



A study of EdTech Start-ups Capitalizing over E-Learning Technologies during the Covid-19 pandemic in India

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ABSTRACT

Quality and uninterrupted education is the hope and need of every parent across the globe. Indian education system is one of the largest in the world catering to the educational needs of a huge population of 430 million between the age group of 6 to 23 years. It is well known that the educational institutions in India (prior to the pandemic) were based only on the brick and mortar mode of teaching following the conventional set up of in-person lectures. Then came a phenomenon that no had ever even anticipated let alone, lived and survived. The sudden outbreak of Coronavirus of Covid-19 startled the entire world infecting people in huge numbers. This led to the World Health Organisation declaring it as a Pandemic. Covid-19 caused devastating impact on all the sectors of the economy including the educational sector. The outbreak led to shutting down of all the schools, colleges and coaching centres across the country. This situation challenged the pre set educational norms and forced the educators to shift to teaching through online channels to ensure the continuity of education to the students. This paper is an attempt to understand the importance of online learning along with e learning modalities analysis in times of crises covering strengths, weaknesses, opportunities and challenges (SWOC Analysis). The paper also studies the emergence and growth of Ed-Tech start-ups during the times of pandemic in India. The paper concludes with ideas and suggestions to deal with the challenges associated with online mode of education.

Keywords: Coronavirus, COVID-19, Education, Online Learning, Technology, EdTech

1. Introduction

Online learning is a tool that makes the teaching–learning process more innovative, flexible and student oriented. Online learning is defined as “learning experiences in synchronous or asynchronous environments using different devices (mobiles, laptops, i-pads, tabs, computers etc) with access to the internet. In such environments, students can be anywhere (independent) to learn and interact with instructors and other students” (Singh and Thurman, 2019). The synchronous teaching and learning environment is structured and created in such a way that enables the students to attend live lectures and demonstrations. There are real-time interactions between educators and learners, and there is a possibility of instant feedback. Synchronous learning can provide a lot of opportunities for social interaction (McBrien et al., 2009). On the other hand, asynchronous learning environments are not properly structured. In such a learning environment, learning content is not available in the form of live lectures or classes but, at different learning systems and forums. Instant feedbacks and immediate

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responses and interactions are not possible under such environments (Littlefield, 2018). Recent and rapid developments in technology have made distance education uncomplicated (McBrien et al., 2009). Cojocariu et al., 2014 in his study revealed that there is a common need of a computer connected to the internet for most of the phenemon like online learning, web based learning, open-learning, blended-learning, m-learning or computer mediated learning. This offers the possibility to the students to learn from anywhere, anytime, in any rhythm and with any means. Amidst this pandemic, there is a dire need to spread such online platforms where (a) There is possibility of watching lectures that have already taken place and recorded, (b) discussions with students can be done to ensure open communication, (c) lectures are accessible on any device connected to the internet and not just computers, (d) video conferencing can happen with at least 40 to 50 students, and (e) instant feedback along with assignments from students can be obtained (Basilaia et al., 2020). Although the formal education system in India is multi fold and well regulated, the demand for informal education which comprises of supplementing learning tools, coaching classes, test preparation, vocational training etc. has grown enormously in last five years due to the introduction of education technology in India. The transformation is noteworthy in tier 3 and 4 cities, towns and villages where the students have been able to get access to quality education at the remote locations through various EdTech platforms.

