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Is Online Education Leading to Technology Addiction?

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Abstract: ***The Coronavirus outbreak which began in December 2019 became a world-wide pandemic by March 2020.The education industry had to adapt to this new change in a speedy and most feasible way by shifting to virtual classes over the internet and other available resources. As a result of this several tools for video and audio conferencing, text messaging and networking became very popular. Platforms such as Google Classroom and LMS(Learning Management Systems) gained popularity. Lectures are conducted in two ways- either live interaction of faculty and students on platforms such as Google Meet, Zoom app, Microsoft Teams, GoToMeeting and other similar applications; or by sending pre-recorded videos to students using LMS, Whatsapp and other similar applications. Digital applications are being primarily used for conducting online teaching, learning and evaluation. We tried to survey the amount of time the students are spending on their smart devices and whether it is leading to or has already caused technology addiction. We prepared a questionnaire and grouped it into 3 categories namely, Usage of Technology, Impact of Online Education and the Time Spent on various categories of applications.***
Keywords: Pandemic, Online education, Technology addiction, Impact of online education, Time management

I. INTRODUCTION

Coronavirus [1] outbreak across the World began in December 2019. It spread to the entire World very rapidly causing several cases of infections and deaths. On 15th March 2020, the Government of Goa [2] decided to close all the schools and colleges for students with immediate effect owing to the rapid spread of this virus. On 22nd March 2020, Our Honorable Prime Minister, Shri Narendra Modi declared the first lockdown which prohibited movement of all persons except for essential needs. This lockdown kept on extending for months together and the result was that the students could not continue their learning journey.

Taking appropriate measures, guidelines and standard operating procedures were laid down to begin teaching-learning through digital platforms. Many schools and colleges started taking lectures on platforms like Google meet, Zoom [3] (it was later discontinued owing to the privacy policy), Webex, etc. This was a paradigm shift for the entire Education Industry- the teachers, students, parents, and all other stakeholders.

There were many hiccups in the process such as issues related to internet connectivity, availability of the devices required (laptops, smartphones and tablets, etc.), training of the teachers and parents, students' training. Besides all this due to the non-tiring efforts of the teachers and the support and cooperation from other stakeholders, primarily the students and the parents, this model did manage to succeed.

The study is based on the age group of 5 to 35 year olds from different Talukas of Goa. The majority of respondents are from the college section with few school students responding to the same with the help of their parents/teachers. The responses have been received from different institutions spread across various Talukas of Goa. Maximum respondents are from rural areas where network connectivity is a major issue. Since, the respondents are mostly youth, they have personal mobile devices which so far were being used only for entertainment. The school students initially used the devices owned by their parents. However, as the parents moved out for work, they had to buy individual devices for each child in order to continue the online education without any roadblocks.

This study aims to see the response of the students for using the smart devices for prolonged hours for online education. We are trying to understand whether it is leading to technology addiction. The distraction from various apps during the class hours and availability of a smartphone with internet connectivity for personal use at their disposal has affected the way they use the devices. The hours of usage have multiplied manifold. We are also trying to understand the effectiveness of online classes in terms of teaching, learning and evaluation. the advantages and disadvantages of the same as viewed by the students. Through various statements in the survey, the responses of students are touched upon for self-retrospection of the students as well as a deep analysis by the surveyor of the overall responses.

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A. *Terminology*

Technology addiction can be defined as frequent and obsessive technology-related behavior increasingly practiced despite negative consequences to the user of the technology. An over-dependence on tech can significantly impact students' lives. While we need technology to survive in a modern social world, a severe overreliance on technology—or an addiction to certain facets of its use—can also be socially devastating. Tech dependence can lead to teen consequences that span from mild annoyance when away from technology to feelings of isolation, extreme anxiety, and depression.

Online education is a flexible instructional delivery system that encompasses any kind of learning that takes place via the Internet. Online learning gives educators an opportunity to reach students who may not be able to enroll in a traditional classroom course and supports students who need to work on their own schedule and at their own pace.

B. *Aims - hypothesis*

1) As an impact of online education the screen time, time spent with gadgets and social networking app usage has increased in terms of hours.
2) The impact of online education on sleep time and outdoor/physical activities has decreased in terms of hours.
3) Online education has a positive impact on knowledge and relationships.
4) Online education has a negative impact on concentration level and self-confidence.
5) Time spent on online classes surpasses all other app usage.

