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Online Teaching Quality Analysis using Learner's Feedback

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Abstract: ***From scientific study it is proved that analyzing anything based on the data,facts,issues,problems helps in finding various problems,issues and things that needs to be changed so that the system or the outcome of the result that we want can be up to the mark.These analysis works as an important tool in maintaining the standards and quality of the outcome. Analysis in any field helps in getting insights of that particular filed. These analysis include the deep and thorough information of any thing that needs to be analyzed. The same method can also be used for the analysis of the online teaching quality that is being followed by most of the institutions, and colleges these days due to the pandemic outbreak ,so that students can attend classes in online mode while they are in their home being healthy and safe. Since there are large number of students and they have various subjects and teachers allotted to them, there can be various issues that a student can face while having their online classes. To tackle this what we can do is to make an online system that can collect the feedback of the students in each and every subject with the respective teacher. Through this online system it will be easier for the students to share their problems without any hesitation and difficulty. All these feedback's then can be used and analyzed to solve each issues and problems faced by the students. This paper deals with the problem of feedback of students regarding their online teaching and presents an online teaching quality feedback system and its importance in improving the quality of teaching. Thus it is clearly visible that online teaching quality feedback system have the ability to improve the quality teaching and learning.***

Keywords: *Online Teaching, Quality Analysis, Learner's Feedback*

I. INTRODUCTION

It is known from various studies and research that feedback helps in increasing the quality of learning. Students while their studies faces various problems and issues regarding their studies which sometimes plays a vital role in affecting the results of the students, specially during the online classes many students finds it difficult to cope up with it as they found a sudden change in the classes and the way of their studying. Many students were not able to understand the topics completely, some have doubts ,some have poor internet connectivity, some have infrastructural problems. Some have audio related issue as they are not able to hear the audio of the teachers due to poor internet connectivity. All these issued needs to be addressed and should be solved with the perfect resolution to that. To gather all these information regarding the problems faced students needed an one stop place that can used to collect all these feedback and can be transferred to the colleges, institutions and based on that some changes needs to be amended so that students can continue their study in online mode without any problem like they were doing in offline classes. To solve this issue we have make an online system that collect all this feedback, store it
and process it after which admin can analyse the feedback of the students in each subject with respective teachers and find the root major problems affecting the studies of students in online mode. This analysis will help the teachers to know what are the major issues students are facing related to their classes and then they can come to some conclusion to solve the issue and ensure the smooth learning of the students without any disruption

II. BACKGROUND

Using online feedback process framework can play an important role in improving the teaching quality of the teachers which will result in improving the regulation of learning .[1]
Feedback is an important aspect of a learning experience . It makes the students able to describe the problems they are facing while they are learning which will help in improving the learning.Sometime giving the useful feedback is not an easy job and sometime it is also an time inefficient task.In online learning environment ,this problems gets even bigger because of the large number of students [2]
Since the demand for quality education increases,institutions are accountable for using quality methods,programs and delivering the quality learning to the students even if it is an online mode of education.[3]

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The findings of this analysis discovered that flexibility, cost-effectiveness, electronic analysis handiness, easy association to the web, and well-designed category interface were students? positive experiences. The student's negative experiences were caused by delayed feedback from instructors, unprocurable technical support from instructors, lack of self-regulation and self-motivation, the sense of isolation, monotonous educational ways, and poorly-designed course contents.The findings is utilized by instructors to grasp student's perceptions concerning on-line learning, and ultimately improve their on-line teaching methods and it's application .[4]

Using a qualitative content analysis approach, this study reviewed 47 published studies and exploration on online education and learnedness since 2008, primarily concentrating on how propositions, practices and assessments apply to the online education medium. The purpose of this paper is to give practical suggestions for those who are planning to evolve online courses so that they can produce commonsensible resolutions in the execution process. [5]

Systematic reviews were conducted in the nineties and early 2000s in an online study study. However, there is no review that explores the broader aspect of online research topics in online learning over the past decade. This systematic review addresses this gap by examining 619 study articles online which have been published in twelve journals over the past decade. [6]

This study investigates the impact of peer response used as a teaching strategy to enhance student online post quality. Although peer response has been shown to support students' learning in traditional classes, little is known about its effectiveness in online discussions. To address this gap, we examined students' perceptions of the peer-to-peer response and response rate, which was directly related to the quality of online chat posts. [7]