2. Need of the Study

A few years back, Bill Gates had said, “Not missiles but Microbes will bring the world to its knees”. The statement couldn’t prove to be more correct. Covid-19 had its impact everywhere and in every corner of the world. World Bank has predicted that a pandemic could see global wealth stripped of 3 trillion dollars. It seems we are truly on course for that situation. Needless to say, its impact on India too was (and continues to be) extremely severe and disrupting. To curb the community spread of the virus, India went to a complete lockdown causing a complete standstill to all the economic activities. The orders of staying home and practicing social distancing left no one. As people stayed indoors, technology helped in communicating with everyone. At the same time, schools, college and other educational institutions started using online teaching as the primary mode of classes. The teachers and instructors organized online webinars and meetings. Learning from home offered teachers and students a completely new and unexplored dynamic. Online education brings a lot to the learning table for all students because they are from pre-school or graduate level. Numerous digital tech companies have played a momentous role in the this paradigm shift like Google class-room, Zoom, Microsoft Teams, and Blackboard (Adeoye et al. 2020). Fortunately for India, the emergence of EdTech institutions as well as start-ups has coincided with growing internet penetration in the country along with the availability of cheaper smart phones and low data prices. All of this has enabled ease of access to the quality education through various learning platforms among students across the nation. EdTech sector is already budding in India with significant players like Byju’s, Unacademy, Catalyst Group catering to different groups of users. In the current situation, learning through these apps and interfaces will further increase. It represents an enormous demand that is rising for online learning. The sector has also attracted private equity investments of ~US\$ 4Bn in last 5 years which has led to global EdTech companies like Byju’s commanding a whopping valuation of US\$ 15Bn.

The market has also witnessed consolidation of the sector with aggressive merger and acquisition activities. With the current market size of USD 700 - 800 mn, the EdTech industry is expected and well on course to become a USD 30 Bn industry in next 10 years on the support of growing demand and evolving business models. Furthermore, the lockdown imposed due to Covid – 19 increased the demand for EdTech products multifold. Moreover, the EdTech platforms saw this as an opportunity to capitalize on the lockdown period, which led to an extraordinary increase in the process of registration and time spent on various social media sites and platforms (Behler, 2020). It has broadened the landscape of EdTech products from supplemental education platforms, test preparation and vocational training apps to B2B products helping the conventional educational infrastructure to go online. The pandemic has been a shot in the arm of EdTech and it is strongly believed that the current EdTech product landscape will keep on evolving with continuous innovations focusing on providing more customised and personalised learning experience for users.

3. Review of Literature

Hargreaves and Fullan (2015) conducted a study on traditional learning, e learning and the adoption of online teaching learning system by educational institutions. They concluded that although Covid-19 caused devastating impact on the economy, it pushed the schools and colleges to shift to online modes of education. In order to ensure continuity of education, students and teachers had to inculcate major changes.

Tripathy and Devarapalli (2020) conducted research on the continuity of education in the times of Covid-19. They concluded that a significant aspect of dealing with coronavirus is to make sure that the learning remains stable. The connection between educators and students through digital platforms is the latest transformation in the field of education to eliminate the traditional brick and mortar mode of education.

Burch and Miglani (2018) in their research stated that the shift from offline learning to online learning is here to stay permanently even after the pandemic is over. Online learning is on-demand, convenient, and personalized as well as economical. As students and their parents across the country are exploring online learning resources in these unprecedented times, they observed that online learning is a lot more impactful than a coaching class in offline mode .

Rajkumar and Ganapathy (2020), found that after the lockdown as the date of lockdown was getting extended, educational institutes found that they need to transform their teaching methodologies to continue the education of students and so, the teaching was done online. EdTech startups are seeing their users grow exponentially. In March itself, Byju's recorded 6 million new pupils' accessing free lessons on its platform, while unacademy saw 1 billion watch minutes. Another EdTech, Toppers observed 100% growth in free engagement in March.

Viner, Russell, Croker and Booy (2020) concluded that Covid-19 prompted the closure of schools and colleges around the world. The schools had been closed by

over 200 nations, affecting billions of students. This hasty transformation inspired educator and academicians worldwide to switch their courses online and encourage students to enroll in various freely available courses on online platform.

Bingham and Conner (2010) in their research opined that as lockdown led to considerable adoption of digital technologies and online learning tools and platforms, the schools and higher institutions saw this as a perfect time and opportunity to experiment and implement many emerging and popular tools to make the transition and delivery as smooth and feasible as possible.

