INTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY
Monthly Peer-Reviewed, Refereed, Indexed Journal
Volume - 8, Issue - 4

ISSN(O): 2456-6683
[Impact Factor: 7.148]
April - 2024

IJRCS

DOIs:10.2017/IJRCS/202404020 --:-- Research Paper / Article / Review

A study of the Productivity Dynamics of Online Tutoring Apps in India: A Comprehensive Analysis

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Abstract: *Apps for online tutoring have been revolutionary in India's educational system, providing individualized and easily available instruction. Apps for online tuition have become very popular in India since they are easy to use and convenient. Students can customize their learning experience to meet their unique needs by choosing from a variety of subjects and tutors, as well as having the freedom to schedule lessons at any time. Online tutoring apps are a great tool for students who want to improve their education because of their ability to provide individualized instruction that can result in increased productivity and higher academic results and have a vital contribution towards digital education in India. This study uses secondary sources of data to provide a thorough examination of the productivity of online tutoring applications in India and investigates how these apps affect user engagement, academic performance, and educational outcomes. We investigate the main elements determining the productivity of these apps, such as content quality, educational techniques, technological infrastructure, and socio-economic issues, drawing on existing literature, government reports, industry studies, and user evaluations.*

Key Words: *Online tutoring apps, productivity, educational outcomes, digital education in India.*

1. INTRODUCTION:

India's education system has undergone a change because to the rise of online tutoring apps, which provide students with new opportunities for learning and skill development. Due in large part to the devastation caused by the COVID-19 pandemic over the past two years, online learning has become the new standard in education systems across the globe, including in India. Students in India and around the world have adapted to new teaching methods and approaches. While it initially appeared difficult to adjust to these new technologies, online tutoring platforms and applications made the transition easier, which in turn helped to foster the development of online tutoring apps in India. E-tutoring, often known as online tutoring, is becoming a more and more common educational tool, especially in India. With the development of technology, online tutoring offers a flexible and affordable way for students and teachers to communicate around the clock. Self-paced online tutorials provide students a range of learning options, including webinars, live classes, and other digital materials. The emergence of blockchain, AI, cloud computing, and data analytics has enhanced online tutorial student participation and the quality of the learning process.

Research shows that the use of educational apps has increased by 217% in the past year. The Indian education market is expected to reach INR 360.3 billion by 2024, with a CAGR of 43.85%. The internet based primary and secondary education market is expected to reach approx. INR 124 BN by 2024, with a CAGR of 46.48%. The growth of online tutorials is driven by the demand from tier second and tier third cities. The increasing technology and infrastructure in India are promoting the use of digital payment methods, which is expected to reach approx. INR 95 BN by 2024. Overall, online tutorials are playing a significant role in changing traditional teaching methods and becoming an important part of education institutes in India.

Impact of Covid-19 on Education:

The change in pedagogical delivery systems is though new to the students but is equally in engaging for the learners, as studying through the use of mobile phones, laptops and tablets makes the process of learning more interesting, the reason being the use of visual graphics by teachers to explain complex concepts which are a little bit difficult to explain in normal modes of teaching. Responding to the significant increase in demand, many online learning platforms have made

their services available free of cost. For example, EdTech platforms like Byju's after announcing their free live classes have experienced at 2X increment in the no. of pupils using their product, acc. to Byju's CEO, Byju Raveendran. Moreover, Tencent classroom, meanwhile, has been used extensively since mid-February after the Chinese government instructed a quarter of a billion full-time students to resume their studies through online platforms. This resulted in the largest "online movement" in the history of education with approximately 7,30,000, or 81% of K-12 students, attending classes via the Tencent K-12 Online School in Wuhan. [1]

2. LITERATURE REVIEW:

In recent years, there has been a significant growth in the use of technology for education in India. Researchers have explored the impact of educational applications on students' learning and have noted several key findings.

1) Wessam Al Chibani (2014) studied the effectiveness of online and one-to-one tutoring in a writing centre and found that students who utilized these methods showed improved performance and grades compared to those who relied on traditional classroom instruction.

2) Kristen Diliberto-Macaluso and Alan Hughes (2016) examined the use of mobile apps to enhance student learning in Introduction to Psychology and found that the excessive use of internet and mobile devices has led to the widespread adoption of online educational apps. They also noted that these apps engage students and promote active participation in the learning process.

