUNITIES (+4)	THREATS (-4)
<ul style="list-style-type: none"> <li>• Focus on online education as a supplementary program along with traditional pedagogy.</li> <li>• Use the same for training and skill development of faculty which is cheaper and easier</li> <li>• Vision to develop multi-disciplinary online programs which are the need of the era and has constraints to be offered in a university system.</li> <li>• Opportunity to attract international students in specific courses.</li> </ul>	<ul style="list-style-type: none"> <li>• Targets are often too ambitious and might become mere 'paper tigers' since several of the past policies are yet to be implemented</li> <li>• Reduction of funding in public institutions to favor private institutions which are unaffordable to many.</li> <li>• High enrolment in online courses doesn't necessarily translate to the high course completion, effectively defeating the core purpose of democratizing education</li> <li>• A disparity can occur between institutions with and without access to high-end teaching technologies.</li> </ul>

## CONCLUSION

One important thing to note is that the pandemic drove interest in online education, and its possibilities had set aside ambitious targets to be achieved. One can argue that these would end up as mere 'empty suits' since the current educational system is yet to achieve several of the pre-planned targets. Also, caution must be taken that the same is not used as an excuse to reduce funding to the already underfunded public institutions or push towards increased privatization of higher education which makes it unaffordable to many. High enrolment rates of online courses look promising, but it is not an equivalent parameter to judge the course completion rate, which in turn nearly defeats the initial agenda of democratizing education. Training and support can go a long way in assuring women's presence in producing content. An explicit policy regarding the design and content of websites, instituting monitoring procedures with



sanctions for offenses, and taking measures to educate users in netiquette are echoed by von Prümmer and Rossié (2001). While instructors and institutions need to be aware of gender biases and inequities in access, they should ensure that all learners, male or female, enjoy the same degree and freedom of online access and comment. Taking cognizance of gendered expectations as well as noticing any uneven ratio of learner-learner and learner-teacher interactions and using feedback mechanisms to learning styles will push the trajectory to the desired route.

Instruction in the online medium has significant challenges to face, however a constructivist and col-laborative approach that engages the learners actively, with sufficient potential for reflective thinking and making connections with their surroundings can go a long way in imparting knowledge. While learning is a social process of two-sided communication, technology can facilitate this process if it cannot replace it. Instead of having a deterministic outlook towards the goal of the lecture, or education in general, a recognition of individual differences and different experiences will make learners more engaging in the process, especially when in a virtual setting. Many students are likely to experience stress, worry, and sadness (Garcia, 2020) because of the hindrance caused by COVID-19, thus it is vital to give future emotional support to students after normal classes resume. Future research in this area might look at the effects of various stress relievers on students' mental health. The focus should be on implementing ways to mitigate the harmful effects of the COVID-19 pandemic on learning capacity. Another area that has the research potential is the analysis of the multi-faceted and differential impact of caste on learning outcomes. Summarizing the major focus on mitigating the impact of COVID-19 as well as future adoption of online learning ought to be divided among the following themes: (a) challenges in content understanding, (b) methodological challenges in pedagogy, (c) technical challenges, (d) behavioral challenges, and (e) future impact on learning outcomes.

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