EXPLORING THE IMPACT OF AI BASED PERSONALISED LEARNING SYSTEMS FOR IMPROVING STUDENTS OUTCOMES.

Dissertation submitted to St. Teresa's College (Autonomous) Ernakulam,

Affiliated to Mahatma Gandhi University in partial completion of

PGDM – BUSINESS ANALYTICS

Submitted by NIYA ELIZABATH MT Reg no: SM22PGDM009

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COLLEGE WITH POTENTIAL FOR EXCELLENCE

Nationally Re-Accredited At 'A++' Level (Fourth Cycle)

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December 2023

ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM

CERTIFICATE

1.This is to certify that the dissertation entitled " **EXPLORING THE IMPACT OF AI BASED PERSONALISED LEARNING SYSTEMS FOR IMPROVING STUDENTS OUTCOMES**" is a bonafide record of the project work carried out by NIYA ELIZABATH MT (Reg: SM22PGDM009) final year student **of PGDM - Business Analytics** under my supervision and guidance during the academic year 2022-2024. The project report represents the work of the candidate and is hereby approved for submission.

Ms. PARVATHY P S

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Countersigned

Principal

DECLARATION

I hereby declare that the project entitled "**EXPLORING THE IMPACT OF AI BASED PERSONALISED LEARNING SYSTEMS FOR IMPROVING STUDENTS OUTCOMES**" submitted to St. Teresa's College (Autonomous), Ernakulam, is a record of an original work done by me under the guidance of **Ms. Parvathy P S, St. Teresa's College, Ernakulam,** and this project work is submitted in the partial fulfilment of the requirement of the award of the Degree of **PGDM-Business Analytics.** The result embodied in this project report has not been submitted to any other University or Institute for the award of any Degree or Diploma.

NIYA ELIZABATH MT

Place: Ernakulam

Date:

ACKNOWLEDGEMENT

An undertaking of work life - this is never an outcome of a single person; rather it bears the imprints of some people who directly or indirectly helped me in completing the present study. I would be failing in my duties if I don't say a word of thanks to all those who made my training period educative and pleasurable one.

First of all, I thank almighty God for his mercy and love which kept me in good health and sound mind and helped me to complete the project work successfully, and gave me strength and inspiration I am grateful to **Dr Anu Raj** Head of the Department of Management Studies, and all other members of the faculty of the Department for all the support and help given to me in the preparation of this project. I must also thank my faculty guide **Ms. Parvathy P S**, St. Teresa's College, Ernakulam, for her continuous support, mellow criticism, and able directional guidance during the project.

Finally, I would like to thank all lecturers, friends, and my family for their kind support and all who have directly or indirectly helped me in preparing this project report. And at last, I am thankful to all divine light and my parents, who kept my motivation and zest for knowledge always high through the tides of time.

NIYA ELIZABATH MT

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INTRODUCTION

1.1 OVERVIEW

In today's rapidly evolving educational landscape, the integration of technology is revolutionizing the way we learn and teach. One of the most promising developments in this arena is the utilization of AI-based personalized learning systems. This project, titled "Exploring the Impact of AI-based Personalized Learning Systems on Student Outcomes," seeks to delve into the profound implications of these systems on the educational experiences and achievements of students. With AI taking center stage in education, it is critical to understand the potential benefits, challenges, and ethical considerations associated with this transformation.

Personalized learning, at its core, represents a pedagogical approach that tailors education to individual student needs. It recognizes that every student is unique, with distinct strengths, weaknesses, and learning styles. AI brings a new dimension to personalized learning by harnessing the power of data analytics and machine learning. This allows for the dynamic customization of content, pace, and resources, adapting to each student's specific requirements. The result is a more individualized, engaging, and effective learning experience.

The successful implementation of AI in education involves the integration of AI-powered tools and platforms that facilitate personalized learning. These tools encompass a wide range of educational technology, from adaptive learning systems that modify content based on student progress to intelligent tutors capable of providing real-time assistance and feedback. Real-world examples from educational institutions worldwide showcase the diverse applications of AI in enhancing the learning process.

Central to this research is the exploration of how AI-based personalized learning systems influence student outcomes. As we delve into this domain, it becomes increasingly evident that these systems hold immense transformative potential. Firstly, they have demonstrated the ability to significantly enhance student engagement. By offering interactive content, incorporating elements of gamification, and providing timely, tailored feedback, AI systems sustain student interest and motivation in ways that were previously challenging to achieve.

