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COVID-19: A Catalyst for Digital Education and Onboarding in India

Kshama Prabhakar Shetty[1]
[1]*Research Scholar, PhD by Research in Management (2020-23)*
Student No. GG19033, LIUTEBM University, Lusaka, Republic of Zambia.

Abstract: The COVID-19 Pandemic has been the greatest challenge ever faced in the history of mankind leading to disruptions in almost every sector. The pandemic has taught us the importance of technology and that digital transformation is the key for resilience and academic continuity. The Education sector in India has undergone a paradigm shift from traditional to online learning with the help of government initiatives. With its own advantages and disadvantages, digital means of learning has been widely adopted and accepted by almost everyone. School going kids, students pursuing higher education, employees looking for upskilling and reskilling through certifications as well as employers onboarding and training their new joiners have become completely digital owing to the social distancing norms and with an intension to contain the spread of the pandemic. This research paper focuses on how the pandemic has acted as a catalyst for digital education and onboarding in our country. It also talks about the benefits, hurdles and challenges faced in its adoption.
Keywords: COVID-19, Digital Education in India, E-Learning, Onboarding, Pandemic, Online Learning

I. INTRODUCTION

The COVID-19 Pandemic has been an eye opener in exposing the reality and vulnerability of the digital and technological infrastructure in our country. It has not only become the ultimate disrupter by driving digital innovations but has also accelerated its adoption in almost every aspect of human life. The situation has compelled everything ranging from meeting, shopping, business transactions and learning to move into the digital space to curb the spread of the pandemic while ensuring business and academic continuity.

The imposition of a nationwide lockdown in our country in the year March 2020, led to the shutting down of schools and universities indefinitely which forced everyone to depend upon the online learning means to avoid academic loss. The education industry was forced to conduct lectures over the web using various tools and platforms for interacting with their students while ensuring safety and following the lockdown rules.

Not just academic institutions, even business entities were forced to operate remotely thus encouraging work from home and digital onboarding and training for new joiners. Businesses that were resilient to adopt this shift had no choice but to shut down their operations leading to surge in unemployment. This created a fear of layoffs amongst employees and gave rise to online certifications and distant learning for upskilling and reskilling. Also, a lot of initiatives and schemes were introduced by the Government to encourage this Digital Transformation in the education sector with the pandemic acting as a catalyst.

A. Research Background

India India has the third largest education system in the entire world after The United States of America and China. Even though digital learning in India was introduced in the year 1985, the widely adopted means of learning before the pandemic was either hybrid or classroom learning. This was mainly due to the traditional mindset that physical or face-to-face learning is more impactful and yields better results in terms of overall understanding and knowledge of a particular subject or topic as compared to online learning.

The pandemic has clearly been a sign of changing times giving everyone a new perspective and outlook at digital education. Several universities started making higher education and certification available through various online platforms. This has enabled students and learners in our country to pursue courses across the globe at a much affordable price point and at the comfort of their own homes. There has been an acceleration in Digital Education with a significant amount of weightage given to distant and online courses and certifications which wasn't the case before the pandemic thus making online learning the new normal.

B. Purpose Of Research

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1) To enlist various online platforms and collaboration tools used and adopted for E-Learning amid the pandemic.
2) To analyze the advantages, disadvantages, effectiveness, and barriers to Digital Education.
3) To study the different initiatives and actions undertaken by the government for facilitating Digital Education.
4) To understand the effectiveness of digital onboarding and training of employees amid the pandemic.