Objectives of the Study

- i. To explore the growth of EdTech Start-ups and online learning.
- ii. To conduct Strengths, Weaknesses, Opportunities, and Challenges (SWOC) analysis of online learning during the Covid-19 pandemic

4. Research Methodology

The study is descriptive and attempts to examine and understand the increasing relevance of online learning during crisis and pandemics such as the Covid-19. The bottlenecks associated with online learning and possible remedies were also recognized as per previous studies. The SWOC analysis was done to understand various strengths, weaknesses, opportunities and challenges pertaining to e-learning. The research tool used for analyzing the data which amassed from different sources for this study is a content analysis and the research method is descriptive research. We have taken into consideration the qualitative aspects of the research study. This study is completely based on the secondary data including journals, reports, search engines, company websites and scholarly articles, research papers and other academic publications.

EdTech Start-ups in the Times of Corona

With the evolution and expansion of technology and easy and economical access to the internet services, almost every sector has undergone significant transformations in the recent past; with the education sector being no exception. Around 2010, EdTechs start-ups entered the market intending to disrupt the education sector. A learning application Byju's which was established in 2011, became one of the most valued EdTech companies in the year 2019. But, the outbreak of Covid-19 pandemic has boosted the confidence amongst the society that learning is not confined within classrooms. That is why, majority of EdTech start-ups witnessed an upsurge in terms of users, funding and scale, attracting attention from investors, entrepreneurs and relevant stakeholders like never before. EdTech Start-ups are tapping all the right opportunities by providing free online courses to students amidst this corona outbreak and they are hoping for improved performance. EdTech start-ups are trying hard to

make most out of this situation by providing several free courses and e-resources to the students. Their customer base is improving a lot, it might be for a temporary period but even if they can retain a few customers it is for their good only.

Some of the famous EdTech start-ups include Byju's, Adda247, Alolearning, AptusLearn, Asmakam, Board Infinity, ClassPlus, CyberVie, Egnify, Embibe, ExtraaEdge, iStar, Jungroo Learning, GlobalGyan, Lido Learning, Pesto, Vedantu, Edubrisk, ZOOM Classroom, ZOOM Business, Toppr, Unacademy, Coursera, Kahoot, Seesaw, Khan Academy, e-pathshala, GuruQ, and the list is long. Out of these EdTech companies Byju's, Unacademy, upGrad, Eruditus are top unicorn companies having valuation more than one million dollar. Apart from these, SWAYAM portal is an impressive educational program, initiated by the government of India to achieve three cardinal principles of our educational policy, that is, access, equity, and quality. The main objective of SWAYAM is to provide online learning and reduce the digital divide. It provides a large number of free courses for school, distance, graduate, and postgraduate education as well as for academician. During the Covid-19 crisis, SWAYAM is of great assistance for learner across the country.

The edu-tech or ed-tech industry is currently booming as all educational institutions small or big, are adopting a hybrid approach to learning. That is why, India's Ed-Tech market is all set to increase by 3.7 times in the upcoming five years, growing from US\$ 2.8 billion (in 2020) to US\$ 10.4 billion by 2025 and it will be 30Billion industry in next 10 years.

Most Popular EdTech start-ups in India



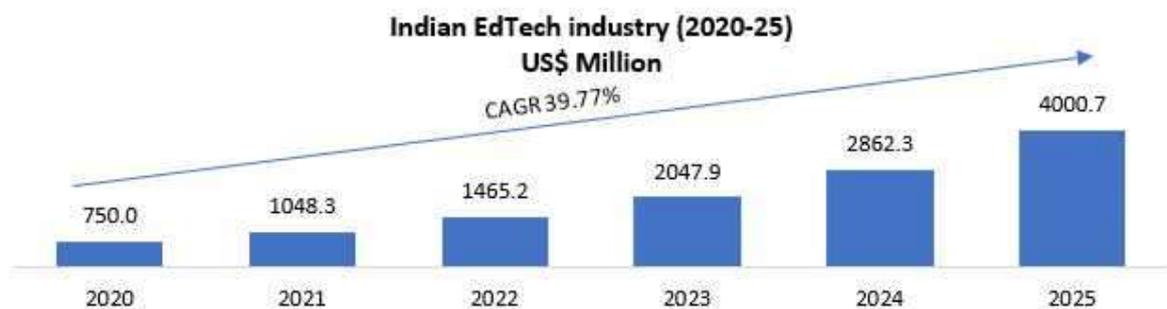
Ed-Tech Startup	Year/Founders	Courses offered
Vedantu	2014 / Vamsi Krishna, Anand Prakash and Pulkit Jain	Live interactive online classes, test series and analysis, CBSE and NCERT curriculum of Class 1 to Class 12 th , JEE Courses, NEET, ICSE Curriculum
Byju's	2011/ Raveendran and Divya Gokulnath	IIT-JEE, CAT, UPSC, GMAT, GRE, Engineering and Medical and Supplement courses of class 6 th to class 12 th .