3) Dr. Yatendra Pal and Ms. Riddhi Agarwal (2017) also explored the use of educational apps in the classroom and found that these apps have a significant impact on the schooling system, helping students understand and learn concepts more effectively. These apps extend learning and provide students with the opportunity to learn at their own pace.

4) Ms. Vaishnavi Khandelwal and Dr. Robi Augustine (2019) further emphasized the growth of eLearning and noted that the widespread access to the internet has led to the development of numerous educational programs for instructional purposes. Both students and teachers prefer using online tools to teach and learn, thanks to the advancement of technology.

5) Sruthi Palliyalil and Dr. Sandeepa Mukharjee (2020) also explored the impact of technology-based personalized learning, specifically examining the case of the Byju's learning app, one of the largest and most valuable Ed-tech businesses in India. The authors noted that Byju's has transformed the educational landscape in India, attracting over 3 million annual subscribers.

3. RESEARCH OBJECTIVES:

1.Study the current state of online tutoring apps operational in India.

2.Identify how mobile applications are being used in India to change conventional education into modern education.

3.Analyse the expansion of online tutoring apps in India.

4.Examine chances and difficulties that online tutoring applications in India face.

4. METHOD:

This paper is based on descriptive and analytical methods and is based on secondary research. The conclusion of this report is limited to the literature available from different sources. The data used is secondary of nature and is obtained from various educational websites, news articles, blogs, and some research papers. This paper focuses on the *productivity of tutoring apps in India.* The paper also acknowledges that the transition to online learning can be difficult for some students, particularly those who do not have access to technology or a stable internet connection. The paper provides that the government and private sector should work in harmony with each other to bridge the digital divide and to conform that all students have access to online education. Additionally, the paper suggests that online tutorials should be designed to accommodate students with different learning styles, such as visual, auditory, and kinesthetic learners.

[1]NewVision, https://www.newvision.co.ug/articledetails/79268?cv=1 , (last visited Feb. 8, 2023)

5. DISCUSSION:

CURRENT STATE OF EDUCATIONAL APPS IN INDIA

Since a considerable period, the amount of time, there are many educational apps operational in India, catering to a wide range of educational needs and levels. These apps can be classified into the following categories:

a. Test Preparation Apps: There are many apps that offer test preparation material for various entrance exams such as JEE, NEET, CAT, etc. These apps provide study material, mock tests, and practice questions to help students prepare for these competitive exams.
b. Language Learning Apps: With the increasing importance of English proficiency in India, there has been a surge in the popularity of language learning apps. These apps offer courses in English as well as other foreign languages such as French, German, etc.
c. Skill-Based Learning Apps: There are several apps that offer courses on specific skills such as coding, data analysis, photography, etc. These apps offer interactive courses through video lectures, quizzes, and assignments.
d. K-12 Learning Apps: These apps provide interactive learning material for students in primary and secondary school levels, with features such as video lectures, quizzes, and assessments.

SHIFT FROM CONVENTIONAL EDUCATION TO MODERN EDUCATION

In India, the conventional educational education systems are being transformed into modern educational structures in the different ways:

1. Personalized Learning: Mobile applications have made it possible to provide personalized learning experiences to students.
2. Easy Access: Mobile applications have made education more accessible to students who may not have access to traditional educational resources. According to a report by IAMAI and Nielsen, rural India accounted for 43% of the total internet user base in India in 2019.
3. Cost-Effective: Mobile applications have made education more affordable for students. This has democratized education and made it accessible to a wider section of society.
4. Interactive Learning: Mobile applications have made learning more interactive and engaging. This has resulted in improved retention and recall of information.
5. Remote Learning: Due to the COVID-19 pandemic, schools and universities across the country have shifted to online classes, and mobile applications have played a crucial role in this transition. Acc. to a report by RedSeer Consulting, online education revenue in India is expected to reach $3.5 billion by 2022, driven by the pandemic-induced shift to online learning.