II. REVIEW OF LITERATURE

In his study focusing on online education in India, Zahoor Ahmad Lone (2017) has found that the availability of affordable smart phones and the accessibility of internet to be the major reasons for the growth of online education in India. The use of real time and best in class content and feedback methods along with personalized instructions has encouraged online learning. Another reason that people are opting for digital learning is the comfort of interactive and live learning from anywhere format which has helped in breaking numerous barriers to gaining quality education which was previously bound to classroom learning. There are various free online courses that are available which helps students in finalizing where they actually want to take up that course and understand their area of interest. Online learning gives people an opportunity to plan and fast track their career advancements. Digital learning enhances traditional way of learning by incorporating interactive audio visuals and storytelling which makes it much easier in understanding concepts. Students can opt for courses from universities across the globe and get a chance to learn from prominent industry and business leaders. Social media has also played a pivotal role in enhancing the online learning experience as it makes the students aware about current scenarios, problems and in prospecting job opportunities. There have always been various barriers that have prevented the students from rural India in gaining quality education due to the physical classroom setting. Digital learning has empowered rural India to get quality education by helping them in eliminating hidden costs, giving them access to free online courses and allowing them to complete the courses at their own pace. The online education market in our country is estimated to be around $3 Bn. With the introduction of various schemes and actions taken by the Indian government, online learning has reached new heights. Entranceindia, a Bengaluru based company helps engineering and medical students by providing practice papers for entrance exams. Another example is Simplilearn which is again a Bengaluru based company that offers more than 200 online certification courses in financial management, project management, quality management, etc. Intellipaat, a company started in 2011 aims in providing online and corporate training and self-paced courses for IT professionals. Learnsocial, a Hyderabad based company works as an aggregator by catering to both students and mid-level professionals. Online learning has gained momentum because of the need for reskilling. The skills required today to land into a job are far more as compared to those required a decade ago. The future of digital education in India is quite radiant and ought to witness a drastic growth owing to the “Digital India” vision in transforming and empowering our nation digitally.

M.S.S. Razeeth, R.K.A.R. Kariappe, P. Pirapuraj, A.C.M. Nafrees, U.M. Rishan, & S. Nushrath Ali (2019) in their study comparing E-Learning and Traditional Learning in Higher Education have talked about the technological advancements in Higher Education, differences between E-Learning and traditional learning and the importance of having a blended model comprising of both E-Learning and the conventional system. The major advantage of E-Learning or virtual learning is that students can learn from the comfort of their own homes without having to travel anywhere thereby saving on travelling time and cost. The time that they save by learning online can be utilized for enhancing their knowledge and sharpening their skills. Students can learn at any given time and at their own pace by logging into their learning management system which is something that traditional mode of education does not offer. A major advantage of E-Learning is getting an option to attend two different courses at a given time which makes way for rapid career advancements. If a student faces any kind of challenge in future, it is possible to re-use the E-Learning material with no need of repeating the same lecture again as in the case of traditional learning. Along with this, E-Learning also gives a technological edge to both students and teachers as it requires at least basic knowledge of operating a computer and using the internet. But to opt for online learning, the bare minimum is to have a smart phone or a desktop/laptop with an internet connection. Although there are a lot of chapter quizzes, tests, audio-video materials and discussion forums, a major downfall is that E-Learning helps only in improving theoretical knowledge of a particular subject and fails in enhancing practical knowledge because it requires a physical environmental setting. On the other hand, traditional learning offers face to face interaction between students and teachers helping in the personal growth of students. Along with real-time doubt solving, teachers also motivate the students to learn in classroom setting. Also since classroom learnings have a fixed schedule, it incorporates discipline among students and also avoids any kind of distraction that can happen during E-Learning due to popping up of messages, the urge to use social media or play games. Thus both E-Learning and conventional learning have their own advantages and disadvantages. In order to gain optimal results, both the learning methods must co-exist and a blended system should be practiced.

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Girisha Lakshman Naik, Malteshwar Deshpande, D C Shivananda, C P Ajey, & G C Manjunath Patel (2020) have said that the novel pandemic has created a change in the methodology of education sector from traditional to online in India. This change has been quite seamlessly adopted by the deemed to be autonomous and private universities while it has been quite challenging for public universities. While some universities claimed that they have been successful in carrying out online sessions, some have found challenges in reaching out to students due to the lack of internet access, power cuts and high-end hardware availability and usability. The two methodologies that were followed for online teaching were prerecorded lectures and live sessions. Online teaching and learning have its own pros and cons for both teachers as well as the students. The use of advanced tools can help the students and faculties to get more technology oriented. Students can also re watch the lectures as many times as they please. On the other hand, online teaching lacks face to face interaction and mentoring. There can also be difficulties in using technology and getting a knack of the online system.