Ed-Tech Startup	Year/Founders	Courses offered
Unacademy	2010 / Heemash Singh	CA, CAPF, UPSC, CLAT, CAT, JEE, PMET
Upgrad	2015 / Ronnie Screwvala, Mayank Kumar, Phalgum Komapalli and Ravijot Chugh	MBA, PGDM, Executive MBA, MBA in digital and finance, Product management certification programme, Data Science, software and technology
Toppr	2013 / Zishaan Hayath	JEE, UPSC, NEET, SAT, curriculum for grade 5 to 12
Meritnation	2008 / Pavan Chauhan	Grade 1 to 12- CBSE, ICSE and all leading state boards
Camp K12	2010 / Anshul Baghi	Entrepreneurship and app development programs
Cuemath	2013 / Mana Khurma	Maths and coding programs

(Source: Authors)

Overview of the Indian EdTech Industry

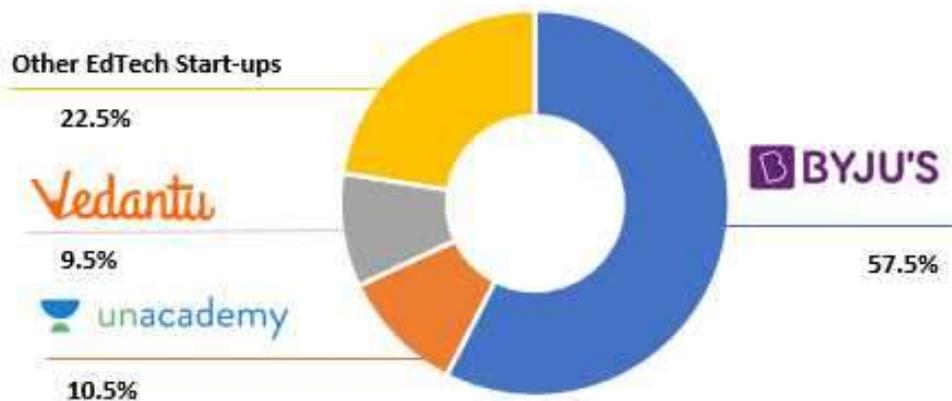
As per the report of the India Brand Equity Foundation (IBEF), the India EdTech industry was valued a whopping 750 million US\$ in the year 2020. It is expected to reach US\$ 4 billion at a CAGR of 39.97%. The growth is seen as a result of rising demand for non academic courses from tier II and tier III cities. US\$1.5 billion (out of projected market value of US\$4 billion) will be aimed at Kindergarten to Class 12 (K-12), after school foundational curriculum and pre preparatory courses and study material.



(Source: www.ibef.org)

EdTech start-ups in India earned more than US\$ 1.43 billion through over 100 deals in the year 2020. EdTech emerged as the leading sector with maximum funding, owing to mandatory lockdowns imposed by the government which compelled the educational institutions to adopt and implement technology driven learning solutions. Out of the total funding raised, Byju's leads with 57% followed by Unacademy with 10.5% and Vedantu at 9.5%.

EdTech Funding in India: US\$ 1.43 billion (2020)



Source: www.ibef.org

Edtech-post pandemic scenario:

Earlier Parents has lack of confidence and knowledge regarding online learning and always believe in offline schooling of their child instead of e-learning. But the COVID outbreak has emerged as an opportunity for EdTech startups to convince the parents and build trust in their product by offering free access to their platforms during that period.

That's why, Ed-tech firms now get the trial and mindshare they couldn't get earlier. Because of that, Parents are now increasingly starting to see ed-tech platforms as complementing their children's learning and growth.

