iJRASET
International Journal For Research in Applied Science and Engineering Technology



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

**Volume:** 11 **Issue:** IV **Month of publication:** April 2023

**DOI:** https://doi.org/10.22214/ijraset.2023.50759

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538*
*Volume 11 Issue IV Apr 2023- Available at www.ijraset.com*

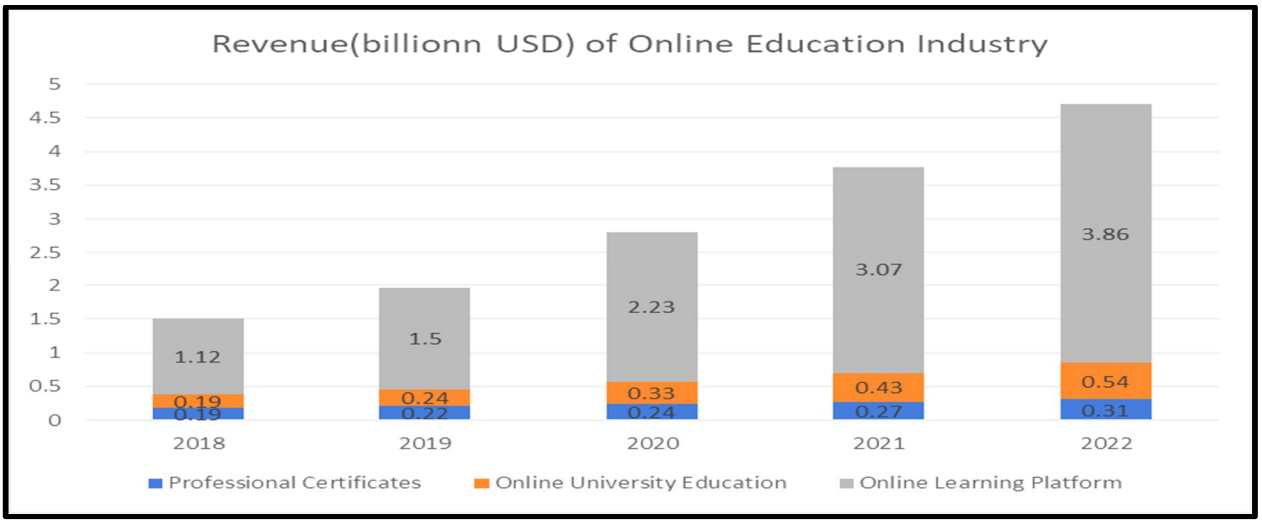
# Paradigm Shift of Digital Education Systems in Indian Education Industry

Mr. Vivek Gupta[1], Dr. Richa Tiwari[2], Devansh Ojha[3], S. Varun[4], Dharun Sankar R[5], Nithish Kumar TS[6], Sanjeev Bahadursha[7]
[1, 2, 3, 4, 5, 6, 7]*Centre for Management Studies – JAIN Deemed to be University, Bengaluru, 560027*

***Abstract:*** ***The fast adoption of digital technology in the Indian educational system has resulted in a paradigm change in recent years. This research paper aims to study the changing landscape of digital education systems in India and its impact on the education industry. The paper draws on an extensive literature review and associated data analysis to provide insight into the key drivers and challenges of this paradigm shift.***
***The paper also delves into the challenges and limitations of the digital education system in India, including issues related to accessibility, affordability, quality, and equity. It addresses the digital divide, socioeconomic disparities, and unequal distribution of digital infrastructure that hinder the widespread deployment of digital education systems in the country.***
***Furthermore, the research paper explores the potential benefits of digital education systems in India, such as increased access to quality education, personalized learning experiences, and improved outcomes. better learning outcomes. It also discusses emerging trends in digital education, including the use of artificial intelligence, virtual reality, and gamification, which are changing the way education is delivered and consumed in India. In summary, this research paper presents a comprehensive overview of the paradigm shift of digital education systems in the Indian education sector. It highlights the dynamics, challenges, benefits, and trends associated with the adoption of digital technologies in education. The findings of this study contribute to the existing database on digital education and provide valuable insights for policymakers, educators, and stakeholders to shape the future of education in India.***
***Keywords: Digital education systems, Indian education industry, E-learning, Online learning***

## I. INTRODUCTION

The Indian education sector has undergone a major paradigm shift in recent years in the digital education system. Digital education has emerged as an essential component of contemporary education due to development of technology.
The use of online learning platforms is one of the most significant changes to India's digital education systems. Students can use these platforms to learn from home, access educational resources, and participate in online forums and discussions.
The increased use of digital tools and technologies in classrooms is another significant shift. Technology is now being used by teachers to improve their teaching methods, create interactive lessons, and provide students with personalized learning experiences.
Below Chart shows the revenue earned by Online Education Industry from 2018 – 2022




©IJRASET: All Rights are Reserved 

Additionally, the application of gamification and virtual reality in education has received a growing amount of attention, making learning more engaging and interactive. Student participation and retention have increased as a result.

In addition, the pandemic has accelerated the adoption of digital education in India, with lockdowns and social distancing measures driving schools and colleges to switch to online learning. The country's digital education systems have expanded as a result of this.

However, India's digital education systems still face obstacles such as the digital divide, a lack of technology access, and the need for effective teacher training.

In general, the paradigm shift in the Indian education industry's digital education systems has the potential to change how students learn and make education more accessible and interesting for everyone.

## II. LITERATURE REVIEW

(Sun, A., & Chen, X, 2016) highlights the importance of well-designed course content, motivated interaction between the teacher and students, and well prepared and fully supported educators in accomplishing successful online instruction. They contend that successful online instruction is essential to improve the quality and cost of higher education and increasing student enrolment and retention. They provide practical ideas and valuable insights for colleges and faculty looking to transition to online teaching, and the ongoing discussion of effective strategies which is essential for continued improvement in this field.

(Renu Gupta, et al, 2021) emphasizes the importance of a balanced approach to education that considers the advantages and disadvantages of both online and offline learning modes. The difficulties faced by students, parents, and teachers during the sudden shift to online training are highlighted, including issues related to attentiveness, understanding of subjects, academic integrity, increased responsibility, and screen time for youngsters. The survey highlighted the need to address these difficulties to guarantee the best possible educational outcomes for all.

(Pravat Kumar Jena, 2020) The outbreak of the coronavirus pandemic has had a major impact on training, forcing many organizations around the world to close their campuses and switch to internet learning. In India, the pandemic has closed schools and colleges, affecting about 32 million students. Despite these difficulties, higher education in India has responded proactively and taken steps to ensure coherence in teaching, learning, research and serving society during the crisis. This article examines some of the new learning methods, perspectives, and patterns that have emerged as a result of the pandemic, and may provide future information. This paper outlines post-coronavirus patterns that may shape better approaches to teaching and learning in higher education in India, and proposes ideas that may help guide educational practices in the context of the pandemic.

(Deepika Nambiar, 2020) investigated teachers' and students' perceptions and experiences of online education in the Indian education system during the coronavirus pandemic. This research focuses on identifying factors that contribute to teacher and student satisfaction with online instruction. The study found that quality and timely interaction between students and professors, availability of technical support, structured online instructional modules, and changes to mandatory hands-on instruction were more likely to impact teachers' and students' willingness to online instruction. We found it to be a key factor in making sure we were satisfied. The authors suggest that implementing effective online teaching methods requires a comprehensive approach that addresses the technical and educational challenges of online learning, including the need for hands-on instruction. increase. Overall, this research provided insight into the challenges and opportunities of online learning in the light of the coronavirus pandemic in India.

(Nastaran Peimani and Hesam Kamalipour, 2021) explored student perceptions of blended online learning during the coronavirus pandemic, particularly in relation to the postgraduate Master of Urban Design program at Cardiff College in the United Kingdom. Research shows that students appreciate eye contact during online learning, but also emphasizes the importance of being able to see others. They also note the difficulties in facilitating effective synchronous communication between different colleagues in small group online reading workshops. Most respondents preferred attending online lectures to pre-recorded lectures and found online feedback on the formation process and synchronous interim assessments helpful in reflecting their project progress and development prior to the final review. The document provides valuable insights for educators designing blended online learning conditions in the post-coronavirus era and provides guidance for improving the use of digital technology in urban design teaching and pedagogy.