The paper talks about a survey conducted for gauging the efficacy of the online teaching-learning system. The participants included students and faculties from various streams like engineering, diploma, medicine, agriculture, management, science, arts, commerce, etc. as well as parents and public residing in rural, urban, talukas, districts and metropolitan cities of Karnataka, Tamil Nadu, Andhra Pradesh and Kerala.

Around 874 respondents became a part of the survey out of which 86.3% felt that the traditional face to face mode of education is any day better than online learning and . When gauging the satisfaction level, 70.4% were not completely satisfied with the online classes due to various reasons like distractions, lack of interaction, difficulty understanding analytical and mathematical subjects, infrastructure availability, etc. Since online teaching is done using various tools and softwares, around 81.7% of the faculty said they use Zoom for conducting the sessions.

That being said, 72% of the respondents said that online teaching-learning doesn't make them curious to know more or to ask questions. Around 36.1%. felt that theoretical courses are more effectively delivered online as they are easy to understand as compared to problematic courses. The most preferable timeslot for conducting online sessions came out to be between 8AM to 12PM as answered as both the faculties and students can start early and finish early giving them the rest of the day for carrying out other activities.

Many of the faculty members felt that there is a need for face-to-face revision of the topics once the school gets re-opened which shows the efficacy of online learning. Not just that placement activities and individual growth has also been hampered in this process according to the faculty members and parents. To increase the efficiency of online education few strategies must be adopted. Internet connectivity and power issues in rural areas that needs to be fixed, online lectures must be made interactive with games, quizzes, animations, lecture contents should be provided prior to the session and students must be advised to go through it before the session commences and the lectures must be made available for further reference of students. Thus, addressing these few concerns can overall enhance the online teaching-learning experience.

III. RESEARCH METHODOLOGY

To address the key research objectives, this research has adopted qualitative method conducted by observing and analyzing already present information. This research framework constitutes of a combination of previous researches and associated work explaining the on the impact of COVID-19 on Digital education and Onboarding and how the pandemic has acted as a catalyst in its adoption. This study employs a descriptive research design to understand the merits, demerits, effectiveness, barriers to digital education, government initiatives and employee e-training and onboarding pattern during the pandemic.

IV. DISCUSSION

A. Digital Education During COVID-19 In India

In the past few years, Digital Education in India has gained an increased momentum and positive reception due to the availability of smartphones and internet connections at an affordable price point. With the outbreak of the COVID-19 pandemic, there has been a rapid shift from traditional to online learning as the only means of maintaining academic continuity during the global emergency was through digital platforms.

This has forced everyone to adopt online learning as the new normal with the pandemic acting as a catalyst in its adoption and acceptance in our country. There are various categories of learners when it comes to digital learning in India and various online platforms both paid and free for supporting these different kinds of learning.

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Fig. 1 Various Digital Education Categories in India

1) Online Learning Tools And Platforms*: Without technology, bridging the knowledge gap would have impossible in a nationwide lockdown situation. The various online learning tools and platforms used by educational institutions and professors in collaborating with the students are listed below:*

a) Zoom
b) Teams
c) WhatsApp
d) Learning Management System

The most widely adopted platforms were Zoom, Teams and Skype which are video conferencing tools allowing one-one and one to many sessions. Thus, teachers were able to cater to many students in one go. Many institutes used WhatsApp as a medium to send the learning material and content and to keep in touch with the parents about their child's performance. Some schools and institutes also had their own Learning Management Systems (LMS) where in the students were given their unique login ID and password to access prerecorded videos, learning material, submitting assignments, and tracking their attendance. Apart from the above listed tools and technologies, the other widely known platforms for various categories and segments of learning are:

e) Online Platforms For K-12
- Byju's
- Vedantu
- Toppr
- Khan Academy

f) Online Platforms For Competitive Exams
- Unacademy
- Testbook
- IndigoLearn

g) Online Platforms For Coding
- WhiteHat Jr
- Coding Ninjas

h) Online Platforms For Reskilling And Upskilling
- LinkedIn Learning
- Coursera
- Simplilearn
- Udemy
- UpGrad

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i) Online Platforms For Language Courses
- Duolingo

With an array of online platforms and courses, students can now choose the best option for themselves all at the comfort of their own homes.