C. *Literature Review*

Dr. Pravat Kumar Jena (2020) identified the positive and negative impact of covid-19 on education. Covid-19 related restrictions affected 1.2 billion youth and students globally. The noted positive impacts were the move towards blended learning, use of learning management systems, collaborative learning, digital literacy etc. whereas the negative impact included unpreparedness of students/teachers for online classes, Increased responsibility of parents to educate their wards, Access to global education etc. The researcher has suggested that India should adopt creative strategies in order to ensure sustainable educational access to all the students especially the ones from remote areas, marginalised and the minorities.

Online teaching is no more an option; it is a necessity (Shivangi Dhawan 2020). The Covid-19 protocols made it nearly impossible to go back to traditional mode and there was a sudden need to adapt to teaching in online mode. Shivangi Dhawan (2020) in her study identified the SWOC of e-learning modes. In her research, she highlighted the key strengths such as time flexibility, location flexibility, catering to a mass audience, etc. Weaknesses such as technical difficulties, distractions, time management, lack of personal interactions etc. The study also identified opportunities in innovations & digital development and designing flexible programs. The major challenges are going to be unequal distribution of ICT infrastructure, digital literacy and digital divide. Covid-19 was just one of the calamities that made us realise the need for online learning.

According to a survey conducted by Hammerkopf Consumer Survey, there was a surge of 87 Per cent increase in the use of social media and OTT platforms during lockdown. (Manish Kumar and Anwesha Mondal, 2021) in their research found that the age of technology gadget use initiation was 15 years, frequency of Internet use per day in hours was 3–4 h, and frequency of Internet use per week in days was every day. The researcher found that 39.5% of the sample studies were severely addicted to the technology while 31.5% were moderately addicted. The researcher believes technology addiction was majorly because of the cheaper data plans as well as the mobile gadgets, which were affordable for the parents. According to the researcher, depression and loneliness may be some of the consequences among the youth because of technology addiction.

II. RESEARCH METHOD

For primary data collection, A questionnaire was circulated by the means of Google Forms to conduct the survey on Internet Usage and Technology Addiction among the students studying in various Schools, Colleges and other Educational Institutions in Goa. In this survey, Multiple choice questions were asked and the respondents had to select the best suitable alternative. The survey was circulated and responses were recorded from 11th June 2021 to 21st June 2021, and a total of 518 responses were gathered.

Through this paper, we try to understand the impact of online education/learning on technology addiction on the students. In this survey, the Pre and Post Covid-19 lockdown screen time and gadget usage was observed. For this purpose, a total of 30 questions were asked in the survey covering demographic questions, and study related questions about screen time, social media apps educational apps installed and their usage pre and post covid lockdown. Later the data analysis was conducted for understanding the technology addiction among the students.

A. Study

Initially the situational analysis was carried out which was based on the problems identified by researchers going through various articles. We decided to conduct a study on the students based in Goa. The research began with the survey report responses received from various schools, colleges and other educational institutions across all the talukas of Goa state. The Google forms were circulated on a random basis to all the identified target respondents who fall under the students category in studying in Goa. The questionnaire contained questions regarding the grade they're studying, institution's name and the basic socio-demographic questions.

The study focused on analysing the impact of online learning on the technology addiction and tracking the screen time of the gadgets among the students of Goa using the sample population of 518 student responses. The data consisted of responses submitted by 238 male respondents and 279 female respondents.

The paper aimed at depicting the impact of lockdown and allied restrictions on the lives of the students. The patterns such as sleep time, screen time, physical activities, social media usage, OTT platform usage were studied in this research. The study also helped to understand whether the use of blended mode or online mode in teaching is increasing the screen time among the students.

B. Data Analysis

The initial study started with the calculation of mean values and standard deviations. For the better accuracy of the responses, Variance was used to calculate the age and gender differences. A total of 518 responses were received, out of which 279 were female respondents while 238 were male respondents. The survey was across all the age categories of the students from 5 to 35 years. The average age of the respondents was noted to be 19 years.