(Yi Yang, et al, 2004) focused on testing students' perceptions of two universities and one community college about the quality of online education based on their own online learning experiences. They found the flexibility, cost-effectiveness, availability of e-study, easy internet connection, and well-designed classroom interface as positive experiences. On the other hand, the negative student experience is due to late feedback from the instructor, no technical support from the instructor, lack of self-regulation and self-motivation, feelings of isolation, monotonous teaching methods and poorly designed course content.

(Hussein Hakeem Barzani, Sami, 2021) investigated Kurdish EFL university students' perceptions of online and on-campus education, including preferences, effectiveness, learning satisfaction, and challenges. Most of the students had a negative attitude towards online education, preferred on-campus education, and felt that online education did not provide sufficient learning satisfaction. Various challenges have been identified, including external and internal factors.

(Muhammad Nashir and Roudlotun Nurul Laili, 2021) The Coronavirus pandemic has caused a huge change in the schooling area, requiring a progress from face to face to online learning.

This study is meant to portray English teacher's perceptions towards this shift from offline to online teaching during the lockdown time frame brought about by the Coronavirus episode. The review populace consisted of 50 English teachers from Senior High Schools in Banyu Wangi.

The discoveries uncovered that English teacher had mixed perception towards online teaching. The lack of flexibility and control over students' learning activities was distinguished as a critical component influencing student's commitment. Moreover, teachers felt that online teaching increased their workload compared to face-to-face teaching, as they required additional time to operate appropriate online learning media and design engaging lessons to increase student's motivation and interest in English.

(H.D.C. Priyadarshani, 2021) aimed to find out how university teachers at the Faculty of Special Needs, Faculty of Education, Open University, Sri Lanka view online education during the COVID-19 pandemic and find that students are satisfied with online courses and receive adequate help from teachers, but they do not believe that conventional classroom teaching will be replaced by online courses.

Teachers are having a hard time teaching online due to lack of adequate preparation as well as technology and network challenges. To meet these challenges, teachers and students must periodically attend training and development programs offered by schools or the government. It is essential to test and overcome barriers to the adoption of online learning.

(Dhawan, 2020) found that India's current education system relies heavily on traditional face-to-face learning methods, although some institutions use blended learning. However, the Covid-19 outbreak has forced educators to switch to online teaching methods overnight.

This article discusses the importance of online learning, performs his SWOT analysis of e-learning in times of crisis, and examines the growth of his EdTech startups during pandemics and natural disasters. This article also includes suggestions for academic institutions on how to overcome the challenges of online learning.

(Ameer P.A and Vineeth K, 2020) said that global Covid-19 pandemic has caused widespread confusion and destruction across various sectors, including education. However, one positive impact has been the accelerated growth of the EdTech industry, with statistics indicating a 26% increase in user visits and significant growth in paid users and traffic for leading EdTech companies during Covid-19.

### *A. Objectives Of The Study*

*1)* To understand the sudden shift of the education industry to the digital platform during and post pandemic.
*2)* To investigate and identify the quality of interaction between students and faculty during pandemic lockdown in India.
*3)* To explore the utilization of digital infrastructure in academic discourse and their effectiveness in learning during the covid 19 lockdown of Indian universities and colleges.
*4)* To investigate the potential future development of the education industry post pandemic for adoption of hybrid learning.

## III. RESEARCH METHODOLOGY

### *A. Method Used To Research*

Causal Research Design

This type of research design is used to test hypotheses about cause-and-effect relationships.

### *B. Data Collection Method*

Simple Random Sampling Method

*1)* Researchers used simple random sampling techniques to survey the entire population for specific sociological and psychological variables.
*2)* In our case, the sample population takes into account the perspectives of people working in the education industry (surveys, professors from various institutions).
*3)* Researchers are primarily interested in assessing characteristics of the population, followed by 19 closed-ended questions.

*C. Tool Used*

*1)* Questionnaire

*a)* The structured questions helped in timely analysis of large samples.

*b)* Questionnaire was used for collecting demographic info, attitudes, knowledge, and opinions of people based on factors like:

- Education in India
- Digital Education
- Technology used in Education
- Covid – 19 impacts on Education

Close – ended questions were used in the Questionnaire.

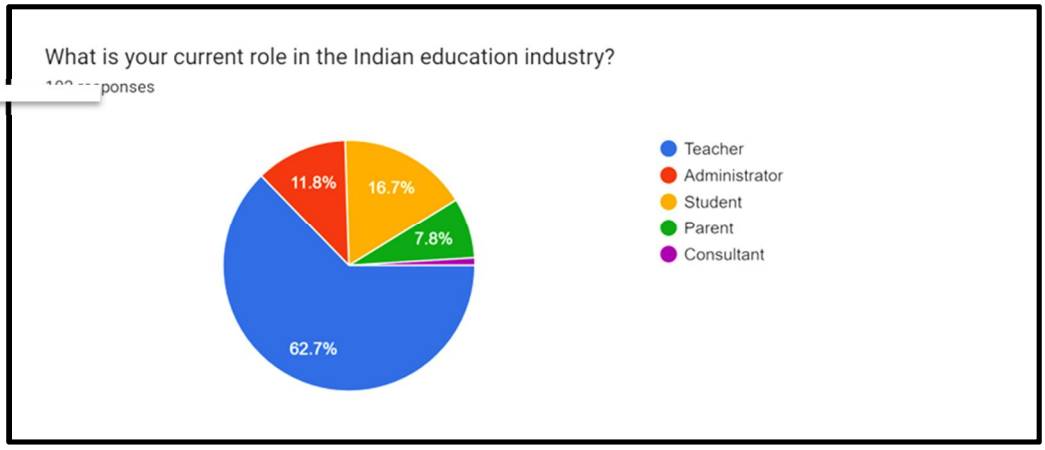
*2)* Demographics

In our case the demographics mainly involves people working in the education industry i.e., Teachers, Professors, Assistant Professors, Associate Professors and Consultants within India.

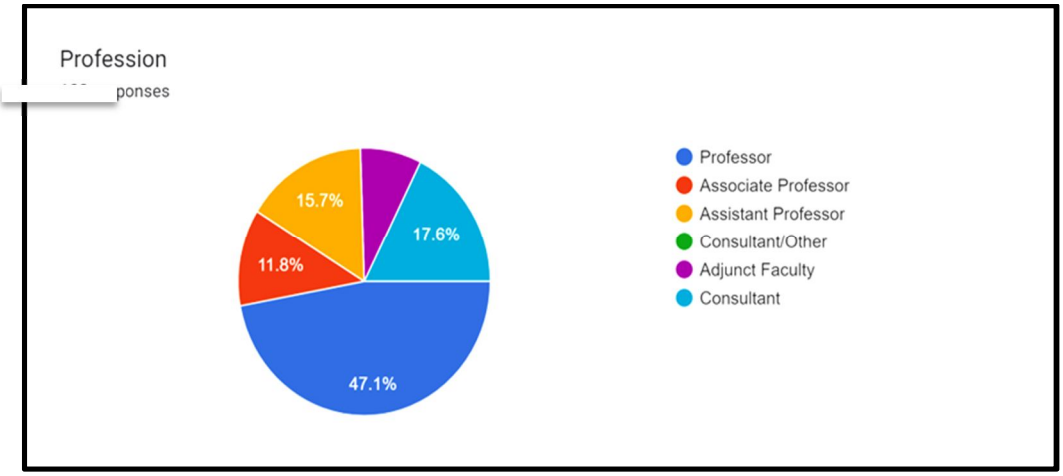
## IV. DATA ANALYSIS AND INTERPRETATION

The current study's participants were teachers from different universities in Bengaluru. A total of 140-150 questionnaires were floated. A sample of 123 usable responses was obtained from a variety of undergraduate, postgraduate, and various other professors. The participants were asked to describe themselves in reference to a 5-point Likert-type scale, with anchors ranging from 1 (Extremely important) to 5 (Not important).

