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A Descriptive Study to Assess the Innovative Abilities Among Student Nurses at Applied Medical Science College, Alnamas, Kingdom of Saudi Arabia

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Abstract: ***Innovation is something radically new that creates added social and economic value for an organization. The ability to support and sustain the innovative process is a significant challenge in today's high-pressure healthcare environment. The skills that characterize the traditional leadership model, such as planning, controlling, and managing, are no longer adequate to move a healthcare organization along a trajectory that leads to better patient, staff, and system outcomes. A descriptive study was done to assess the innovative abilities among student nurses at applied medical science college, Alnamas. Descriptive approach is used in this study. 120 students were selected by simple random sampling method. Researcher's convenience and familiarity with settings were added reason. The tool used for the study includes demographic data and innovative abilities assessment tool to assess the innovative abilities. After collecting the data, the data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics. The study findings reveals that 9 students (7.5%) are exceptionally innovative , 17 students (14.16%) are very innovative, 39 students (32.5%) are having above average level , 43 students (35.83%) are having average level , 8 students (6.6%) are having below average level & 4 p students (3.3%) are non innovative. Regarding the association between innovative abilities and demographic characteristics the study findings revealed that there was significant association between innovative ability level and age (χ^2= 8.807 , df=3, P=0.0319) , year of study (χ^2= 8.807 , df=3, P=0.0319), previous schooling (χ^2= 8.681, df=2, P=0.0130) , parents education (χ^2= 22.72, df=3, P=0.000046). But there is no association between innovative ability level and family income(χ^2=7.573, df=3, P=0.0557.),area of residence (χ^2=0.661, df=1, P=0.4160) . The study reveals that there should be improvement among the nursing students innovative abilities of learning to bring out innovative ideas in the field of nursing profession to give effective care to the individual, family and community.***

Keywords: descriptive approach , effective care, innovative abilities , nursing students ,nursing profession,

I. INTRODUCTION

"Learning and innovation go hand in hand. The arrogance of success is to think that what you did yesterday will be sufficient for tomorrow."-William Pollard

"The difficulty lies not so much in developing new ideas as in escaping from old ones."

John Maynard Keynes

Innovation skills are practically the types of skills that allow individuals to become innovative in what they do. The ability to support and sustain the innovative process is a significant challenge in today's high-pressure healthcare environment. Innovation can be viewed as a process for inventing something new or improving on that which already exists. Healthcare is relatively new to the science of innovation. Therefore healthcare leaders must look to other fields, such as the social sciences, engineering, and business including diverse industries, such as transportation and manufacturing, to develop an emerging science that can guide the innovative process in healthcare. The developing science of innovation tells us that there is a method to the innovative process that can be articulated, defined, measured, and framed within a variety of settings. Innovative abilities has been attributed variously to divine intervention, cognitive processes, the social environment, personality traits, and chance ("accident", "serendipity"). It has been associated with genius, mental illness and humour. Some say it is a trait we are born with; others say it can be taught with the application of simple

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techniques.

DeSanto- Madeya states that nurse educators are continually challenged to develop teaching strategies that enhance students' critical thinking, problem-solving, and decision-making skills. In order to attain these skills, changes need to take place in the teaching and learning environment. Simpson and Courtney state that "Nurses must think critically to provide effective care whilst coping with the expansion in role associated with the complexities of current health care systems". Nurse educators play a pivotal role to assist student nurses to fulfill these expectations. A study done by Abu Hasheesh and colleagues concluded that nursing is a practice-based profession and that over indulgence in teaching knowledge through teacher-centred methods may result in ineffective teaching effectiveness and low students' achievements. Nurses are faced daily with the changing healthcare environment due to patients who present with more acute and complex healthcare issues and needs. Rhodes and Curran state that these changes created an atmosphere which requires the nurse to make sound clinical judgments about patient care, delivering high quality care and be accountable.