2) Growth Drivers And Merits of Digital Education In India:

a) Penetration Of Internet And Affordable Smart Phones – According to the Digital 2021:India report by Datareportal, India's total population in January 2021 was 1.39 billion out of which there were 1.1 billion Mobile Connections (79% of the population) and 624 million Internet Users (45% of the population). Since the imposition of the nationwide lockdown in 2020, there has been a 47 million increase in the number of internet users (8.2%) and a 23 million increase in mobile connections (2.1%) within a span of one year. The availability of internet and smart phones at an affordable price point and the lockdown acting as a catalyst has been the primary growth driver for Digital education in India.

b) Learn From Anywhere - The biggest advantage of Digital Education is the ease of accessing the courses anywhere anytime. Since the content is consumed using a device like smartphones or laptops and through the internet, it can be accessed from the comfort of our own homes which saves time. Thus, it becomes easier for working professionals to upskill and reskill as they can easily juggle between their working and studying hours.

c) Cost Effectiveness - Digital education is way more cost effective as compared to physical classrooms setting. There are also lot of online platforms offerings courses and certifications free of cost. A lot of people also refer YouTube for learning which is again a free video streaming website. Not just that, since online courses can be pursued at the comfort of our own homes it also saves travelling costs.

d) Plethora Of Course Options That Meet Industry Standards - Today there are many EdTech companies with online platforms offering several courses to choose from. This makes it possible to opt for courses from prestigious universities across the globe. A lot of these courses are tutored by industry experts who have practical exposure and knowledge about the industry which are widely accepted by various organizations.

e) Reuse Of Learning Materials - Whether the lectures conducted online are live or pre-recorded sessions, the videos are available to be reused and accessed on a later date. Even the study material can be downloaded and used whenever required. Thus, this enables students to learn at their own pace so there is no need of repeating the lectures even if someone misses out.

3) Initiatives And Schemes By Indian Government: The Government and Ministry of Education in India has taken up various initiatives to promote Digital Education in our country.

TABLE I

SR NO	GOVERNMENT INITIATIVE	DESCRIPTION
1	SWAYAM	SWAYAM stands for Study Webs of Active Learning for Young Aspiring Minds. It offers school education, out of school education, undergraduate and postgraduate education and proctored examinations for the same which are also available in regional languages.
2	SWAYAM PRABHA	SWAYAM PRABHA is a collection of 34 DTH channels which broadcasts programs related to higher education for both post and undergraduate levels, school education from standard 9^{th} to 12^{th} for students as well as trainings for teachers.
3	NAD	NAD stands for National Academic Depository which is digital storage for all academic awards which can be accessed by both the employers and students. It also digitally verifies the authenticity of the awards to avoid any forgery.
4	NDLI	NDLI stands for National Digital Library of India and was developed by IIT Kharagpur. It is a digital repository of learning materials for all academic levels in multiple languages. It also has materials for research scholars as well as for differently abled students.

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5	NPTEL	NPTEL stands for National Programme on Technology Enhanced Learning and was developed by seven IITs along with Indian Institute of Science, Bangalore. It facilitates online learning through video and web based courses across 23 disciplines.
6	SHODHGANGA	Shodhganga is an online platform for research scholars where researchers from all over India submit their doctoral thesis which can be openly accessed by others in order to study current and past trends and also avoid any duplication of research topics.
7	E-YANTRA	E-Yantra is a platform developed by IIT Bombay to train engineers and innovators by organizing competitions like Robotics and Innovation challenge wherein students are expected to come up with innovative ideas to solve real world problems.
8	E-KALPA	E-Kalpa is an online platform for Design learning with online content, resource repository and a collaborative learning environment. It aims on enhancing critical and sensorial skills of students to increase overall innovation and creativity in our country.
9	VIDWAN	Vidwan is a repository of various scientists, researchers, faculty members and experts from various universities and organizations across India containing their academic and research portfolios. This database can be used to select panelists and peer reviewers for various journals.
10	Virtual Labs	Virtual Labs enables students across India to perform experiments remotely by providing them with the necessary tools and resources. With this practical knowledge can also be taught online.