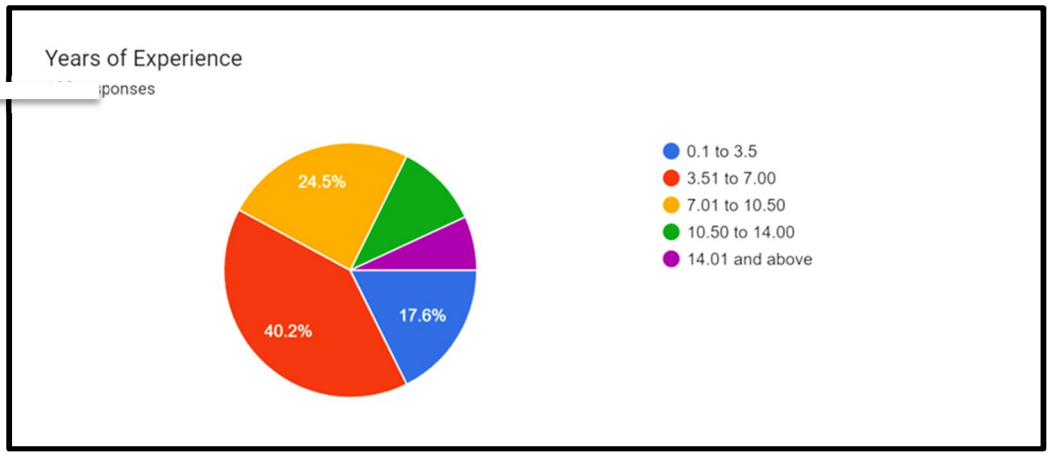
In this research paper, 123 responses were analyzed to investigate the demographic characteristics of the participants. It is important for researchers to carefully consider their recruitment strategies and sampling methods to ensure that their study findings are representative of the population they aim to study.



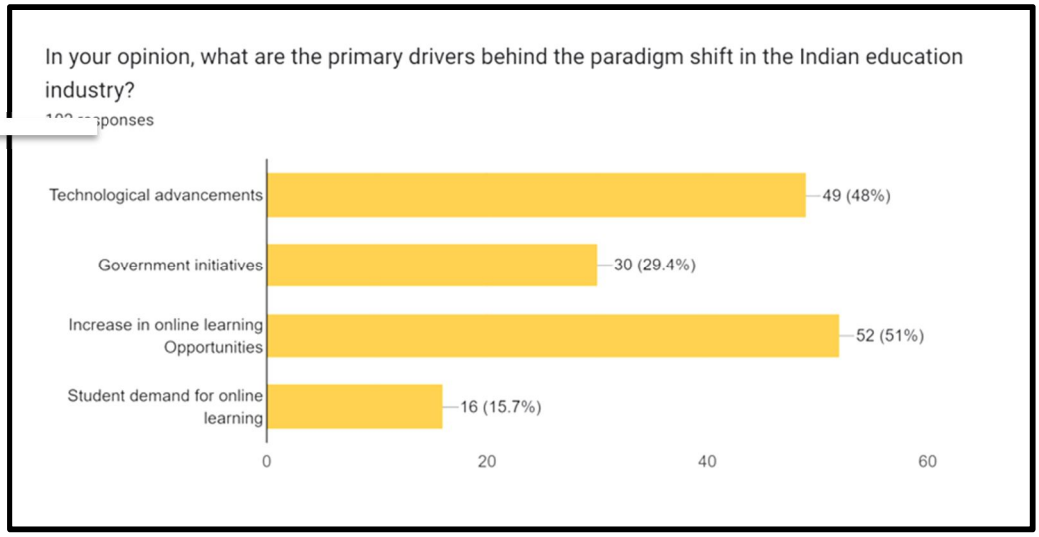

*1)* 62% of the respondents were teachers, while 16% were students.



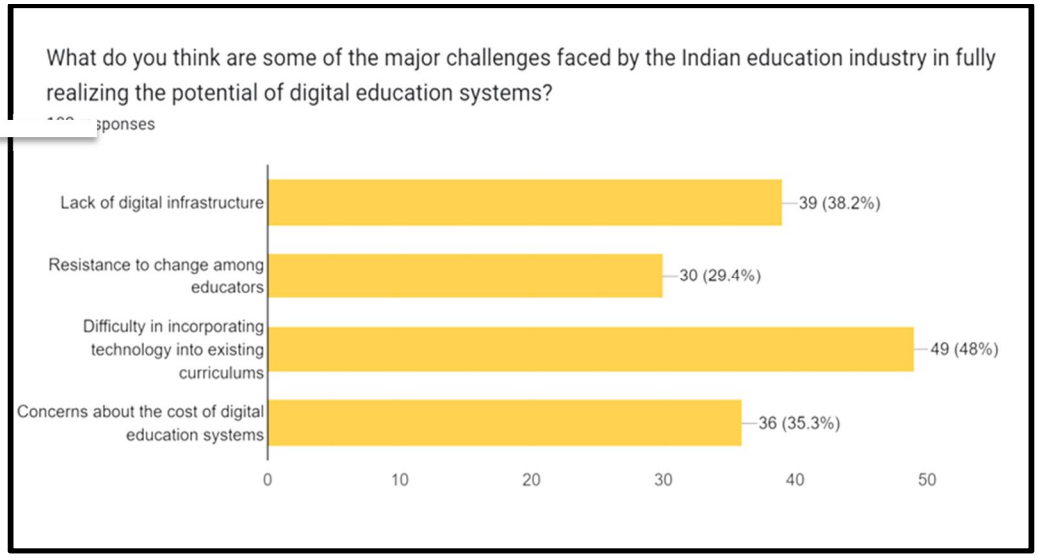
*2)* 47.1% were professors, 17.6% were consultants.



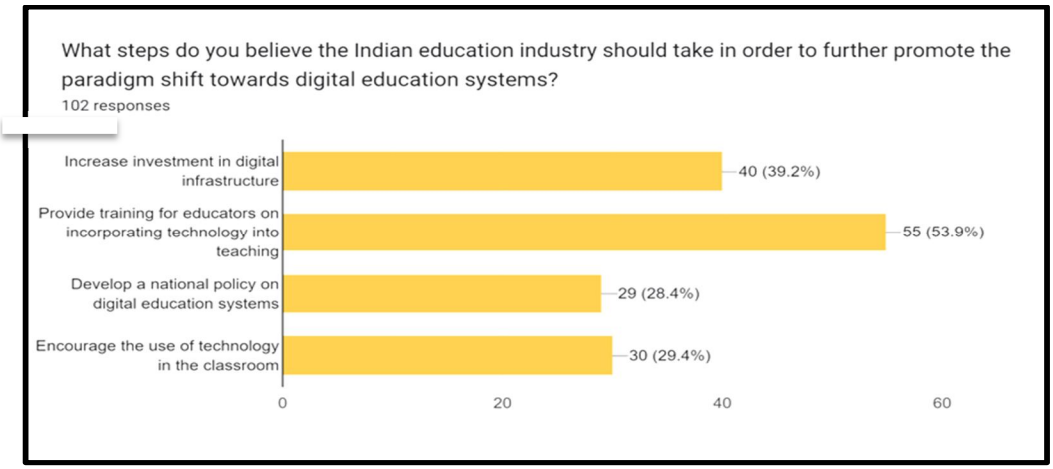

*3)* 57.8% have experience of less than 7 years, while around 18% have experience of more than 10.5 years.