Kanter and Senge have both suggested that innovation is a process that brings creativity to measurable outcomes, actions, products, or processes (Kanter, Kao, &Wiersema, 1997; Senge, 2001). Christensen has added that "innovation is something different that has impact. The often unspoken goal is to solve a problem" (Christensen, 2007, Training Manual; no page number).In this section we will describe two perspectives on innovation, one by Eric von Hippel (n.d.) of the Sloan School of Management at the Massachusetts Institute of Technology (MIT) and one by Clayton Christensen of the Harvard Business School.

One opportunity for nursing may be to influence organizations concerning their information technology (IT). Organizations that will survive are those that can access needed information the fastest in responding to consumers and providers. IT support will assist clinical decision making by identifying best practices, coordinating caregiver and team efforts, and monitoring adherence to established clinical practice guidelines (Simpson, 1999). This also will support the advancement of the nursing profession if the IT uses standardized nursing languages and classification systems to document nursing care. Thus, nursing will have data-based information related to nursing best practices and be able to do further research to link nursing diagnoses, interventions, and outcomes, then do comparisons that are meaningful. Indeed, these are changing times in health care, but they are also exciting ones if nursing chooses to be proactive in its response to these changes at the individual and organizational levels. Creativity will be needed to provide new solutions to problems.

II. SIGNIFICANCE OF THE STUDY

This section will provide brief description on the various significances of the study . The proposed study serves the nursing students with information and experience in the innovative process and challenged students to use innovative skills in solving nursing problems and most important is the further established and reinforced a new, higher level of nursing practice--a level that appropriately sees the nurse as a innovative member of the health care team. It also foster the personal development of nursing students. The proposed study will benefits and help the future researcher as their guide. The study can also open in development of this study. While seeing in our profession, innovative abilities in nursing education helps nurses to perform successfully in an environment that demands innovative problem solving and helps them to prepare themselves to face future challenges , so I select this study to assess the creative abilities of nursing students of our college .

III. STATEMENT OF THE PROBLEM

A Descriptive Study to Assess the Innovative Abilities Among Student Nurses At Applied Medical Science College, Alnamas, Kingdom Of Saudi Arabia.

A. Aim/objectives of the study

To assess the innovative abilities among student nurses in Applied Medical Science College For Females Alnamas .

B. Objectives

To assess the innovative abilities among student nurses in Applied Medical Science College For Females Alnamas .

To find out the association between innovative abilities and demographic characteristics such as age, year of study, previous schooling, parents education, family income, Area of residence.

C. Operational definition

Assess: Assess refers to know something accurately

Innovative abilities: Innovative abilities is the ability to think up and design new inventions, produce works of art, solve problems

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in new ways, or develop an idea based on an original, novel, or unconventional approach.

Student Nurses: Student nurses are the candidates who were doing undergraduate degree program in nursing and capable of rendering health care service in different settings, also utilize their skills in teaching , supervision and administration area

D. Hypothesis

There will be innovative abilities among Student nurses.

There will be statistically significant association between the level of

Innovative abilities and selected Socio-demographic variables such as age, year of study, previous schooling, parents education, family income, Area of residence.

E. Assumption

Innovative abilities is common among students

College students are more interest to participate in innovative assessment

F. Delimitation

The data collection is delimited to two weeks

The students who are willing to participate during data collection

G. Projected outcome

The study findings helps to assess the innovative ability among undergraduate nursing students.

H. Limitation

The study was conducted among B.Sc Nursing students in Applied Medical Science College For Females Alnamas. generalization can be done but with caution

IV. METHODOLOGY

This chapter includes research design, the setting of the study, the sample size, the criteria for sample selection, the methods of sample selection the instruments and tools for data collection, the technique of data analysis and protection of human subjects. The present study was designed to assess the innovative abilities among student nurses in Applied Medical Science College For Females Alnamas.

A. Research Approach

The research approach used for this study was a descriptive approach.

B. Research Design

Descriptive research design was used for the study.

C. Setting of the study

The study was conducted in Applied Medical Science College for Females Alnamas. The total number of students in the college is 200. Among 200 students we have selected 120student nurses as samples for this study. This setting was selected because of the availability of participants and feasibility of conducting the study. Researcher's convenience and familiarity with settings were added reason.