According to the given hypothesis, the relationship between online learning and technology addiction was studied. The impact of online classes on the screen time of the students was calculated to have a better understanding of the same. The graphs were developed to depict and interpret the data. As a result, a thorough evaluation was possible. The Pre Covid and Post covid sleep patterns, screen time, changes in time spent on various gadgets such as laptops, Mobile phone, PC, the physical activities were compared using the graphs. The conclusions were drawn using these graphs on how covid related lockdowns and restrictions resulted in the increase of screen time and reduction of the physical activities. The students had to rely mainly on digital mode to be in touch with their friends. Initially, the time spent on Social media, OTT and Games was taken over by the E-learning platforms and online classes.

III. RESULTS AND ANALYSIS

The students were given a multiple choice grid where various statements were provided with different choices(only one of these could be selected for each statement). The statements were divided into three broad categories listed below.

A. Usage of Technology

Under this criteria, twelve statements related to the opinion of the students were given to the students for understanding the usage of technology (in hours). The options against each statement were 0-2,2-4,4-6,6-8 and more than 8.The objective here was to understand how online classes have affected the usage (in hours) of the smart devices, screen time, sleep patterns and physical activity. We have also tried to understand the difference in usage of social media in the number of hours and number of applications both.

From the below analysis we can clearly see a sharp rise in the screen time and time spent with various electronic gadgets.

We can also see how the sleep patterns have changed. Most of the students have shown a decrease in their sleep time despite being at home all the time.

A sharp decline is seen in the time spent on physical/outdoor activities before and after the pandemic.

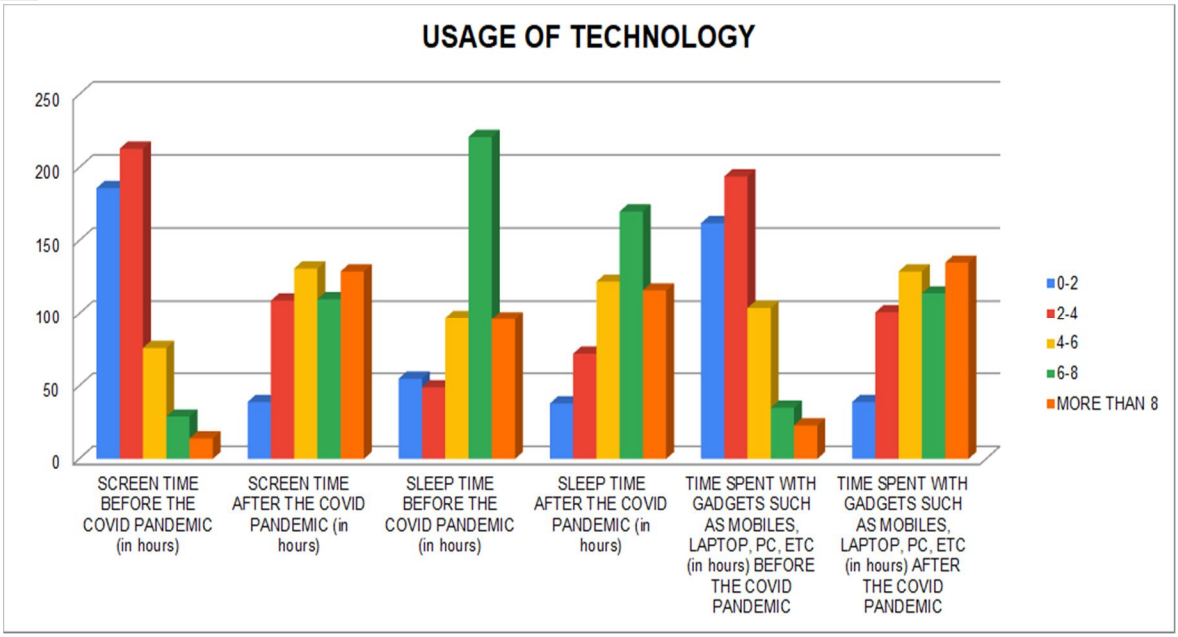
The number of social media applications installed on the phones have increased evidently after the pandemic.