Online educators should be prepared for emerging written communication requirements associated with online education, as much time is needed to answer students' questions and provide feedback on assigned tasks. The purpose of this comparative study was to determine whether there was a significant difference in student satisfaction, performance, and perceived "interaction" with the teacher when the teacher used the combined response compared to the individual. [8]

Online learning-related technologies have led to many new response practices and expanded the meaning of the answer beyond the usual focus on teacher comments, but the function of the online feedback concept has not followed. [9]

The Internet has made online learning possible, and many teachers and researchers are interested in online learning courses in order to improve and enhance student learning outcomes while combating a shortage of resources, resources and tools especially in higher education. [10]

III. ONLINE-SYSTEMS FOR STUDENTS' FEEDBACK

A. Student Feedback

There is a proven evidence that a student feedback can have positive influence on quality learning for the students. Providing an option to students to give their views on the online teaching quality shows students that their views and individual learning experiences are taken seriously.Studies and researches shows that for students it is very important for them to know that their views and opinions matters .Also for the teachers it helps in understanding the thinking, problems and issues of the students that they are facing while their studies.An approach like this helps the teachers to address the problems or queries regarding a certain lesson or topic.Following this method can make the teacher aware of the issues and therefore it they can adopt the changes that are required to be implemented so that the problems can be solved,even in the courses with a huge number of students. Feedback system also helps in appreciating one's hard work and dedication. Students can also use their feedback as an appreciation for their respected lecturers if they find their teaching good and appreciable. This will increase the engagement of the lecturer in the class as it will have positive impact on the mind of the teacher, receiving such an appreciation post motivates the teacher to continue their hard work towards the learning of the students.

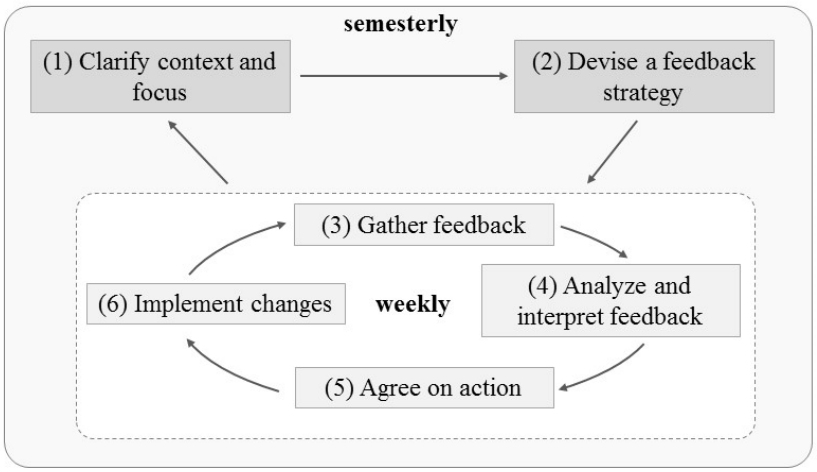
There can be various ways to receive the feedback of the students like it can be taken at the end of each semester or it can also be taken time to time like weekly or monthly. Taking feedback weekly or monthly will be beneficial for instant and quick solution of the problems faced by the students while semester wise method can take a long time to get to the problems.

One of the advantage of taking the feedback online is that immediate action and steps can be taken to solve the issue by getting the insights from the feedback of the students. It is also advantageous to those students who are not able to speak or ask their query during the classes due to hesitation as we normally see in the class, only few students were able to ask their queries, this online system will proved to helpful for the students.

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B. Feedback-Process Cycle

The Feedback Process Cycle can be classified in the following below process cycle. Feedback process cycle can have six major aspects or points that needs to be followed to complete the whole agenda of analyzing the feedback and come to a solution to the problem.



The above model was proposed for evaluating the feedback in a phase wise manner, and the same can also be implemented in the online-learning quality feedback system.Implementing the above model will benefit the implementation of required changes more quickly as weekly analysis of the feedback will give more accurate outcomes in the context of the problems and if the changes are being implemented or not. Weekly analysis in the above model i.e. from step 3 to step 6 will result in better outcome in the semester analysis. These weekly analysis on the basis of the problems facing by the student can be come up with some action and after performing the action changes can be implemented in teaching.