C. Population

The target population for this study is students from level 1 to level 8 and between seventeen to twenty one years old student nurses from Applied Medical Science College For Females Alnamas..

D. Sample

Sample consisted of 120 student nurses of Applied Medical Science College For Females Alnamas.

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E. Sampling Technique

Among 200 students 120student nurses were selected by simple random sampling method.

F. Criteria for sample selection

1) *Inclusion Criteria:* The Students who are willing to participate in the study.

The Students who are willing to bring something new into existence.

G. Exclusion Criteria

The students who are not willing to utilize the leisure time by answering the tools.

H. Research tool and technique

The tool used for the research study was innovative abilities assessment tool to assess the innovative abilities of student nurses.
The tool consists of25 questions to assess the innovative abilities .

I. Description of the tool

The tool used for the study includes two section that is section I and section II.

1) *Section* Section: I had items related to demographic data consists of age, year of study, previous schooling, parent education, family income, area of residence.
2) *Section:* This comprised of innovative abilities assessment tool , which contains 25 questions to assess the innovative abilities of student nurses.
3) *Scoring: Procedure* The subjects were classified into three categories based on their innovative abilities. The score for the level of innovative abilities is calculated by innovative abilities assessment tool. The students are classified according to the range as follows.

95-100	Exceptionally innovative
65-94	Very innovative
40-64	Above Average
20-39	Average
10-19	Below average
Below 10	Non innovative

J. Data Collection Procedure

Before conducting the study, formal permission was obtained. The period of data collection was done for two weeks. The researcher introduced self to each subject and explained the purpose of the study. Investigator instructed the method of assessing the innovative ability.
Innovative Ability Assessment Tool was administrated and the innovative ability was assessed by assessing the students.

K. Plan for data analysis

Data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics.

L. Descriptive Statistics

Frequency percentage mean and standard deviation were used for the analysis.

M. Inferential Statistics

Chi – square was used to determine the association between demographic variables with the innovative ability.

N. Protection of human subjects

After the problem statement was approved formal permission was obtained before starting the study. The oral consent was obtained from each participants of the study before starting the data collection. Assurance was given to the subject that the anonymity of each

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individual would be obtained.

V. RESULTS

This section shows the result findings of the study which is based on data analysis and interpretation of data collected from the participants

The data collected during the present study were analysed based on the objectives formulated for the study. The objectives of the study were

To assess the innovative abilities among student nurses in Applied Medical Science College For Females Alnamas .To find out the association between innovative abilities and demographic characteristics such as age, year of study, previous schooling, parents education, family income, Area of residence.

A. Organization of the Findings

In order to find out the relationship between the variables and also to be assess the innovative ability the data gathered were tabulated, analyzed and interpreted using both descriptive and inferential statistics. The data are presented under the following headings.

Frequency and percentage distribution of sample characteristics of the study.

Findings related to frequency and distribution of innovative ability level of the participants.

Association between innovative ability and demographic variables such as age, year of study, previous education syllabus, parent education, family income, area of residence.

B. Frequency and percentage of sample characteristics of the study

A sample of 120student nurses were selected for the study. The demographic data collected include age, year of study, previous schooling, parent education, family income, area of residence**.**

Table-1 Frequency and percentage distribution of samples on selected demographic variables (N=120)

S.No	Demographic Data	Group (f)	Percentage (%)
1.	Age		
	17-18 years 5	23	19.16%
	18-19 years	40	33.33%
	19-20years	30	25%
	>20 years	27	22.5%
2.	Year of study		
	First year(Level 1& Level 2)	23	19.16%
	Second year (Level 3& Level 4)	40	33.33%
	Third year(Level 5& Level 6)	30	25%
	Fourth year(Level 7& Level 8)	27	22.5%
3.	Previous schooling		
	Government school	102	85%
	Private school	12	10%
	International school	6	5%
4.	Parents education		
	School	76	63.33%
	Degree	32	26.66%
	Professional	7	5.8%
	Others	5	4.16%
5.	Family Income		