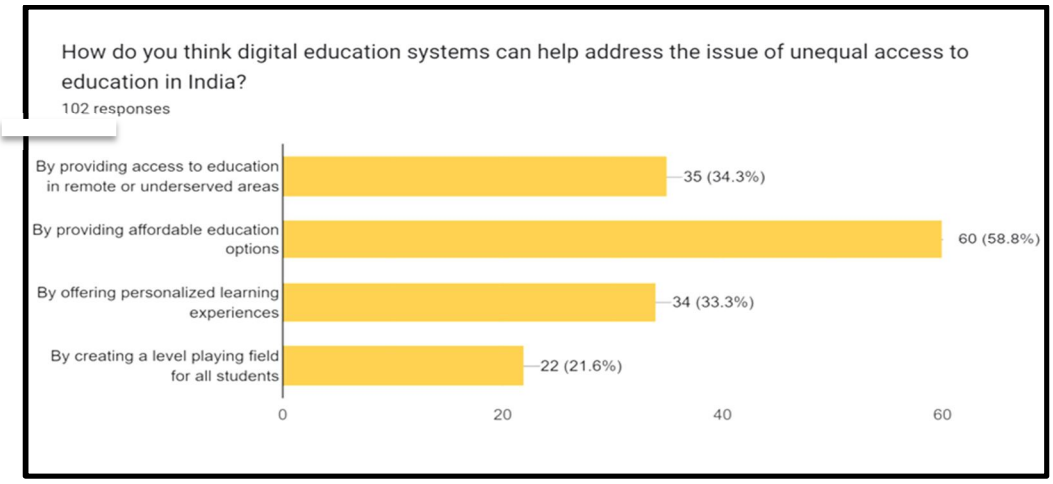

*4)* According to the respondents the main drivers behind the shift are 'Increase in online learning opportunities' and 'Technological Advancements'.



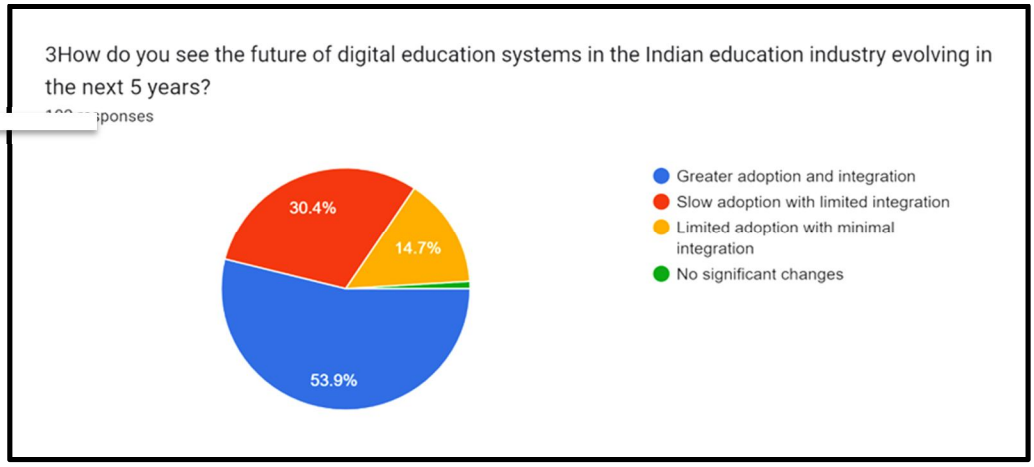
*5)* According to the respondents the major challenges faced by the Indian education industry in fully realizing the potential of digital education systems are 'Difficulty in incorporating technology into existing curriculums' and 'Lack of digital Infrastructure'.




*6)* According to the respondents, the steps the Indian education industry should take in order to further promote the paradigm shift towards digital education systems are 'Provide training for educators on incorporating technology into teaching' and 'Increase investment in digital infrastructure'.




*7)* According to the respondents the digital education systems can help address the issue of unequal access to education in India by 'By providing affordable education options' and 'By providing access to education in remote or underserved areas.



*8)* 53.9% of the respondents believe there will be greater adoption and integration in the future, while 30.4% believe there will be limited adoption and minimal integration.

In this research study, the dependability of the questionnaire was assessed by computing Cronbach's alpha score. A total of 123 responses were obtained from the participants who completed the 19-item questionnaire. The Cronbach's alpha score obtained for the questionnaire was 0.7, indicating acceptable internal consistency reliability. This score suggests that the questions in the questionnaire are measuring the same construct and are reliable for assessing the targeted construct.

The data is a correlation matrix with 19 variables [How important do you think it is for the Indian education industry to adopt digital education systems?(ADE), In your experience, the access to technology in educational institutions in India should be advancing(ATE), In my opinion usage of digital learning platform teaching materials is important(DLP), In my opinion I believe that digital education systems can be significant for student engagement and motivation in the classroom(DLPN), Digital platforms are significant being an interactive medium for students as a result of their performance(PMN), I believe that the Indian education industry has undergone a paradigm shift in its approach to digital education systems during the pandemic times(ADLP), I have personally observed leading changes in the way digital education systems, hence this should be adopted as managerial practice in institutions(CDLP), I believe that the Indian education industry has undergone a paradigm shift in its approach to digital education systems during the pandemic times(SDLP), In my opinion, the adoption of digital education systems has significantly impacted the quality of education in India(QES), I feel that the available tools of web-based learning needs to significantly improvise to suffice demands of online education system in the educational institutions(IQES), I feel it is necessary to train faculty to be confident in using digital education systems for teaching or learning purposes(CON), I feel it is important for faculty to have continuous sessions on advancements of technology to gather information for online learning(LED), I feel it is important to seek assistance when facing learning problems(AST), I feel it is important for faculty to generate their own learning progress(GLP), I feel that it important to ban the other online activities when learning online (instant messages, Internet surfing)(JAM), A continuous improvement plan/control lifecycle is significant to correct mistakes from online learning(CIP), I feel it's necessary to plan for motivation on faculty to learn new things in online(MOV), Are you confident in using online tools (email, discussion) to effectively communicate with others(CONt), Do you feel confident in posting questions in online discussions(CONq)]. The values in the matrix represent the correlation coefficients between the variables.

Some observations based on the correlation matrix are:

*a)* The correlation coefficients range from -0.184 to 1.000, indicating a mix of positive, negative, and no correlations between variables.

*b)* There are several variables that have relatively high positive correlations (above 0.5) with other variables. For example, DLPN is positively correlated with DLP, PMN, QES, CON, CONt, and CIP; and CONt is positively correlated with CON, CIP, AST, and IQES.

*c)* There are also several variables that have relatively low or negative correlations (below 0.3) with other variables. For example, JAM has a low correlation with most other variables, and CONq has low or negative correlations with most variables.

Table of correlation

| . | ADE | ATE | DLP | DLPN | PMN | ADLP | CDLP | SDLP | QES | IQES | CON | LED | AST | GLP | JAM | CIP | MOV | CONt | CONq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADE | 1.000 | | | | | | | | | | | | | | | | | | |
| ATE | 0.404 | 1.000 | | | | | | | | | | | | | | | | | |
| DLP | 0.530 | 0.357 | 1.000 | | | | | | | | | | | | | | | | |
| DLPN | **0.561** | **0.524** | **0.640** | 1.000 | | | | | | | | | | | | | | | |
| PMN | 0.522 | 0.452 | **0.688** | **0.585** | 1.000 | | | | | | | | | | | | | | |
| ADLP | **0.557** | 0.389 | 0.538 | 0.523 | **0.504** | 1.000 | | | | | | | | | | | | | |
| CDLP | 0.524 | 0.398 | 0.418 | 0.495 | 0.374 | 0.227 | 1.000 | | | | | | | | | | | | |
| SDLP | 0.490 | **0.514** | 0.358 | 0.382 | 0.409 | 0.408 | **0.490** | 1.000 | | | | | | | | | | | |
| QES | 0.546 | 0.389 | **0.581** | **0.552** | 0.476 | 0.443 | 0.355 | 0.396 | 1.000 | | | | | | | | | | |
| IQES | 0.445 | 0.194 | 0.563 | **0.573** | **0.593** | **0.484** | 0.300 | 0.392 | **0.596** | 1.000 | | | | | | | | | |
| CON | 0.546 | 0.249 | **0.614** | **0.559** | 0.395 | 0.335 | 0.405 | 0.397 | **0.603** | 0.469 | 1.000 | | | | | | | | |
| LED | 0.445 | 0.308 | 0.483 | 0.411 | 0.437 | 0.399 | 0.350 | **0.509** | 0.529 | **0.639** | 0.489 | 1.000 | | | | | | | |
| AST | 0.473 | 0.152 | **0.745** | **0.554** | **0.555** | **0.493** | 0.226 | 0.284 | 0.522 | **0.607** | **0.655** | 0.431 | 1.000 | | | | | | |
| GLP | 0.392 | 0.465 | 0.186 | 0.291 | 0.243 | 0.158 | **0.590** | 0.502 | 0.421 | 0.233 | 0.453 | 0.364 | 0.070 | 1.000 | | | | | |
| MOV | 0.445 | 0.303 | 0.238 | 0.249 | 0.237 | 0.330 | 0.416 | **0.532** | 0.313 | 0.348 | 0.304 | **0.527** | 0.249 | **0.403** | 0.125 | 0.377 | 1.000 | | |