EXPANSION OF EDUCATIONAL APPS IN INDIA

The expansion of educational apps in India has been remarkable over the past few years. With the advent of smartphones and affordable internet connectivity, more and more students are turning to mobile apps to supplement their learning. Here is a detailed analysis of the expansion of educational apps in India, along with the latest data and sources:

1. *Market size and growth:* Acc. to a report by RedSeer Consulting, the Indian online education market is expected to grow from $2 bn. in 2020 to $7 bn by 2025, at a CAGR of 28%.
2. *Popular educational apps:* Some of the popular educational apps in India include Byju's, Unacademy, Vedantu, Toppr, and Simplilearn. Byju's, which started as a coaching center in 2011, has now become the most valued edtech company in India, with a valuation of $16.5 billion.
3. *Funding and investments*: The Indian edtech sector has attracted significant funding and investments in recent years. According to a report by Venture Intelligence, the edtech sector in India raised $2.2 billion in funding in 2020, up from $553 million in 2019.

CHALLENGES TO GROWTH OF EDUCATIONAL APPS IN INDIA

Despite the remarkable growth of Tutoring apps in in India, there are still some challenges that exist and that need to be addressed:

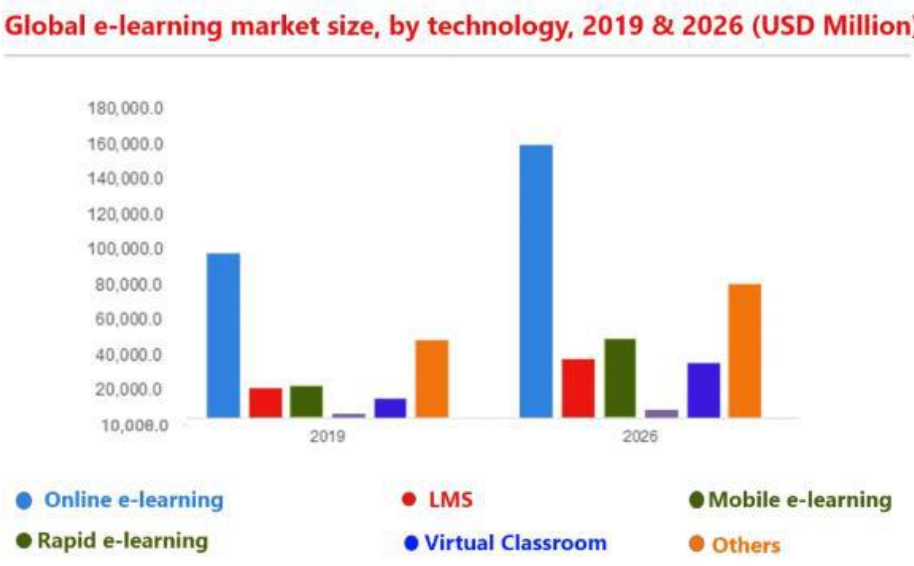
1. *Limited access to technology*: Despite the growing internet penetration in India, a significant proportion of the population still lacks access to digital devices and reliable internet connectivity. According to the latest data from the National Statistical Office (NSO), only about 42% of households in India have internet access, and only 11% have a computer.
2. *Infrastructure challenges:* In addition to limited access to technology, inadequate infrastructure poses a significant challenge to e-learning adoption in India. According to the 2018-19 report of the District Information System for Education (DISE), only 57% of schools in India have electricity connections.
3. *Language barriers:* According to the 2011 Census of India, about 41 percent of the population speaks Hindi, followed by Bengali (8 percent), Telugu (7 percent), and Marathi (7 percent). Therefore, e-learning platforms need to develop multilingual content to cater to a broader audience.
4. *Inadequate teacher training:* According to a 2019 study by NCERT, only 15% of teachers in India feel confident about using digital resources in the classroom.
5. *Lack of awareness:* A 2020 survey conducted by Brainly, an online learning platform, found that 48% of Indian students preferred traditional classroom learning over e-learning, and 47% were unsure about the effectiveness of e-learning.