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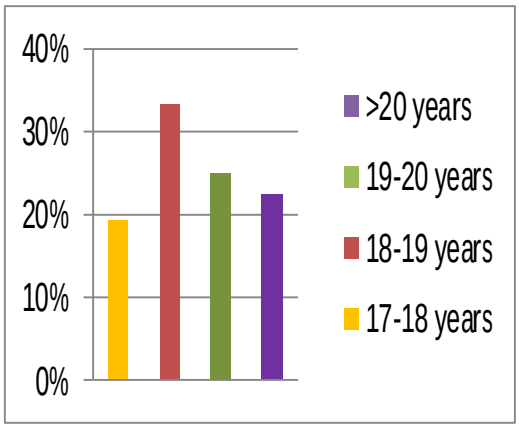
	Below SR.2000 Per month	8	6.6%
	SR.3000-6000/- Per month	25	20.83%
	SR.7000-9000/- Per month	55	45.83%
	Above SR.10,000 Per month	32	26.66%
6.	Area Of Residence		
	Urban	22	18.33%
	Rural	98	81.66%

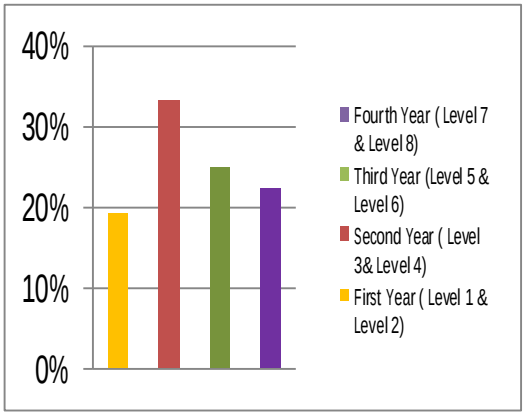
The data presented in table 1 shows that 19.16% of the participants were between the age of 17-18 years, 33.33% of the participants were between the age of 18-19 years, 25% of participants were between the age of 19-20 years, and 22.5% of the participants were above 20 years Regarding to year of study 19.16% of the students were from first year(Level 1& Level 2), 33.33% of the students were from second year(Level 3& Level 4), 25% of the students were from third year(Level 5& Level 6) and 22.5% of the students were from fourth year(Level 7& Level 8).

Regarding to the previous schooling, 85% of the students had education from Government school, 10% of the students had education from private school and 5% of the students had education from International school. Regarding the parents education, 63.33% were had school education, 26.66% were degree holders, 5.8% were professionals and 4.16% were others.

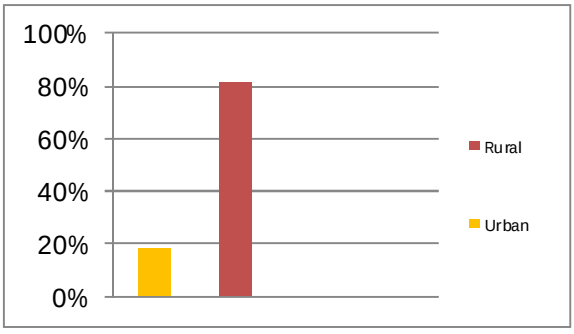
Regarding the family income, 6.6% were having below SR.2000/- per month, 20.83% were having between SR.3000-6000/- per month, 45.83% were having between SR.7000-9000/- per month and 26.66% were having above SR.10,000/- per month. Regarding the area of residence, 18.33% of the students are living is urban area, remaining 81.66% are living is rural area.