## V. FINDINGS AND DISCUSSIONS

The impact of online learning on students' course outcomes: Evidence from a large community and technical college system
From a large controlled dataset from a national framework containing 34 local and technical colleges, the authors used instrumented variable methods to estimate the impact of online and face-to-face instructional delivery on student course performance. Did. The distance between each student's place of residence and the university campus serves as an indicator of their likelihood of enrolling in the online portion of a particular course. Our analysis yielded negative estimates of online learning for both course duration and course grade, contradicting the notion that there are no significant differences between online and face-to-face student outcomes within the university environment. Both two-year and four-year colleges and universities should focus on assessing and addressing the quality of online coursework before committing to additional online learning development. (Shanna Smith Jaggars, et al, 2013)

*1) Online Learning Before COVID-19: Face-to-Face Versus Online Learning*

Prior to the outbreak of COVID-19, previous versions of online education were hampered by the tools available to content creators. The ability to create and deliver online training, despite its simplistic and imperfect delivery methods, is highly accessible to students and provides a cost-effective and scalable solution for trainers and employers. It was revolutionary. Numerous online platforms and authoring tools were available, including discussion forums and live streaming platforms.
Despite this, the researcher continued to read headlines like "Online learning is not as effective as classroom training," indicating that the "bad reputation" of online learning has persisted before covid 19. When making the switch to online education, it is important not to get distracted by how learning is delivered and what we might think are its limitations. Even though they are no longer in the classroom, the best teachers continue to deliver excellent instruction, and the average teachers continue to provide subpar instruction online. There was a disconnect felt between the teacher and the student Up until very recently before covid 19, online content required a coder or tech builder. Educators lost control of the material in many ways, technology has taken control of the material, making creative teaching methods and individual teaching styles secondary. (Kollias, 2020)

*2) Teachers' Response to the Sudden Shift to Online Learning during COVID-19 Pandemic: Implications for Policy and Practice*

The outbreak of the COVID-19 pandemic and eventual closure of schools around the world in March 2020 has had a significant impact on the educational experience of all students. Lessons and reaching were organized and carried out from the educator's home. Funded technology investments for years remained mostly idle behind closed doors in school buildings, with little time to prepare and organize the movement of the necessary equipment from schools to teachers' homes. The questionnaire was designed to obtain information directly from kindergarten, primary and secondary Maltese teachers. The purpose of this study was to find out how teachers responded to the sudden switch to online learning after all schools were closed as a result of the COVID-19 pandemic. Primary and secondary school teachers in Malta were asked to share their experiences of online teaching and learning during the COVID-19 pandemic. Only 5% of teachers said this was their first experience with online teaching, but 35% had received training to help them adapt to the new situation. (Farrugia, 2020)

*3) Online Teaching and Learning of Higher Education in India during COVID-19 Emergency Lockdown*

The World Health Organization (WHO) received the first report of pneumonia of unknown origin in Wuhan. Lockdowns have affected nearly every industry and have had a major impact on the economy in most countries. The purpose of this study is to explore and identify the quality of knowledge, practice, usage and understanding among students and faculty of online courses during his COVID-19 pandemic lockdown in India. A web-based survey was used to collect responses to a series of questions from various higher education institutions. During COVID 19, the paradigm shift from traditional face-to-face classroom instruction to online instruction has revealed a shortage of internet facilities and technical support. Due to the accumulation of several COVID-19 cases in the third week of March, lower-educated educational institutions and their activities were closed. To contain his COVID-19 illness through a series of measures, university authorities, in consultation with the health department, ordered a temporary suspension of academic operations. For uninterrupted learning, the Ministry of Human Resources Development (MHRD) has advised universities to offer online courses. The number of students enrolled in the Indian tertiary education system ranks third in the world after China and the United States. Since India's independence, the number of universities, colleges and other educational institutions has skyrocketed. The announcement of online courses offered by the university was quickly made by the government. The paradigm shift from traditional face-to-face teaching methods to online teaching presents technological challenges that hinder the effectiveness of the teaching and learning process. To learn more about the effectiveness of the teaching and learning process, a survey was conducted with various stakeholders across all higher education courses.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

Most students agreed that morning hours between 8:00 am and 12:00 pm are ideal for online classes. Students felt that certain topics covered online during the emergency lockdown should be revised in face-to-face classes once institutions reopen. The purpose of the recommendations is to increase the effectiveness of the online learning and educational process. (Girisha Lakshman Naik, et al, 2021)

*4) Impact of Novel Coronavirus (COVID-19) in Indian Higher Education*

Due to the 40-day coronavirus lockdown (first and second phase), across all institutions, approximately 10 million hours of learning will be impacted in total, which will be quite difficult to make up. cover. Through its announcement, the University Grants Committee has asked all institutions to maintain online courses whenever possible and to use ICT tools that can be used during the course. academic language. College and university advisory boards also require faculty members to use various online tools to communicate with students. Many open access tools, which many universities and colleges have used to reach students in remote areas, are available to support this effort. For example, many faculties at Gauhati University, Assam have used a variety of online resources, including live online lessons on Skype, academic lectures and classes recorded on YouTube, lectures prepared by NPTEL, Google Classroom, Zoom, Easy Class workshops, etc. Live online lessons at home have become a reality with the availability of high-speed mobile networks. Many examples of how to effectively engage students with various online applications have emerged. Due to poor network connectivity, a significant number of students are unable to take advantage of these opportunities, even though the overall course attendance rate is less than 80%. (Dutta, 2020)

*5) Students' Perception And Preference For Online Education In India During Covid -19 Pandemic*

The COVID-19 pandemic has forced educational institutions around the world to close, putting school schedules at risk. To stay academically active, most educational institutions have turned to online learning platforms. For a developing country like India, where technical constraints such as equipment suitability and bandwidth availability pose a serious challenge, questions regarding standardization The equipment, design, and effectiveness of online learning lines are still not well understood. Through an online survey of 307 students, we focused on understanding the perceptions and preferences of agricultural students about online learning. To create an effective online learning environment, the study investigated students' preferences for different online course features. To manage the program during this pandemic, most respondents (70%) are willing to take online courses. Most of the students prefer to study online using their smartphones. This study revealed that students prefer recorded lessons with a quiz at the end of each lesson to make learning more effective. According to the students, while broadband connectivity issues in rural areas make it difficult for students to use e-learning initiatives, the adaptability and convenience of online courses are not limited. online makes it an attractive option. The insights in this article may be helpful in designing the curriculum for the new normal in the agricultural education system where many courses are practiced and the full transition to Online mode may not be possible. Instead, a hybrid mode may need to be developed. (T. Muthuprasad et al., 2021)

*6) How A Sudden Change To Remote Education Impacted College Students' Self-Regulated Learning*

This study examines how the sudden transition to online education has affected college students' engagement in self-directed learning and the challenges students face during the COVID-19 pandemic- 19 global. The implications of these findings emphasize the importance of learning context and social connections on college students' ability and willingness to engage in self-regulating learning strategies and behaviors. . In mid-spring 2020, the COVID-19 pandemic forced many post-secondary institutions to quickly switch to online instruction after closing their facilities. The living and learning environment of university students has undergone unprecedented and unexpected changes. Even if the courses are conducted online, it is unlikely that the guidelines established for online teaching will be fully followed in this case. The views of students who accidentally switched to urgent online learning were the subject of this qualitative investigation.