Growth drivers of online education

There are several factors that are driving digitization in Indian education sector and leading towards adoption of online learning:

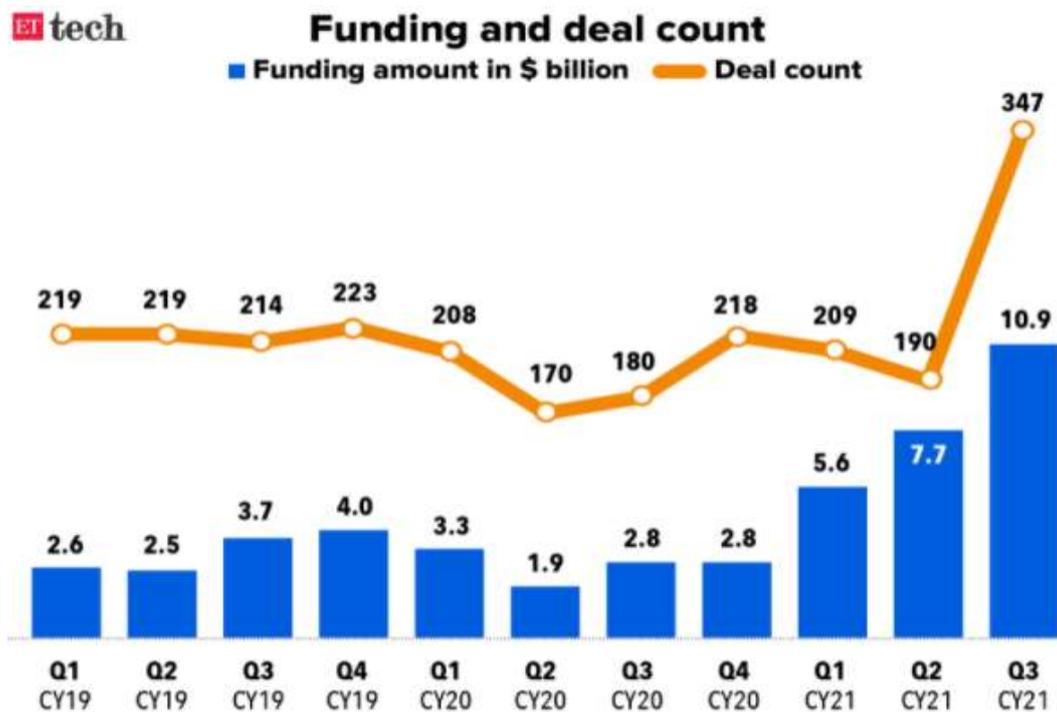
1. **Internet Penetration:** The rise of internet penetration has catalyzed the expansion of online education market in India. India has witnessed a fall in the internet data costs by more than 90 percent since 2001, because of substantial increase in the number of internet users, which stands at 451 million in 2019, as per a report by Internet and Mobile Association of India (IMAI). However, this was only 190 million in 2013. Hence, it is an indication of high growth potential. And it is also anticipated that by 2022, the total internet users will be more than 800 million, with internet penetration reaching to 60 percent. This internet penetration will enable increase traffic for online education players.
2. **Growing Smartphone penetration:** Rapid growth in the smart phone usage, which is expected to be reach to 829 million by 2022 is also one of the key driver, which stimulate online education player to enter in online education market and t introduce e-learning platforms.

3. **Government initiatives:** Government of India has taken a number of inexpensive initiatives which are contributing in building the infrastructure needed for online education. These initiatives include SWAYAM, E-Basta, Rashtriya Madhyamik Shiksha Abhiyan (RMSA), Skill India and Digital India, Massive online open courses (MOOCs), National Digital Library. The authorities are also working on a National Open University for the dissemination of education to the masses. In addition, it is actively promoting digitization of education and ease of internet access.
4. **Online Channels:** There are numerous EdTech startups in india like like BYJU's, UpGrad, Simplilearn, Topper, Catalyst Group and Unacademy, Coursera, Udemy with their main focus on test preparations and personalized learning programmes. Foreign players like Brainly have also started operating here. YouTube channels like StudyIQ, wifistudy and Mahendras, Khan academy are very popular and have a sizable subscriber base. Hence, this trend will motivate other players also to enter in such a growing sector.
5. **Low cost and convenience:**-Online skill enhancement and enrichment courses are more economical as well as convenient than offline alternatives for many students, as most of them are freely available and subscription is applicable only for some specialized programs. Many prestigious universities and institutes such as Harvard University, Berkeley University of California, and Boston University, Indian institute of management, IITs facilitate online courses on numerous subjects. It is also more convenient for students to access their lecture and study material at any time and place.
6. **Increase in disposable income and a large fraction of the young population:** Growth in disposable income is egging the young population to enhance their skills for better career and salary increments. Employment opportunities globally are tightening their qualifications, resulting in acute competition. This makes the young population with high aspirations but lower income, a good target market for online education. Further, the acceptability of online channels is also higher in the younger demographics.