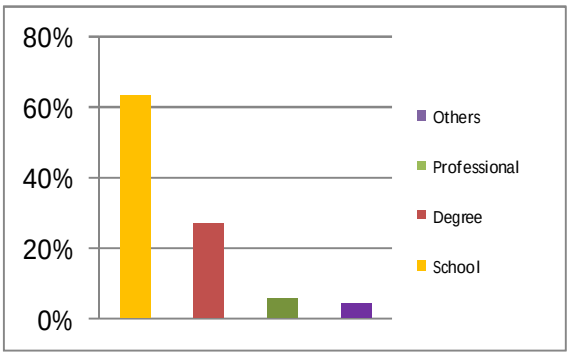
Distribution Of Participants According To Their Age



Distribution Of Participants According To Their Year Of Study



Distribution Of Participants According To Their Previous Schooling



Distribution Of Participants According To Their Parents Education

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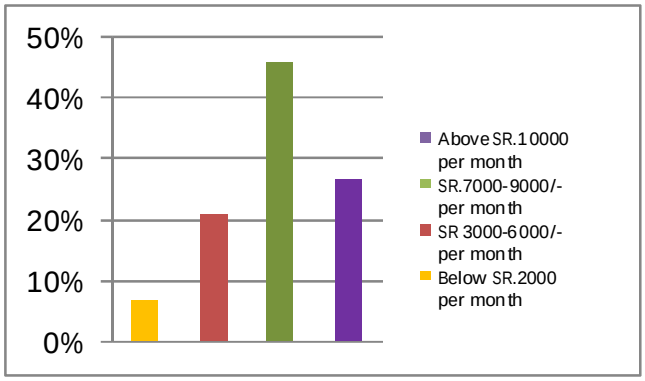

Distribution Of Participants According To Their Area Of Residence

Findings related to frequency and distribution of level of innovative abilities of participants.
It deals with distribution of participants based on their level of innovative abilities

Table Distribution of the Participants According to the Level of Innovative Ability:

Level of Innovative Ability	Frequency (F)	Percentage (%)
Exceptionally innovative	9	7.5%
Very innovative	17	14.16%
Above Average	39	32.5%
Average	43	35.83%
Below average	8	6.6%
Non innovative	4	3.3%

The data presented in table 2 reveals that 9 participants (7.5%) are exceptionally innovative , 17 participants (14.16%) are very innovative, 39 participants (32.5%) are having above average level , 43 participants (35.83%) are having average level , 8 participants (6.6%) are having below average level & 4 participants (3.3%) are non innovative.

Distribution Of Participants According To Their Level Of Innvative Ability

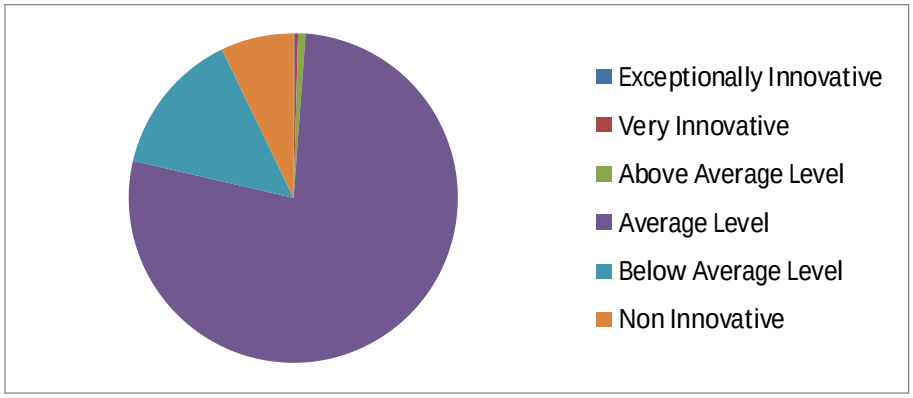

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Table 3

Distribution of overall mean and standard deviation

Variables	Mean	Standard deviation
Level of Innovative Ability	48.80	25.16

The above table 3 shows that the mean value of the level of innovative ability of the participants was 48.80, standard deviation was 25.16.

Table 4

Distribution of association between the innovative ability level and selected demographic characteristics of the participants.