The knowledge, skills, and attitudes that students rely on to manage and regulate various aspects of their education include self-directed learning in online higher education. Examples of these components include a student's motivations, thoughts, actions, and context. Consequently, most models of self-regulating learning are based on the idea that students must control how they use learning strategies, motivation and emotional functioning, the learning environment, and support systems. their social support. Ideally, self-directed online students can "establish a productive work environment" and "have positive motivational beliefs about their abilities, the value of their learning, and the factors that influence their learning." affect learning". However, not all tasks or situations require self-regulation. In an online learning environment, students with a high level of confidence are more likely to succeed.

Consistent evidence has been found that self-efficacy for online learning positively impacts student motivation, strategies, and academic achievement. However, during the global COVID-19 pandemic, students have lost some control over their learning environment and choices. Based on survey responses from 199 college students who have just completed an online course, this study shows that instructor attendance behavior positively impacts student satisfaction in online courses. online, possibly because online students ease isolation. (Lauren C. Hensley et al., 2022)

*7) Negative Impacts from the Shift to Online Learning During the COVID-19 Crisis*

In the spring of 2020, in-person instruction was abruptly replaced by virtual instruction due to the COVID-19 pandemic. We use two complementary frameworks for differences in differences, one that explains the fixed effects of students and the other that explains the variation of the inner instructor depending on whether students begin Spring 2020 classes online or in person. The research estimates how this change will affect community college students in Virginia's academic performance. The author finds that there are only slight negative effects (three to six percent) on course completion with either strategy. According to our findings, faculty experience teaching an online course does not alleviate the negative effects. The transition to online instruction has minimal long-term effects, according to an exploratory analysis. (Kelli A. Bird et al., 2022)

*8) Growth Of Edtech Market In India: A Study On Pre-Pandemic And Ongoing Pandemic Situation*

In times of crisis, technology allows people to connect with each other and even work from home, eliminating the need for face-to-face interaction. It has moved the device to a digital platform and has profound implications for traditional teaching and learning methods in the classroom. Using forecasting techniques, an economic snapshot of a segment in the education, digital learning industry, over three time periods:

before hatching, during hatching and after hatching. has been studied to predict future growth potential and generate benefits.

BYJU is a Bangalore-based multinational Indian scientific and technical organization. It is an educational tutorial application which uses a freemium business model. BYJUs offer digital animated films ranging from 12 to 20 minutes. BYJU's is a cutting-edge new business that has done well in the market. Byju's, a Silicon Valley education technology company, was able to raise less than $100 million from Silicon Valley stakeholders and experts, exceeding the capital of $ 10 billion, thanks to the Covid-19 epidemic. Byju's quickly closes the gap and becomes the country's most valuable start-up after digital payment company Paytm, which is worth $ 16 billion. In addition, Byju transformed into a decacorn in two years after becoming a unicorn in 2018.Byju's enrollment increased by more than 3 percent last year to more than 57 million. As India fights the coronavirus epidemic, a significant portion of the 180 billion dollars spent on education will be spent online to adjust to the new reality. This presents a chance for educational technology companies like Byju's. After the Byju educational reception, experts believe that this will make the company the largest Indian unicorn. Byju's learning application is providing all students with free content in response to school closures caused by Covid-19. (Devasish Hazarika et al., 2022)

*9) Educational Technology in the Post Pandemic Era*

The paper investigates the importance of educational technology in the post-pandemic era, with the recent outbreak of the coronavirus pandemic pending. Educators are now using technology to teach, connect, and work with students, parents, and colleagues wherever they are. The concepts of educational technology, educational technology and the future, educational technology support, and digital learning are all considered.

The study concluded that educational technology is very important and can help with life, as several changes have been observed in different aspects of life including education sector, banking sector, etc. goods, etc. With the outbreak of the current pandemic, schools, hospitals, and all aspects of life are shifting their focus and thinking towards technology. Even medical school immediately converted the entire preclinical curriculum to an online format, including online lectures, webcasts, virtual group discussions, video conferencing, and online learning platforms. line. Life is not expected to end during or after the pandemic. Changes are expected and during the coronavirus pandemic. (Wordu, 2021)

## VI. CONCLUSION AND RECOMMENDATIONS

This research aimed to investigate the sudden shift of the education industry to the digital platform during and post pandemic. The study used a simple random sampling method and collected data from Bangalore, with the sample size of 123 respondents. The findings of the study show that the online education industry in India has witnessed a significant shift towards digital learning, driven by the increase in online learning opportunities and technological advancements.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

As a result, students in India have greater access to high-quality education, regardless of their location or socioeconomic background. Moreover, the rise of online education has opened new avenues for educators and education providers, making education more flexible, personalized, and accessible.

With the continued growth of the online education industry in India, it is likely that digital learning will become an increasingly important part of the education landscape, helping to transform the way students learn and teachers teach.

The Indian education industry has the potential to revolutionize the way education is delivered by embracing digital education systems. By investing in digital infrastructure and providing training for educators on incorporating technology into teaching, the industry can promote a paradigm shift towards a more flexible, personalized, and accessible form of education. This can not only improve the quality of education but also ensure that students have access to education regardless of their geographical location. Therefore, it is crucial for the education industry to adapt to the changing times and leverage technology to enhance the learning experience.

Digital education systems have the potential to address the issue of unequal access to education in India by providing affordable education options and access to education in remote or underserved areas. By embracing digital education, India can ensure that all students have access to quality education, regardless of their geographical location or socioeconomic background. The implementation of digital education systems can pave the way for a more equitable and inclusive education system in India, leading to a brighter future for generations to come.

However, there are still major challenges to be addressed in fully realizing the potential of digital education systems in the country. The difficulty in incorporating technology into existing curriculums and the lack of digital infrastructure are some of the major hurdles that need to be overcome. Therefore, there is a need for concerted efforts from all stakeholders, including policymakers, educators, and technology providers, to address these challenges and leverage the benefits of digital education for the benefit of students and the education sector.

The online education industry in India has the potential to revolutionize the way education is delivered and accessed. By adopting the right strategies and making the necessary investments, the industry can enhance the quality of education and increase access to education for millions of students across the country. Moreover, online education can help bridge the gap between urban and rural education, making education accessible to students in remote areas. Additionally, the growth of the online education industry can also contribute to the country's overall growth and development by creating new job opportunities and promoting the use of technology in education. Therefore, it is crucial for the government, education providers, and other stakeholders to collaborate and invest in the online education industry to harness its potential and shape the future of education in India.

There are several industry recommendations that can be made based on the findings of this research. Firstly, the Online education providers must develop effective digital learning strategies to meet the growing demand for online education in India. The industry should focus on creating user-friendly and engaging learning platforms that promote active learning and collaboration.

The industry must invest in digital infrastructure to provide reliable and high-speed internet connectivity to students in remote or underserved areas. Additionally, online education providers should ensure that their platforms are accessible on a range of devices, including smartphones, laptops, and tablets.

One of the key advantages of digital education is that it can provide affordable and accessible education options to students across the country. The industry must focus on creating affordable and accessible online courses that cater to the needs of different segments of society. Online education providers must collaborate with traditional education providers, including schools, colleges, and universities, to enhance the quality of education and improve learning outcomes. By working together, they can leverage the strengths of both models and provide a comprehensive education experience to students.

Online education providers must ensure that their courses meet the required quality standards and are accredited by relevant authorities. They should also regularly evaluate their courses to improve the learning outcomes and incorporate student feedback.

The industry must focus on promoting awareness and adoption of online education among students, parents, and educators. They can achieve this by conducting awareness campaigns, offering free courses, and showcasing the benefits of online education.

In conclusion, the study found out that India has witnessed a significant shift toward online learning and the covid 19 pandemic has impacted the learning in India. The rise of online learning has opened new avenues for the educators to make the education more flexible, personalized, and accessible.