C. Example

In this project we have taken the feedback of students who are having their classes through online medium to know about how effective is the online classes are in present scenario.We have made a system that will provide an online interface to the students where students can enter their views regarding their experiences during online classes.They can write their problems faced during classes,it may be related to teacher's way of teaching, technical issues during online classes , doubts regarding topics, infrastructural problems like bad lighting in video classes,camera problems, non cooperation from teacher's side with students and other problems.

In this system we have used a sentiment polarity method which is based on the polarity values of words that will be present in the feedback of students on the system. After getting all the feedback from the students our system will analyse all the feedback and generate a report which will have the sentiment analysis of the feedback of students in their respective courses subjects and their respective teachers.

Admin can share this report with respective teachers and Faculty members so that they can work on the problems and improve the teaching quality.

In this way colleges can collect data regarding the online classes problems and areas that needs to be covered in teaching methodology of teachers and issues faced by students.

IV. METHODOLOGY

A. Proposed System

Methodology of This paper, various paradigms for assessing quality in online education programs are found within the textbooks, and are examined and compared with similarities and differences. Each study or revised article identified specific areas of focus and themes that were considered basic to reflect quality in online education programs. Using technology and coding, each paradigm was divided into key focus areas or themes. The tested courses are incomplete but better represent the various efforts available to define and evaluate the quality of online education systems. Examined articles and lessons are presented in chronological order in books.

V. EXPERIENCES AND EVALUATION

This feedback-system was implemented in MIET, Meerut B.tech Course in Computer Science & Engineering Branch where 50 students have participated in submitting their feedback in every subject they have in their 7th semester and along with theses subject assigned teacher.Based on the analysis of the feedback,the admin can generate a report which will have the scores of each course's subject along with the teachers based on the sentiment polarity scores of the words used in the feedback of the student and based on this we find that some students have problem in some subjects like doubt in a lesson or topic,some have problems with the teaching methodology of the teacher.Based on the report generated admin share the report analysis with the teachers and can come on the measures that can solve the issues.

A. Offline Paper based Feedback

Firstly open ended offline paper based feedback were asked from students about their experience regarding the online teaching in various subjects of their respective courses and year.Each student had to write their name,section,roll number,year,branch and then they have to write their feedback in the feedback section in various subjects.There were 50 students who have participated in the Offline paper based feedback form.We have found that total of 30 responses are positive and 20 responses were found to be negative based on the feedback of the students on the paper.We have found that from 20 students some have same and some have different kind of problem related to the teaching.We have analyzed the response we got from this method to check if their is a difference between the outcome of this method from the online feedback system method.

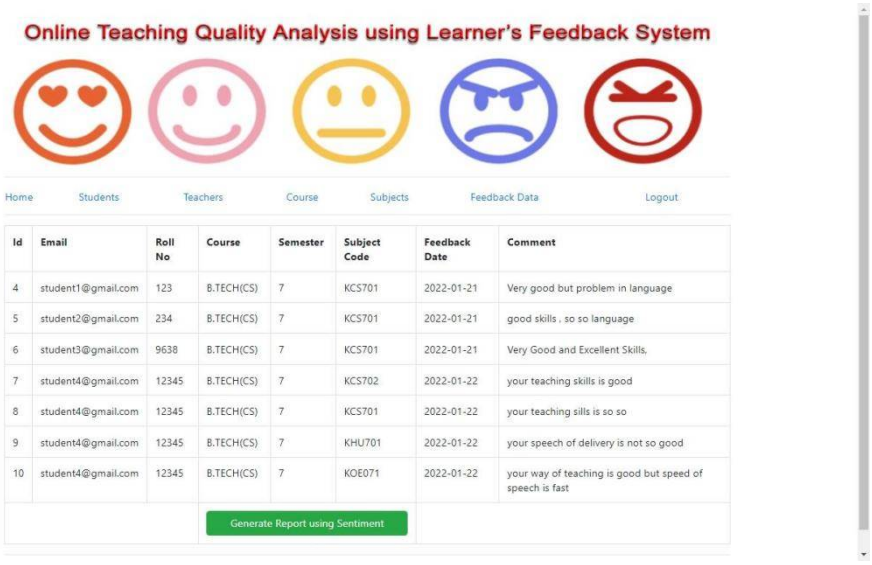
Following this method what we found out is that most of the students have problems related to the teaching method or have doubts in some lessons or topics.Also some students have internet connectivity issues because of which they were sometime not able to hear the audio of the lecturer, also sometime students were not able to join the meeting link of the classes due to some technical glitches.Some student have problems in understanding the lab work that have been going on in online mode.Also some students finds it difficult to understand the practical implementation of various topics after the theory part.