Traffic share of top EdTech companies before and after lockdown

Pre Lockdown		Post Lockdown	
Domain	traffic share	Domain	traffic share
vedanta.com	9.75%	udemy.com	17.81%
udemy.com	9.29%	bylus.com	11.37%
learncbse.in	9.20%	courcera.org	10.10%
bylus.com	8.67%	toppr.com	8.81%
gradeup.co	8.25%	unacademy.com	7.58%
unacademy.com	6.79%	learncbse.in	6.13%
embibe.com	6.26%	vedanta.com	5.90%
toppr.com	5.98%	doubtnut.com	3.26%
tiwariacademy.com	4.98%	gradeup.co	3.05%
maritnation.com	4.42%	aakash.ac.in	2.96%
study.com	4.16%	khanacademy.org	2.83%
khanacademy.org	2.97%	chegg.com	2.41%
courcera.org	2.93%	study.com	2.40%
chegg.com	1.98%	maritnation.com	2.35%
onlinetyari.com	1.71%	embibe.com	1.65%

Source: -<https://inc42.com/features/EdTech-startups-look-for-permanence-beyond-the-covid-19-lockdown-boom/>



Source: Venture Intelligence/PwC Report

Key drivers

Gamification and rise of edutainment

Cashing in on the rising popularity of gamification among the youth, companies such as Toppr, PlayAblo, Cuemath and Byju's have introduced learning through games and puzzles making it easier and exciting for the students to understand and grasp concepts in a fun way. In the same way, companies such as Kiddopia, Kutuki Kids Learning, TinyTapps, Enguru

and Lido Learning have started initiatives towards making education more interesting and interactive with the help of videos and music. According to a study, over 70% students stated that gamified courses are more motivating and engaging than traditional ones.

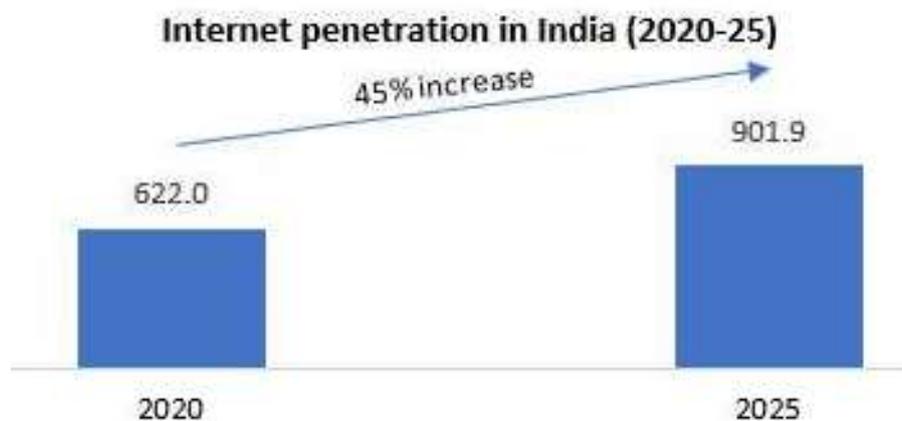
A hybrid EdTech industry

Companies in the EdTech segment are expected to implement a hybrid channel approach in the future. Online players are trying to establish offline connecting points for students. For instance, EdTech decacorn Byju's has piloted Byju's Learning Centre, a new hybrid model, allowing students to visit offline education centres for classes.