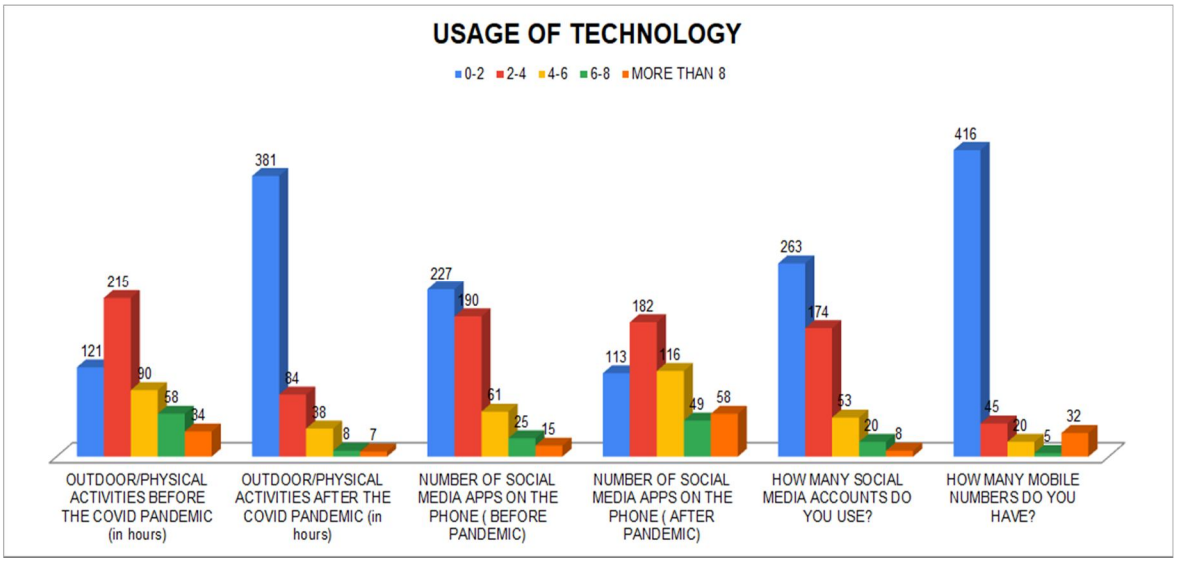
We can observe that the majority of students use 1 or 2 mobile numbers while around 20% students have more than 2 mobile numbers.

From the below graph, we can clearly see that the online classes have encouraged usage of gadgets and resulted in a decrease in the outdoor/physical activities. We can also see the impact on the sleep patterns and distractions from social media having inverse proportion.

The overall analysis shows that the students have started using their gadgets more than before.

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B. Impact of Online Education

Under this category, seven statements were given to the students specifically related to the impact of online education. The choice against each statement was: Strongly Disagree, Agree, Neutral, Agree and Strongly Disagree.

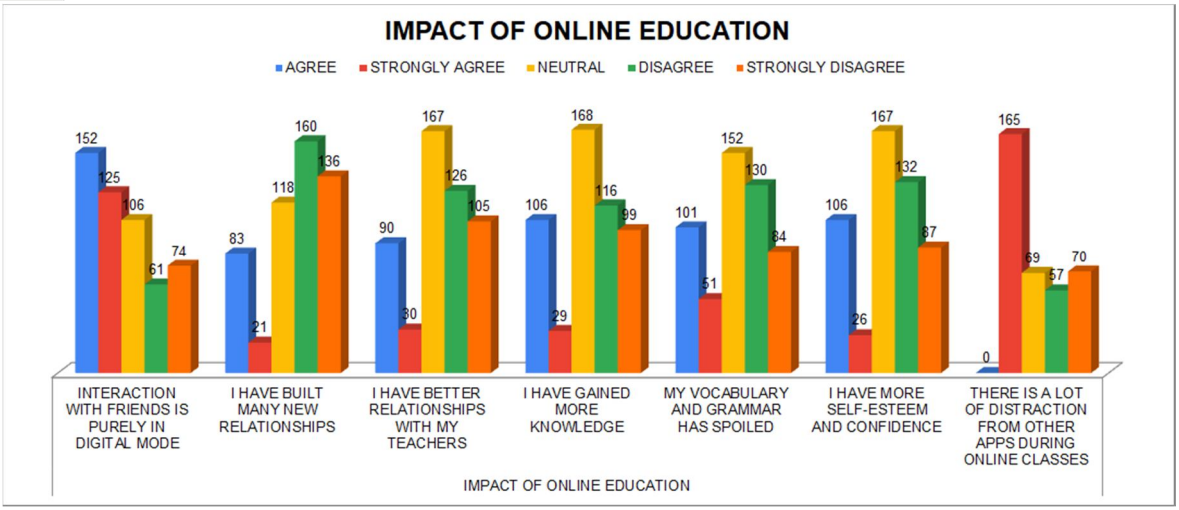
From the graph below, we can clearly see that most of the students are not able to manage their relationships with the lack of physical meetings. The digital revolution in the education industry has failed to enable the students to build new relationships and has negatively impacted the relation between the students and the teachers.