EFFECT OF COVID-19 ON LEARNING IN INDIA

The COVID-19 pandemic has impacted the education sector in India, and online learning has emerged as a key tool for continuing education during these unprecedented times. The ways in which COVID-19 has affected online learning in India are as follows:

1. *Rise in Online Learning Platforms:* With the closure of schools and colleges due to COVID-19, online learning platforms have seen a surge in demand. As per a report by RedSeer Consulting, the online education market in India is expected to reach $5.7 bn by 2025, growing at a CAGR of 39% between 2020 and 2025.
2. *Adoption of Digital Infrastructure:* The Ministry of Education launched the PM eVidya programme, to promote e-learning and has also launched the DIKSHA platform.
3. *Increase in Internet Penetration:* The pandemic has led to an increase in internet penetration in India, which has facilitated online learning. Acc. to a report by IAMAI, the number of internet users in India is expected to reach 900 million by 2025.
4. *Challenges Faced by Students*: Such as lack of access to digital devices and internet connectivity, difficulty in adapting to the online mode of learning, and lack of personalized attention from teachers.
5. *Impact on Education Equity:* The pandemic has also highlighted the existing education inequities in India. Students from disadvantaged backgrounds are more likely to face difficulties in accessing online learning due to lack of resources. The government has attempted to address this issue by providing digital devices and internet connectivity to students from economically weaker sections of society.

6. FINDINGS:



Ways To Enhance Productivity of Online Tutoring Apps In India

Online tutoring apps have been gaining popularity in India in recent years. However, to increase their productivity, the following are the possible ways to augment the productivity of tutoring apps in India.

1. *Personalized learning experience:* Online tutoring apps can increase their productivity by providing a more personalized learning experience to students. According to a report by Deloitte, AI-based personalized learning can improve student engagement and increase their academic performance by up to 30% (Source: Deloitte India).
2. *Quality Content:* According to a report by KPMG India, content quality is a critical factor that influences student engagement and retention (Source: KPMG India).
3. *Live Tutoring:* Online tutoring apps should also provide live tutoring sessions to students. These sessions can be conducted by subject matter experts who can provide personalized attention to students and clarify their doubts in real-time.
4. *Gamification:* Online tutoring apps can increase their productivity by incorporating gamification elements into their platform. Gamification can make the learning experience more engaging and fun for students. According to a report by GamEffective, gamification can improve learning outcomes by up to 40% (Source: GamEffective).
5. *Mobile Optimization:* Online tutoring apps should optimize their platform for mobile devices. According to a report by App Annie, India is the largest mobile app market in the world in terms of downloads (Source: App Annie).

Initiatives By Govt. To Supplement The Growth Of Online Tutoring Apps In India

The Government of India has taken several initiatives to develop online tutoring apps for students. One of the most significant initiatives in this regard is the *SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) program.*

SWAYAM is an online platform brought by the Ministry of Education, Government of India, in 2017. The platform provides free access to online courses from various universities and educational institutions in India. These courses cover a wide range of subjects and levels, including undergraduate, postgraduate, and diploma courses.

Apart from SWAYAM, the Government of India has also launched several other initiatives to promote online tutoring in the country. Some of these initiatives include:

1. *DIKSHA*: It is a national digital infrastructure for teachers, providing them with access to various learning resources, including e-books, videos, and audio content. The platform also includes a section on online tutoring, which provides teachers with resources to develop their online teaching skills.
2. *ePathshala*: It is an online platform that provides access to educational resources, including textbooks, audio, and video materials, for students from Class 1 to Class 12. The platform also includes interactive content, quizzes, and assignments to help students enhance their learning experience.
3. *National Digital Library of India (NDLI)*: It is a digital library that provides access to millions of books, academic papers, and other learning resources. The platform also includes a section on online tutoring, which provides access to videos, lectures, and other resources to help students improve their academic performance.

7. CONCLUSION:

Availability of tutoring mobile applications have significantly transformed the education landscape in India, bridging the gap between conventional education and modern education. They have made education more accessible, affordable, and interactive, and have enabled personalized and remote learning. The Indian online education market is expected to continue to grow, driven by the adoption of mobile applications for learning.

The expansion of educational apps in India has been fueled by the growing demand for online education, especially during the COVID-19 pandemic. The market size and user base of online education in India are expected to grow rapidly in the coming years, with many new players entering the market.

Despite all the growth and increasing productivity of online tutoring apps in India, there are certain lacunas to be filled. Therefore, to increase the productivity of online tutoring apps in India, a personalized learning experience for the learners, providing high-quality content, live tutoring, gamification, and mobile optimization are some of the strategies by which the desired goals can be achieved. By providing these features, online tutoring apps can improve student engagement, retention, and academic performance, thereby increasing their productivity.

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