Exponential escalation of internet penetration in India

As per the IAMAI-Kantar ICUBE 2020 report, India had 622 million active internet users in 2020. Owing to high adoption rates in rural India, this number is expected to increase by 45% and will reach 900 million by 2025. Small towns in India records two out of five active internet users in the country. 67% of active internet users are from urban population.

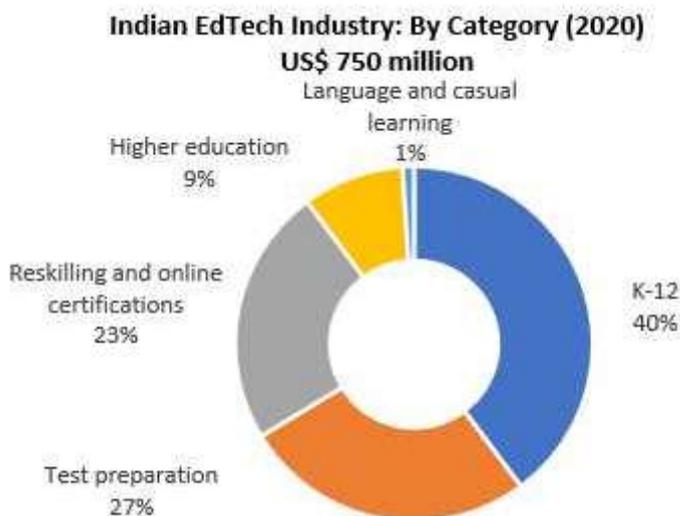
According to the Annual Status of Education Report (ASER) 2020, Smartphone ownership among government school student families increased from 30% in 2018 to 56% in 2020, whereas smartphone ownership among private school student families rose from 50% to 74%.



Source: www.ibef.org

K-12 category

The Indian EdTech industry in India is rising at an exponential pace, with particularly high penetration in the K-12 segment as lockdowns significantly disrupted the working of educational institutions. According to Tracxn, a data analytics company, Indian EdTech firms have raised US\$ 5.77 billion in funding in 2021 so far. Of the total amount raised, US\$ 99 million was raised by K-12 education specialists. Since 2018, more than 4,800 K-12 start-ups have been launched globally, with 1,782 start-ups in India alone offering courses in the form of subscription packages for a set of subjects to each class.



Source: www.ibef.org

Recent Activities

Jan - October 2021	Teachmint	Teachmint, a start-up that helps teachers and institutions create their own virtual classrooms, raised US\$ 78 million in a Series B funding. The new round of funding values the company at US\$ 500 million.
August 2021	Byju's	Byju's acquired three major companies: Epic, an online library for kids aged under 12, for US\$ 500 million. Singapore-based Great Learning, an online professional and higher education company, for US\$ 600 million. Toppr, an after-school learning platform, for US\$ 150 million.
June 2021	Classplus	EdTech start-up Classplus raised US\$ 65 million in a Series C round led by Tiger Global Management.
April 2021	UpGrad	UpGrad is an online higher education company. It offers over 100 courses in collaboration with global universities. It raised US\$ 120 million from Temasek.
April 2021	Doubtnut	Doubtnut, a K-12 EdTech platform, has raised approximately US\$ 30 million from SIG Global and Lupa Systems. Existing investors Sequoia Capital India, Omidyar Network India and Waterbridge Ventures also participated in the Series B round.

Source: www.ibef.org

5. Conclusion

Based on the research and findings of this paper, it can be concluded that the market for online education in India is set to grow big. Many EdTech companies like Unacademy, Byju's, Catalyst Group and UpGrad are functioning effectively in this sector and providing useful content and courses designed as per the user's needs through various online channels. Further, successful government initiatives like e-basta, Swayam portal, MOOC courses and Digital India have all contributed to building an initial base for more comprehensive future plans. The National Education Policy 2019 is expected to roll out soon which will lead to

more digitisation and technology upgradation in the educational sector. Also, it has been observed from the data that the outbreak of coronavirus has only sped up the process of the paradigm shift and adoption of online modes of teaching and learning.

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