B. Online Teaching Quality Feedback System



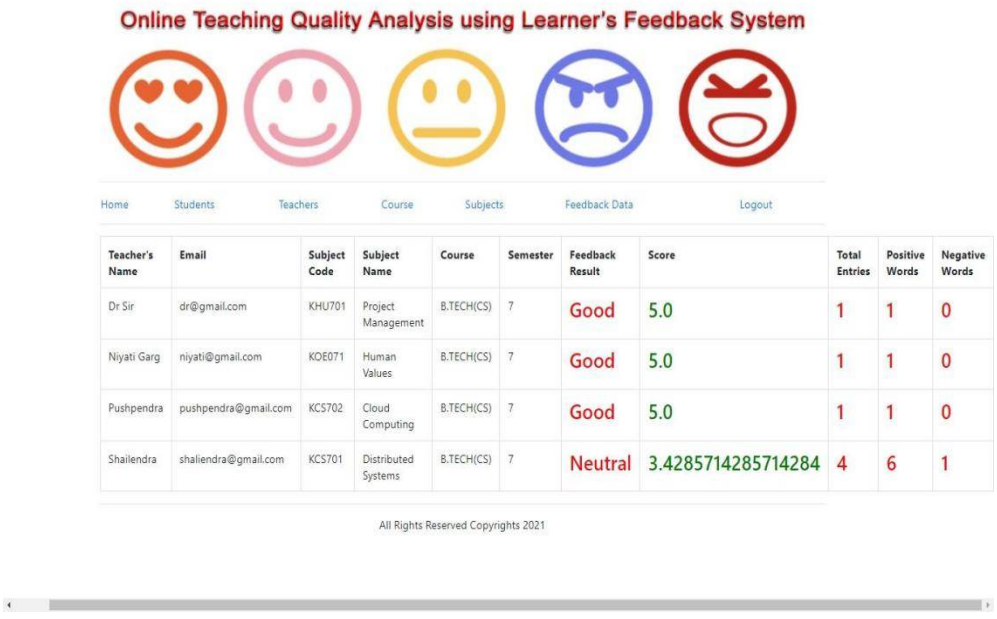
This online system is our second method to collect the feedback of the students.We have provided a full fledged interface to the students where they can register and login in the system using their email Id and Password after which they have to choose their respective course,year and subject.After selection of the mandatory fields they can access to the feedback page of the system and can enter their feedback in each subjects. All their data will be accessed by the admin to generate, on the basis of which admin can know about the problems and issues of the students,things that needs to be changed.Students can also look their past feedback to check if there are some changes that had been made in order to solve his/her issue.

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Id	Email	Roll No	Course	Semester	Subject Code	Feedback Date	Comment
4	student1@gmail.com	123	B.TECH(CS)	7	KCS701	2022-01-21	Very good but problem in language
5	student2@gmail.com	234	B.TECH(CS)	7	KCS701	2022-01-21	good skills , so so language
6	student3@gmail.com	9638	B.TECH(CS)	7	KCS701	2022-01-21	Very Good and Excellent Skills,
7	student4@gmail.com	12345	B.TECH(CS)	7	KCS702	2022-01-22	your teaching skills is good
8	student4@gmail.com	12345	B.TECH(CS)	7	KCS701	2022-01-22	your teaching sills is so so
9	student4@gmail.com	12345	B.TECH(CS)	7	KHU701	2022-01-22	your speech of delivery is not so good
10	student4@gmail.com	12345	B.TECH(CS)	7	KOE071	2022-01-22	your way of teaching is good but speed of speech is fast

The admin can do various tasks such as assigning lecturers to each subjects,allocating subjects according to the semester and branches.Admin can add teachers details like subjects allotted to him/her.Admin can view the feedback of the students and also generate a report on the feedback using sentiment analysis where based on the polarity score of the words present in the sentences of the feedback ,a report will be printed where the admin can see the score of each teacher along with positive or negative remark which can be used as the measure to know that if the teaching quality of the teacher is up to the mark or needs some changes to get better.Admin can share the result with the respective subject teacher,following which teacher can have a talk with the students about the problems they are facing and can come up with some changes that needs to be implemented in order to make the teaching more efficient.