Most of the students disagree that they have gained more knowledge in the online mode, however, their grammar and vocabulary has been impacted by the language popular on social networking applications.

Most students have agreed that there is a lot of distraction from other applications during online classes and are aware that it has impacted their self-esteem and confidence negatively.

The overall analysis shows that the students have been impacted by online education. Their relationships have suffered, knowledge and vocabulary has been affected, they are low self-esteem and confidence and are highly distracted.

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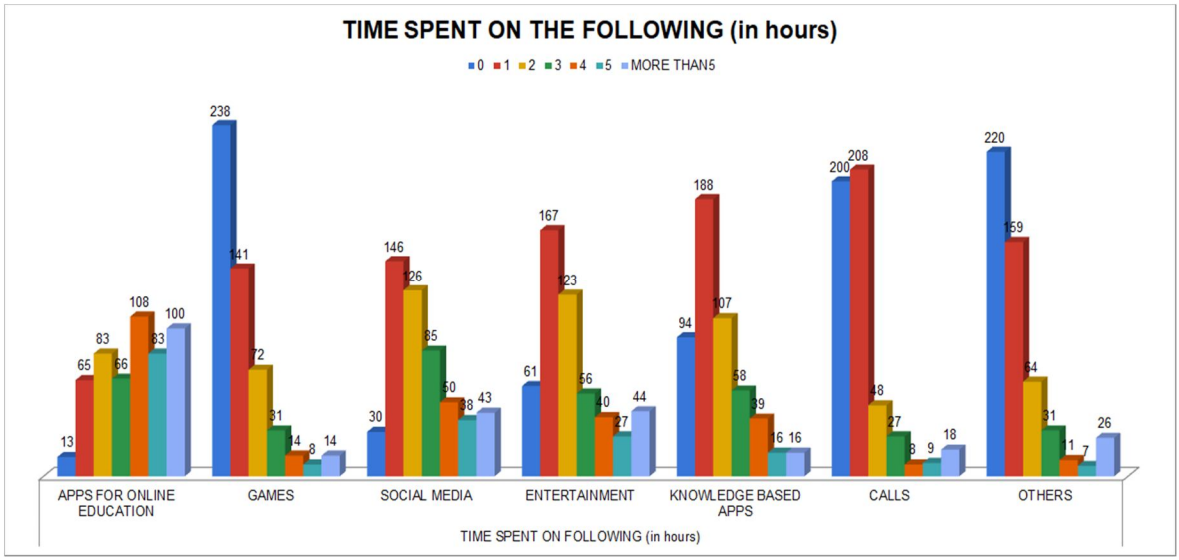
C. Time Spent on the Following (In Hours)

Under this criteria, seven options related to gadgets and applications pertaining to usage of devices in hours (0,1,2,3,4,5 and more than 5 were the options available).

From the below graph, we can see that students are using several applications for online education, knowledge and entertainment.

A very large number of students do not have any games installed on their devices and neither make any phone calls. The use of devices is also happening for other purposes, though it is not very prominent.

The overall analysis shows that the students are using their devices mostly for education and knowledge based applications along with equal weightage for entertainment. Time spent on calling and playing games is very less. The use of social media applications is balanced out.



IV. CONCLUSION

From the above analysis, we can conclude that students are using their devices for online education and knowledge enhancement. It also affected their interpersonal relationships and they are low on self-esteem and confidence. At the same time they are highly distracted by other applications on their devices during the online classes.