4) *Limitations And Barriers To Digital Education*

a) *Unavailability Of Necessary Infrastructure* - Even though smart phones and internet are quite affordable today the main concern remains of a stable power supply and a strong network. Although majority of the villages in India are electrified there are still some that have absolutely no power supply and load shedding. Rural India still has issues related to the speed of internet which makes it highly impossible to browse video content. Also, many rural households usually have a single device which again becomes difficult to share with their children for their learning purpose. Thus, the lack of the necessary infrastructure has created a digital divide amongst rural and urban India.

b) *Lack Of Focus And Motivation* - Since Digital learning must be done by constantly starring at one screen, it becomes difficult for students to sit at once place for long hours and focus. There are also high levels of distractions like messages, calls and other notifications that keep popping in between the lectures. Not just that online classes lack the interpersonal relationship which is why the students are not motivated enough to sit for long hours. Also, most of the examinations for schools and colleges were not proctored which was another reason for lack of motivation.

c) *Credibility Of The Courses* - There are a lot of fraudulent and fake degrees online and it is very difficult to identify such scams and determine the authenticity and credibility of such courses. Many courses are not accredited by any educational body and their learning materials are not quality checked by any external reviewers and editors.

d) *Technological Barriers* - There are huge number of students and faculty members that are not tech savvy and might face difficulty in setting up the basic system required for online learning and teaching which makes them dependent on others for the same. Moreover, teachers in India are used to the traditional board and chalk method and have not been trained for online teaching which makes them less confident in delivering lectures in the form of video content.

e) *Limited Feedback* - In case of traditional classroom learning teachers give immediate feedback, which helps students in rectifying their errors and motivates them to perform well which is limited in case of online education. Additionally, teachers are unable to identify pain points and difficulties faced by students in an online setting as there is no face-to-face interaction.

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B. Digital Employee Training And Onboarding

The COVID-19 Pandemic has not just affected the Education sector, but also has influenced hiring and training programs of various organizations. The downside of the pandemic is that a lot of the organizations have laid off their workforce to curb their expenses during this situation. But the pandemic has acted as a disruption in the hiring and training system. Employers that used to rely on traditional hiring processes and face to face interviews, have now moved to remote hiring and training with almost every business process being done remotely. With the introduction of the work from anywhere concept, remote hiring has emerged has an acceptable industry standard.

This enabled people to apply for jobs and internships that were global and difficult to commute otherwise. Though employers were initially skeptical and reluctant about the virtual hiring of interns and full-time employees, many organizations have now come to its acceptance by offering a smooth and seamless onboarding and training process. Most of the organizations have their own training portals such as TCS ION by TCS which has all the necessary learning material and training modules, and the others guide their new joiners and interns to various online platforms for certification courses. To make the hiring process exciting, employers are sending over laptops, cell phones, power banks and goodies to the new on boarders as a token of welcome. Companies have also started reimbursing for work from home equipments and even internet to enhance productivity. All the necessary documents are shared digitally between the employees and the employers and a meet and greet session is done using online platforms like Teams and Zoom to formally introduce the employee into the system.

C. Future Of Digital Education And Onboarding In India

There is a huge scope for Digital Education and Onboarding in India if the challenges and barriers are tackled by both the educational institutions as well as the government. Focus should be on decreasing the digital divide between rural and urban India by strengthening our IT and Digital infrastructure. Appropriate technology related trainings must be provided to both the faculties and students so that there is no technological barrier or dependency. Increased means for checking and verifying the authenticity of the certifications and degrees must be introduced to avoid scams.

A blended education system must be adopted in a post COVID scenario with an equal mix of both the traditional and digital learning bifurcating practical and theoretical subjects. Also, an equal importance and recognition must be provided to both the traditional and online learning to enhance its adoption. The landscape of hiring and training in India has also gone through a paradigm shift with virtual onboarding and remote working as a possibility soon as companies now have a pool of talent across the globe to choose from. Thus, ensuring a smooth adoption of digital education and onboarding will bring us closer to our Digital India mission.