The Indian education sector should invest more on the digital infrastructure as it can improve the quality of service provided. Digital education in India can solve the problem of unequal education in India. There is scope for further research in this area, and it is recommended that future studies can investigate students' perception on learning online through various educational platforms like coursera, Udemy.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

## VII. LIMITATIONS

### A. *Lack of Motivation in Students*

The next interactive and immersive teaching method for students today must be online learning. But the opposite is evident from the results. Students are no longer motivated to return to the learning site due to the multitude of texts, quizzes, routine learning tasks and MCQs. Because there is no interaction between students and teachers during online sessions, many complain about the lack of enthusiasm. The e-learning method does not yet have a solution to the student's need for physical interaction to stay engaged. Schools should give students interesting lessons.

### B. *Infrastructural Problems*

There are still infrastructure needs even though e-learning does not require large facilities, large classrooms, chairs, boards, blackboards, or chalks. There is a significant need for computers, suitable software, uninterruptible power, and high-speed Internet connections. If one cannot afford to buy it privately, this infrastructure is usually made available to the public through public libraries in industrialized countries. However, only a small percentage of the population in developing countries like India, Pakistan, Bangladesh, and many others have access to this type of infrastructure.

### C. *Digital Literacy and Technical Issues*

Even if the younger generation is proficient with computers, this does not equate to being digitally savvy. It is quite difficult to learn how to effectively use many software when using an e-learning system. In addition, students need to be aware of their rights and obligations in the online learning environment as well as the appropriate online communication protocol. A larger problem is the ongoing technological difficulties teachers and students face on these sites. The learning process is often interrupted because solving these problems often requires the help of technology.

### D. *Lack of In-person Interaction*

Social animals include humans. The idea that people would always be curious to interact and learn more about each other was the basis for the growth of the Internet. But a virtual interaction cannot be psychologically the same as a physical interaction. There are times when the direct presence of the teacher and other students creates an unrepeatable virtual atmosphere. The physical model also maintains order when students are unable to turn off the webcam and fall asleep. Teachers can pay more attention to individual students in physics classes. However, the engaging online learning modules that students can take can be helpful.

### E. *Lack of EdTech and Online Learning Options for Special Needs of Students*

Students with special needs are the group of students that progress in online learning that has been completely overlooked. Students with special disabilities need a more personalized and hands-on approach to instruction. Although technology has advanced significantly, teachers or professionals should still be available at all times to help students complete their tasks. Students with special needs have fallen behind their peers in academic endeavors due to these issues.

### F. *Course Structure and Quality*

It is believed that the modernization of the curriculum and the organization of the course will be the result of the transition to online learning and other modern teaching methods. Unfortunately, that did not happen. Even after moving to the Internet, organizations continue to use their outdated course structure and content. Students think back to college in general when organizations like Google and Tesla decide not to require college as a condition of employment. Better content on these topics is available for less money or even for free online through platforms like YouTube, Google, Skillshare, Udemy and others. Furthermore, these platforms allow users to choose their own subjects, thus improving the adaptability of the education system. This will cause educational institutions to rethink their entire teaching philosophy.

### G. *Lack of Accredited Degrees from Top Universities*

Learning is less important than branding in education. Where you study is more important than what you study. The e-learning industry has yet to convince prominent higher education institutions to offer their courses through online/distance learning methods in a market where brand recognition is very high. important. Most of the time, online degree programs are not accredited and are not accepted by employers or other institutions. Although the government and higher education institutions have yet to accept online learning as a valid way to earn a professional degree, schools have accepted it.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

### *H. Abundant Distractions, Lack of Discipline*

Online attendance has dropped dramatically due to repetitive technical challenges, bandwidth issues, and boring conferences. Most students find online learning tedious and often lament that they are not motivated to complete the course. Even professors frequently lament the lack of resources to engage students, leading to a loss of interest on both sides. The quality of education is often degraded due to the lack of accountability of online teaching methods. Combined with the liberal use of laptops and cell phones during class, distractions have become endless, often taking away attention during class.

## VIII. FUTURE SCOPE

Online education has been on the rise in India especially in recent years due to the COVID-19 pandemic. The future of online education in India looks bright as more and more students turn to online learning. Here are some potential future scopes of online education in India:

### *A. Increase Accessibility*

Online education has the ability to reach students in remote areas where traditional education is not possible. With the increasing availability of Internet services, online education can provide students with access to quality education no matter where they are located.

### *B. Personalized Learning*

Online education platforms can provide a personalized learning experience for students, tailored to their specific learning needs and pace. Through the use of technologies such as artificial intelligence and machine learning, online education platforms can analyze student data and make recommendations for personalized learning.

### *C. Cost-Effective*

Online education can be more cost-effective than traditional education because it eliminates the need for physical infrastructure such as classrooms and buildings. This can make education more affordable and accessible to more students.

### *D. Skill-Based Learning*

Online education can provide skills-based learning opportunities that are particularly useful for training and professional development. This can help fill the skills gap in India's workforce and lead to more job opportunities.

### *E. Global Exposure*

Online education can expose students to global perspectives and experiences. Online courses and programs offered by universities and international organizations can provide students with a global educational experience without the need to travel.

There is no denying that online education was the only sensible option for students to continue learning and prevent the education system from collapsing completely. Now that we know that online and offline modes must strike a balance for a well-rounded learning experience, it is now necessary to comprehensively address a number of concerns critical to development. a more flexible system for the future. A balanced strategy needs to be found to get children to school safely and to optimize ICT to help them learn faster. However, there is still a long way to go before the digital learning platform is accessible to everyone. When schools reopen, schools will be instrumental in bridging the gap created by online education.

Overall, the future of online education in India looks bright, with the potential to provide more accessible, personalized, and affordable education to students across the country.

## REFERENCES

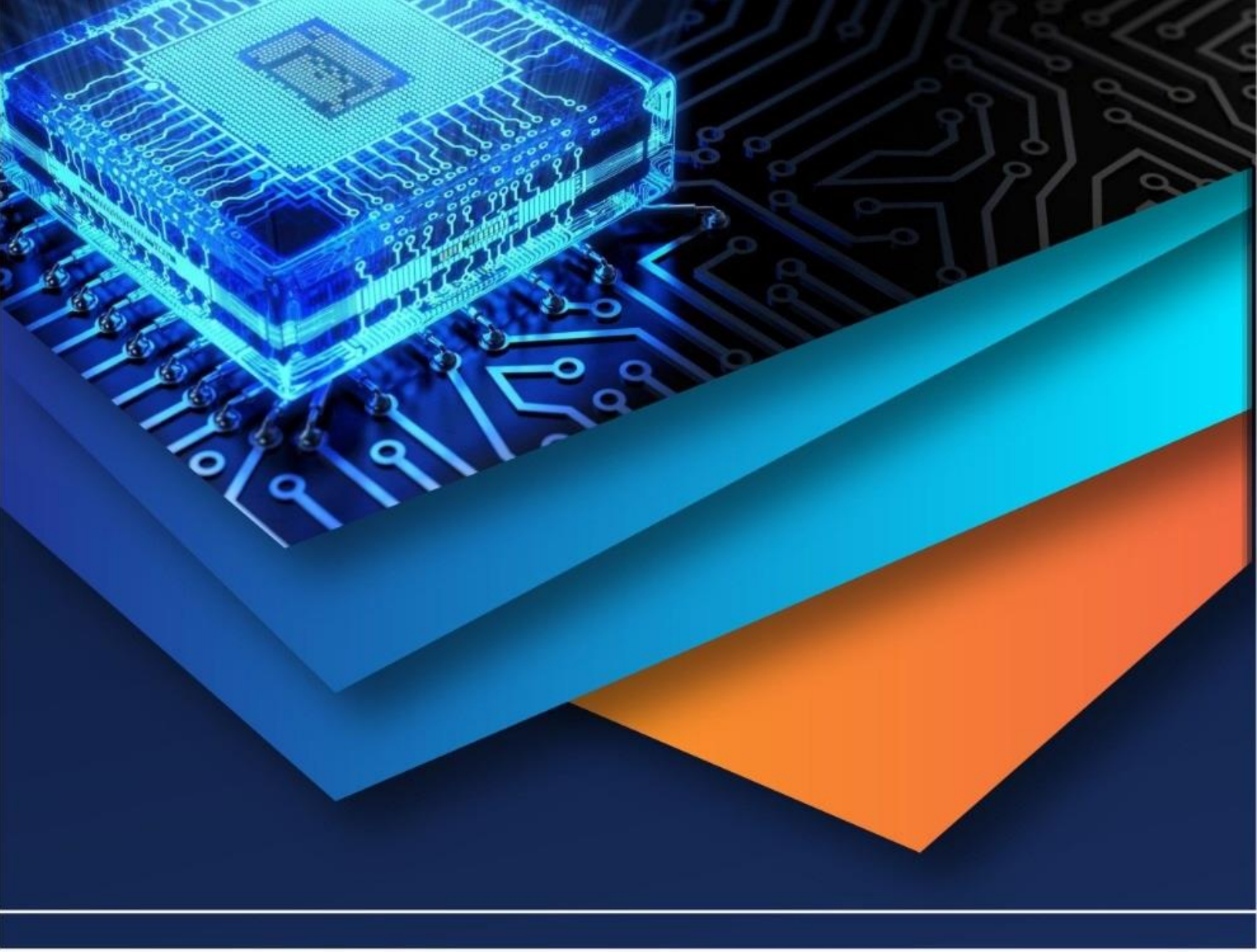
[1] Devasish Hazarika et al. (2022). Growth of Edtech Market in India:A Study on Pre-pandemic and Ongoing Pandemic situation. Journal of Positive School Psychology. Retrieved from https://www.journalppw.com/index.php/jpsp/article/view/3005/1971