We can also see that the sleep patterns, screen time and usage of devices have seen a significant difference in the pandemic. The figures vary before and after the onset of online education.

So, the overall conclusion is that online education has resulted in a sharp rise in usage of technology and decline in mental well-being of the students. Hence, online education is leading to technology addiction.

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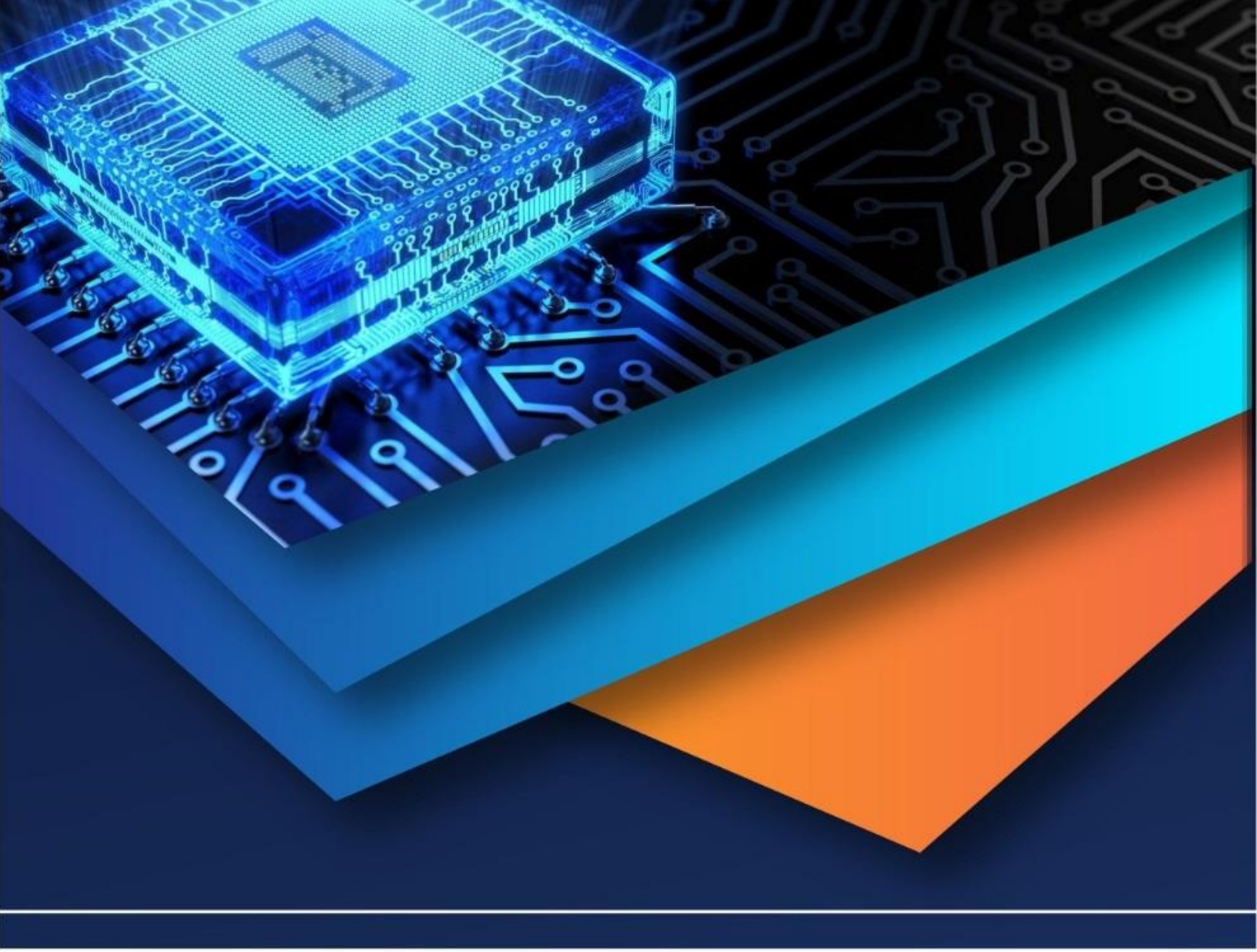
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