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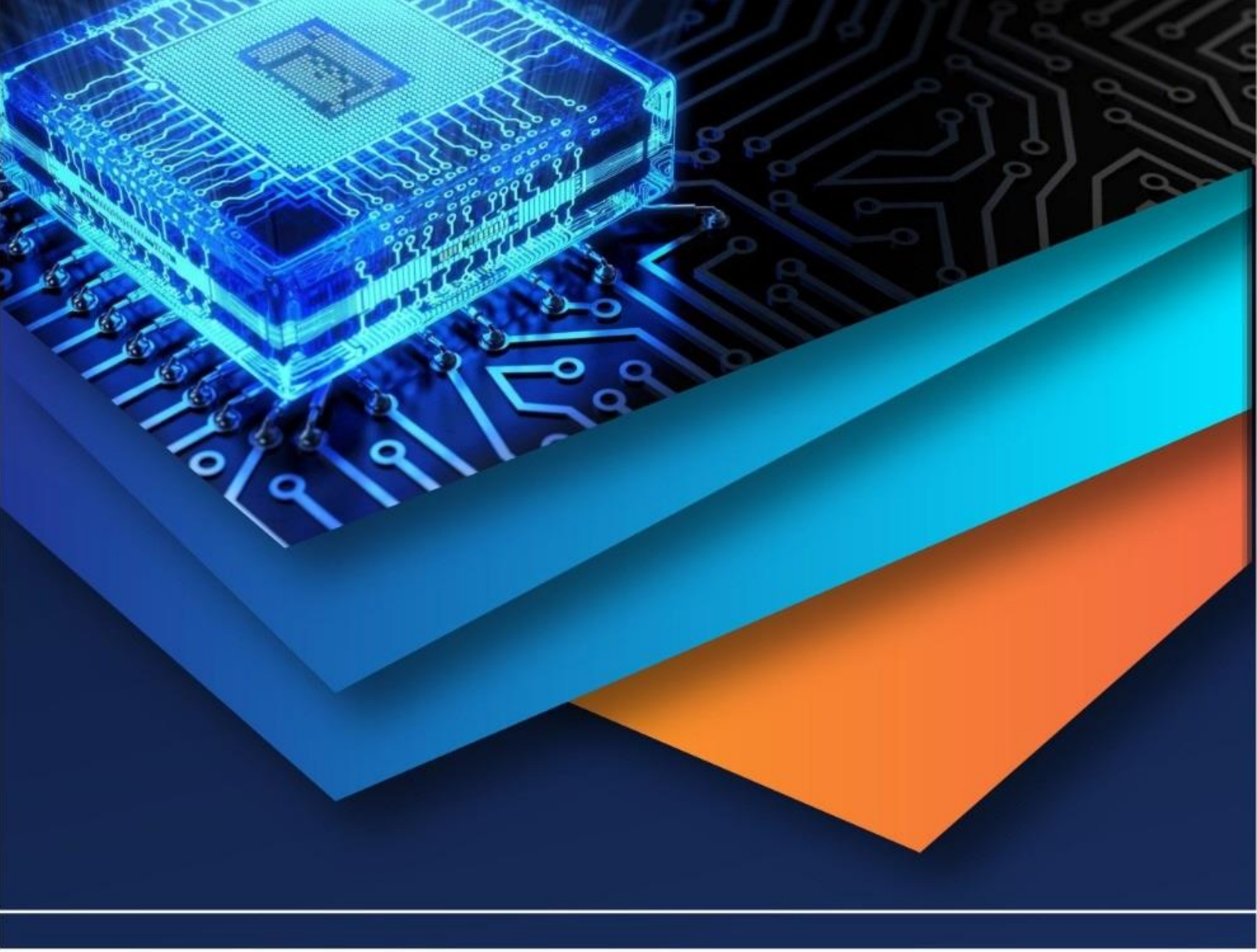
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