Teacher's Name	Email	Subject Code	Subject Name	Course	Semester	Feedback Result	Score	Total Entries	Positive Words	Negative Words
Dr Sir	dr@gmail.com	KHU701	Project Management	B.TECH(CS)	7	Good	5.0	1	1	0
Niyati Garg	niyati@gmail.com	KOE071	Human Values	B.TECH(CS)	7	Good	5.0	1	1	0
Pushpendra	pushpendra@gmail.com	KCS702	Cloud Computing	B.TECH(CS)	7	Good	5.0	1	1	0
Shailendra	shailendra@gmail.com	KCS701	Distributed Systems	B.TECH(CS)	7	Neutral	3.4285714285714284	4	6	1

We have taken the same set of students in this system also which we had took in the offline paper based mode to check if we have some contradiction between the offline feedback and the online mode feedback.

VI. RESULTS AND DISCUSSIONS

1) Using Offline paper based mode participated by 50 students in a particular course and in a particular branch the result came as follows :

a) Number Of Positive Response : 35
b) Number of Negative Response : 15
c) Percentage of Negative Response : 30%

Above result shows that out of 50 responses 70% were positive and 30% were negative response.This result shows an above average performance but still few students have some problems or issues regarding the teaching.

In the Online Teaching Quality feedback system mode where the same set of students have participated but in a different manner i.e. in online mode where their data can be only seen by the admin and not their lecturers directly. Students trusted this method more then the offline mode of the feedback as some students feels that if they will say something bad about any lecturer teaching quality they may face the negative consequences.This feeling of hesitation limits the success of Offline paper based feedback method and increases the trust in the online mode due to its confidentiality only an authorized admin can see the feedback and then without taking the name of the students admin can share the outcome of the result with the lecturer. IN this manner students will be able to participate fully in the process of the feedback and the outcome of the result will be more accurate and at the end it will result in getting a more clear picture of the real problems and issues faced by the students during online teaching. Using the feedback responses, if in case improvement in any area is required then a lecturer can communicate with the students during the online class and can ask them about the problems that were occurring with the students while the online classes. Lecturer can take extra classes as doubt classes if students have any doubt regarding any topic or lesson. Lecturer can also take extra class if some students missed any class due to internet connectivity issue or any other technical glitch or if a whole class on a particular day was not understandable to students.

2) Using Online System with the participation of the same set of 50 students what we find out is as following:

a) Number Of Positive Response : 20
b) Number of Negative Response : 30
c) Percentage of Negative Response : 60%

Following this method we can see that 60% of the total responses are negative that means there is huge contradiction between the result of the two methods i.e. the offline method and the online method. This shows that a vast majority of the students are facing problems that needs to be solved and should be taken care of. This result also shows that students feels more comfortable and express their real thoughts and views about the teaching quality, as they feel that in the online mode their identity will not be disclosed to their respective subjects lecturer and will make sure confidentiality as students think that they may face any negative consequences if they will criticize the lecturer teaching quality. This result also shows that it is a must that the lecturer has to make some changes in his or her approach or method to solve the issues. Following lecturers can discuss with the students about what are the problems they are facing and can ask them to suggest him about the changes that can be implemented to remove these issues. At the end it will also help the colleges or institutions to increase their students result percentage as analyzing and interpreting the feedback of the students and come up with a strategy and implement the changes to solve the issues. It will also increase the confidence of the students in their lecturer and college administration that there views are really being taken care of. Also if this feedback will be followed on a weekly or monthly basis then result will be more efficient and the changes will be even faster and since lecturer will be able to see the feedback on a weekly or a monthly basis he/she can know that if the previous problems are solved or not and based on that the lecturer can move on to the next problem.

VII. CONCLUSION

Using Online feedback system helps in getting the weekly or monthly feedback from students about various problems they are facing in their studies during the online teaching and helps the lecturers to get an update on these problems after knowing which lecturer can discuss it with the class and come up with a solution that needs to be implemented in order to make the teaching quality better by fixing the issues. Lecturers can adapt according to the students problems and try to engage with the students on how their learning experiences can become more effective and results into achieving good grades in the exams. Using online system to get the feedback also helps in increasing the participation of the students in the feedback system as they trust the system that their identity will not be disclosed to the lecturers which may have any negative consequences on them. It also increase the confidence of the students in their administration.