S.No	Category	Total N =120	Above mean	Below mean	χ^2	p-value
1.	Age					
	17-18 years	23	9	14	8.807df =3	P=0.0319
	18-19 years	40	16	24		The result is significant at p<0.05
	19-20years	30	21	9		
	>20 years	27	10	17		
2.	Year of study					
	First year(Level 1& Level 2)	23	9	14	8.807df =3	P=0.0319
	Second year (Level 3& Level 4)	40	16	24		The result is significant at p<0.05
	Third year(Level 5& Level 6)	30	21	9		
	Fourth year(Level 7& Level 8)	27	10	17		
3.	Previous schooling					
	Government school	102	42	60	8.681df =2	P=0.0130 The result is significant at p<0.05
	Private school	12	10	2		
	International school	6	4	2		
4.	Parents education					
	School	76	24	52	22.72df =3	P=0.000046 The result is significant at p<0.05
	Degree	32	26	6		
	Professional	7	4	3		
	Others	5	2	3		
5.	Family Income					
	Below SR.2000 Per month	8	5	3	7.573 df=3	P=0.0557. The result is *not* significant at $p < .05$.
	SR.3000-6000/- Per month	25	13	12		

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	SR.7000-9000/- Per month	55	37	18		
	Above SR.10,000 Per month	32	12	20		
6.	Area Of Residence				0.661df =1	P=0.4160. The result is *not* significant at $p < .05$.
	Urban	22	17	5		
	Rural	98	39	59		

Data on table 4 shows innovative level with selected variables and chi – square test was computed. The findings revealed that there was significant association between innovative ability level and age (χ^2= 8.807 , df=3, P=0.0319) , year of study (χ^2= 8.807 , df=3, P=0.0319), previous schooling (χ^2= 8.681, df=2, P=0.0130) , parents education (χ^2= 22.72, df=3, P=0.000046). But there is no association between innovative ability level and family income(χ^2=7.573, df=3, P=0.0557.),area of residence (χ^2=0.661, df=1, P=0.4160) .

VI. RECOMMENDATION

Based on the study, the investigator proposed following recommendations:
To improve the innovative abilities of nursing students, they can repeatedly encourage idea generation , cross-fertilize ideas , building self-efficacy, constantly asking question based on assumptions and imagination and other viewpoints techniques in a classroom .
The nursing students can boost their innovative ability by following scientifically proven ways, such as…
Travel exposure to new places and cultures which expands your mind
Get rid of assumptions in order to come up with new idea
Eat breakfast
Read often in order to become an expert on a topic
Take risks to build your skill set , even if you don't succeed each time
Work on different projects at the same time
Squeeze your left hand. It'll activate the right hemisphere of your brain, which is said to be more creative
A comparative study can be carried out in different settings.
A prospective study can be conducted to find out efficient leaders in nursing practice, education, administration & management

VII. CONCLUSIONS

A descriptive study was carried out to assess the innovative ability of student nurses of Applied Medical Science College For Females Alnamas, The total number of students in the college is around 200. Among this 200 students 120 students were selected for the study by simple random sampling techniques. After getting the formal permission , the innovative ability level of the student nurses were assessed by using questionnaire which consist of two section , first section consist of questions related demographic data such as age , year of study, previous schooling, parent education, family income, area of residence. Second section consist of innovative abilities assessment tool shows innovative ability .After collecting the data a detailed data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics. Regarding the level of innovative ability ,the study findings reveals that 9 students (7.5%) are exceptionally innovative , 17 students (14.16%) are very innovative, 39 students (32.5%) are having above average level , 43 students (35.83%) are having average level , 8 students (6.6%) are having below average level & 4 p students (3.3%) are non innovative. Regarding the association between innovative ability and demographic characteristics such as age, year of study, previous schooling, parents education, family income, Area of residence, the study findings revealed that there was significant association between innovative ability level and age (χ^2= 8.807 , df=3, P=0.0319) , year of study (χ^2= 8.807 , df=3, P=0.0319), previous schooling (χ^2= 8.681, df=2, P=0.0130) , parents education (χ^2= 22.72, df=3, P=0.000046). But there is no association between innovative ability level and family income(χ^2=7.573, df=3, P=0.0557.),area of residence (χ^2=0.661, df=1, P=0.4160) .