[2] Dutta, D. A. (2020). Impact of Digital Social Media on Indian Higher Education: Alternative Approaches of Online Learning during COVI... International Journal of Scientific and Research Publications. Retrieved from https://d1wqtxts1xzle7.cloudfront.net/63408662/ijsrp-p1016920200523-49582-om6ipo-with-cover-page-v2.pdf?Expires=1666785585&Signature=FgNWj7iSypyWAb0iEbo5GvEw-yCFz2mjY25z01iIaS1o7B8XMM1S3hHbQPd6dJGR-do~UM1Ikm8VKLInlZQ9-QdV7sRAT5eZbodzKK76wz4tQCek2HK8vsoeHq

[3] Farrugia, L. B. (2020). Teachers' Response to the Sudden Shift to Online Learning during COVID-19 Pandemic. Malta review of educational research. Retrieved from https://www.um.edu.mt/library/oar/bitstream/123456789/66444/1/MRER14%282%29A4.pdf

[4] Girisha Lakshman Naik, et al. (2021). Online Teaching and Learning of Higher Education in India during COVID-19 Emergency Lockdown. Pedagogical Research, 14. Retrieved from https://files.eric.ed.gov/fulltext/EJ1287167.pdf

[5] Kelli A. Bird et al. (2022). Negative Impacts From the Shift to Online Learning During the COVID-19 Crisis: Evidence from a Statewide Community College System. Annenberg Brown University, 57. Retrieved from https://www.edworkingpapers.com/sites/default/files/ai20-299.pdf
[6] Kollias, N. W. (2020). Online Learning Before, During and After COVID-19: Observations Over 20 Years. ICELW Paper. Retrieved from https://online-journals.org/index.php/i-jac/article/view/16779/7849
[7] Lauren C. Hensley et al. (2022). "This weird time we're in": How a sudden change to remote education impacted college students' self-regulated learning. Journal of Research on Technology in Education. Retrieved from https://www.tandfonline.com/doi/full/10.1080/15391523.2021.1916414
[8] Shanna Smith Jaggars, et al. (2013). The impact of online learning on students' course outcomes: Evidence from a large community and technical college system. ScienceDirect. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S0272775713001039
[9] T. Muthuprasad et al. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. ElSEVIER. Retrieved from https://reader.elsevier.com/reader/sd/pii/S2590291120300905?token=E06CEB26A69922036927BEFFB12BFEF9387EC2B02884210F2B3774F6FEFBF9C29F88C9A413B7446EA875763CE579FD37&originRegion=eu-west-1&originCreation=20221024163903
[10] Wordu, N. C. (2021). Educational Technology in the Post Pandemic Era. RIK International Journal of Social Sciences and Humanities. Retrieved from https://www.researchgate.net/profile/Nkasiobi-Wordu/publication/358131863_Educational_Technology_in_the_Post_Pandemic_Era/links/61f1c1bb5779d35951d880a6/Educational-Technology-in-the-Post-Pandemic-Era.pdf
[11] Ameer P.A and Vineeth K. (2020). Impact of Covid-19 Pandemic on Ed Tech Industry in India: A Multidimensional Analysis. Research Gate. Retrieved from https://www.researchgate.net/profile/Anuja_Sharma5/publication/350386615_Kristu_Jayanti_College_Department_of_Economics_2/links/605cdc2b92851cd8ce693083/Kristu-Jayanti-College-Department-of-Economics-2.pdf#page=17
[12] Deepika Nambiar. (2020). The impact of online learning during COVID-19: students' and teachers' perspective. The International Journal of Indian Psychology. Retrieved from https://d1wqtxts1xzle7.cloudfront.net/63726027/18.01.094.2020080220200624-72658-pmlbpw-libre.pdf?1592989796=&response-content-disposition=inline%3B+filename%3DThe_impact_of_online_learning_during_COV.pdf&Expires=1680543612&Signature=bhViwh2exRa49hxLRQWAws
[13] Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. Journal of Educational Technology Systems. Retrieved from https://journals.sagepub.com/doi/pdf/10.1177/0047239520934018
[14] H.D.C. Priyadarshani. (2021). Teacher's Perception on Online Teaching Method during Covid-19: With Reference to School Level Teachers at Faculty of Education, The Open University of Sri Lanka. International Journal of Education. Retrieved from https://files.eric.ed.gov/fulltext/EJ1287648.pdf
[15] Hussein Hakeem Barzani, Sami. (2021). Students' Perceptions towards Online Education during COVID-19 Pandemic: An Empirical Study. Tishk International university. Retrieved from http://eprints.tiu.edu.iq/526/
[16] Muhammad Nashir and Roudlotun Nurul Laili. (2021). English Teachers' Perception toward the Switch from Offline to Online Teaching during lockdown in the Midst of Covid-19 Outbreak. EDUKATIF. Retrieved from https://edukatif.org/index.php/edukatif/article/view/287
[17] Nastaran Peimani and Hesam Kamalipour. (2021). Online Education in the Post COVID-19 Era: Students' Perception and Learning Experience. MDPI. Retrieved from https://www.mdpi.com/2227-7102/11/10/633
[18] Pravat Kumar Jena. (2020). Impact of Covid-19 on higher education in India. International Journal of Advanced Education and Research. Retrieved from https://www.researchgate.net/profile/Pravat-Jena-3/publication/342277024_Impact_of_Covid-19_on_higher_education_in_India/links/5eeb7d2a299bf1faac5ee8ac/Impact-of-Covid-19-on-higher-education-in-India.pdf
[19] Renu Gupta, et al. (2021). Covid-19 Pandemic and Online Education: Impact on Students, Parents and Teachers. Journal of Human Behavior in the Social Environment. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/10911359.2021.1909518
[20] Sun, A., & Chen, X. (2016). Online Education and Its Effective Practice: A Research Review. Journal of Information Technology Education: Research. Retrieved from https://www.researchgate.net/profile/Anna-Sun/publication/310503884_Online_Education_and_Its_Effective_Practice_A_Research_Review/links/5dea533d299bf10bc3452ad4/Online-Education-and-Its-Effective-Practice-A-Research-Review.pdf?_sg%5B0%5D=started_experimen
[21] Yi Yang, et al. (2004). Students' Perceptions towards the Quality of Online Education: A Qualitative Approach. ERIC. Retrieved from https://files.eric.ed.gov/fulltext/ED485012.pdf



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)