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Online Feedback system also helps in increasing the engagement of the students with their lecturers and they can feel more comfortable and relax while asking any query or giving any sort of negative feedback. All these things and facts clears that how online feedback system is more beneficial then the offline feedback also it must be noted that this system can be used to identify that there are some problems in the teaching quality that needs to analyzed and based on the analysis some changes should be implemented but it should not be seen as an permanent alternative to the direct interaction of a lecturer with their students as only direct communication or interaction can lead to a more clear picture of the problems that students are facing and lecturer can also ask for some suggestion from the students about how the teaching can be more effective in online mode. This paper shows one such possibility of getting some insights about the students views regarding the online teaching, however further work must be done to prove the efficiency and the impact which the online feedback system may have on learning success.

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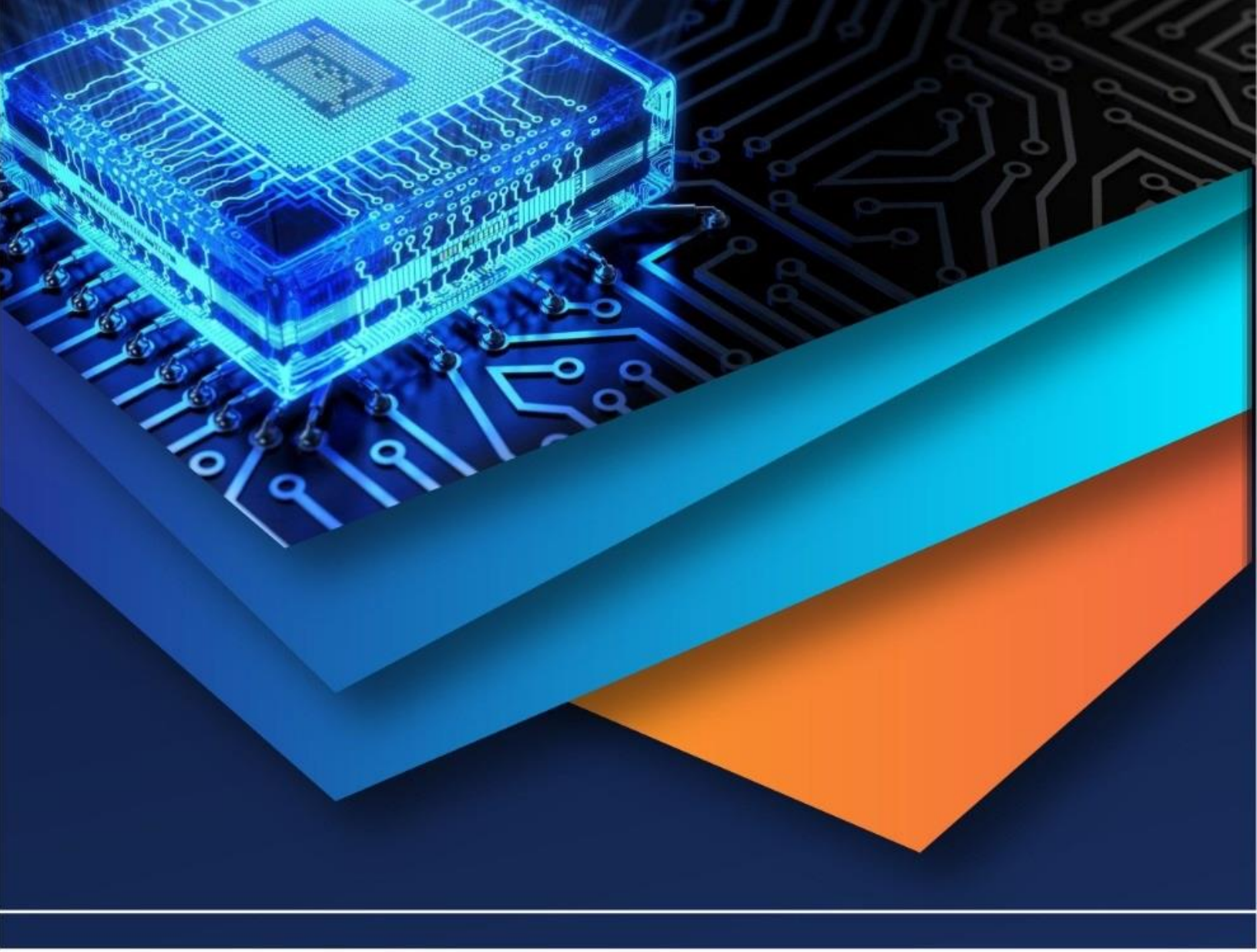
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