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VIII. ACKNOWLEDGMENT

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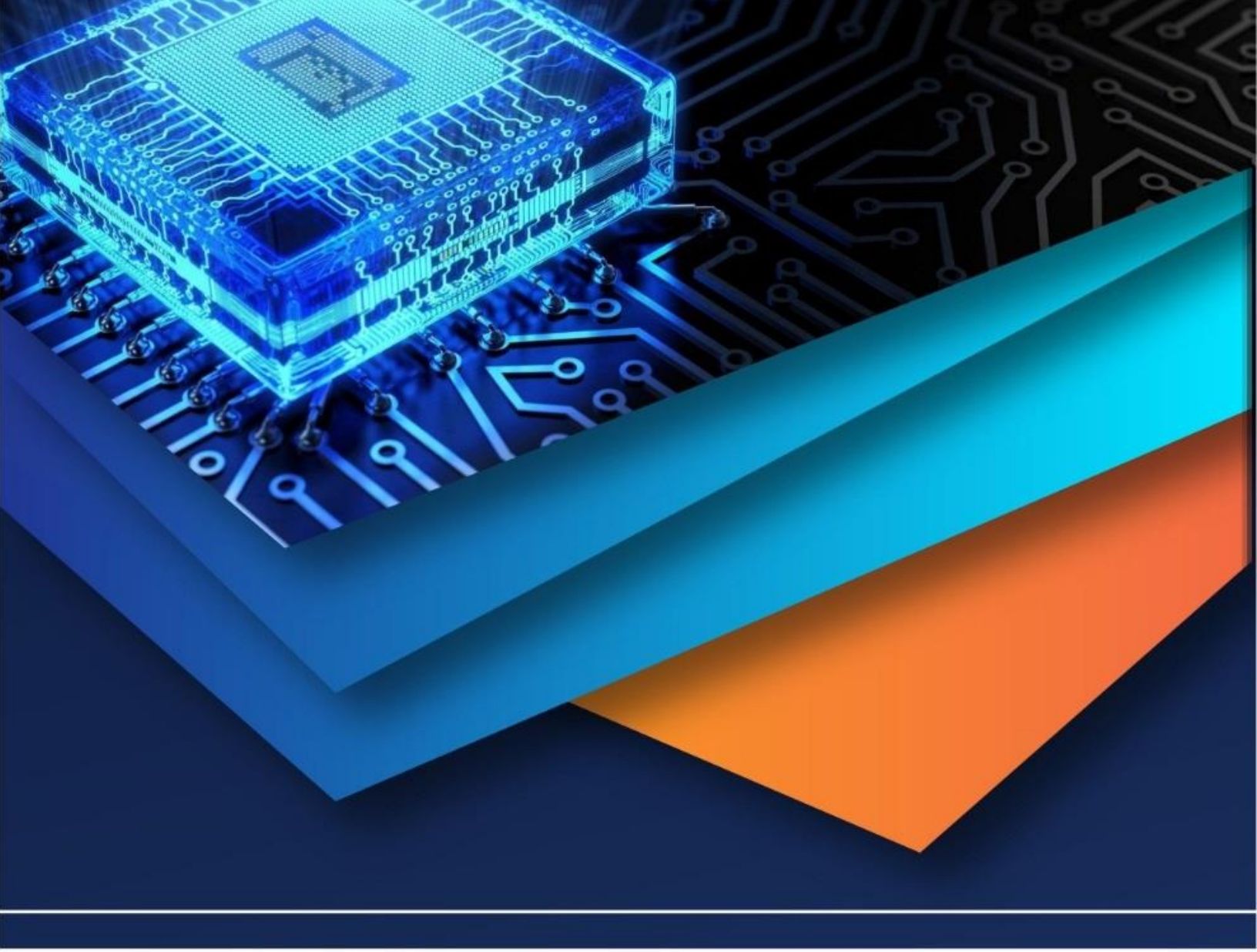

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