Furthermore, AI plays a pivotal role in improving knowledge retention. Through continuous assessment of individual progress and real-time adjustments to the learning path, AI can reduce dropout rates and ensure that students remain on track. Most significantly, AI-driven personalized learning systems correlate with enhanced academic performance. They have been associated with improved grades, higher standardized test scores, and overall academic achievement, making them a powerful ally for educators striving to facilitate meaningful learning experiences.

The promise of AI in education is accompanied by challenges and ethical considerations. Chief among these is the critical issue of data privacy. The collection and utilization of student data within AI systems require stringent safeguards to protect the privacy and security of learners. Additionally, there is a risk that AI could exacerbate educational disparities if not deployed equitably. This raises essential questions about inclusivity, accessibility, and the

need to ensure that all students, regardless of their background, have equitable access to the benefits of AI-driven personalized learning.

The core objective of this research is to explore the impact of AI-based personalized learning systems on student outcomes. As we delve into this realm, it becomes evident that these systems have the potential to bring about transformative changes. Firstly, they have been found to significantly enhance student engagement by offering interactive content, incorporating elements of gamification, and providing timely, tailored feedback. This level of engagement is vital for sustaining student interest and motivation.

Moreover, AI has the potential to improve knowledge retention by continuously assessing individual progress and adapting content accordingly. It plays a pivotal role in reducing dropout rates and ensuring that students remain on track. Perhaps most significantly, AI-driven personalized learning systems correlate with enhanced academic performance. They have been associated with improved grades, standardized test scores, and overall achievement, making them a powerful tool for educators in their quest to facilitate learning.

While the promise of AI in education is substantial, it does not come without challenges and ethical considerations. Data privacy is a paramount concern, as the collection and utilization of student data in AI systems require stringent safeguards. Additionally, there is a risk of exacerbating educational disparities if AI is not deployed equitably. This raises critical questions about inclusivity, accessibility, and ensuring that all students have access to the benefits of AI-driven personalized learning.

In a world where technology is reshaping our daily lives, it is crucial to understand how AI-based personalized learning systems are impacting the education sector. This research project aims to contribute to this understanding, shedding light on both the potential and the challenges of AI in education. In doing so, it plays a pivotal role in the ongoing discourse on the future of education in a digitally connected world, where AI is an increasingly central player in shaping pedagogical approaches and ultimately, student success.

1.1 STATEMENT OF PROBLEM

The traditional one-size-fits-all education system often fails to address the diverse learning needs of students. To enhance educational outcomes, it is crucial to investigate the potential impact of AI-driven personalized learning systems. This research aims to analyze the effectiveness of AI personalized learning systems in improving student performance, engagement, and overall educational outcomes. The study will address questions related to the implementation, adaptability, and the potential benefits and challenges associated with integrating AI technology in education.

1.2LITERATURE REVIEW

The emergence of personalized learning systems has ushered in a transformative era in education. These systems harness technology to individualize instruction, offering tailored content, pacing, and support, with the aim of improving student outcomes. This comprehensive literature review investigates the body of research surrounding the impact of personalized learning systems, considering academic achievement, student engagement, and the multifaceted challenges of their implementation.

Yubo Zhang, Gang Qin, Lijun Cheng, K Marimuthu, B Santhosh Kumar

Journal of Multiple-Valued Logic & Soft Computing 36, 2021

Interactive Smart Educational System Using AI for Students in the Higher Education Platform: In the fast growing world, Smart education is an interactive culture and broad concept of higher education. It represents advanced technology that enables students to be more accurate, productive and efficient to process information and skills. Smart education's fundamental problems are distracted students from studying and unreliable learning resources to poor academic performance. In this paper, Artificial Intelligence Assisted Interactive Smart Education Framework (AIISE) has been proposed to improve student interaction and improve student academic performance in smart education in higher education. Artificial intelligence (AI) is used in the interactive system for students engaging their studies and enhance the student and teacher interaction healthy environment in higher education. The Proposed AIISE provides reliable learning materials and a feedback system for students to analyze smart education learning performance in higher education. The experimental results show that improved teacher and student interaction is efficient, high accuracy of analysis of academic student performance.

Huiling Qin, Guan Wang 2022 11th International Conference on Educational and Information Technology (ICEIT), 62-66, 2022 .

Benefits, challenges and solutions of Artificial Intelligence applied in education: With the rapid development of artificial intelligence, it brings several novel ideas for further developing education. In this paper, we first introduce the benefits of artificial intelligence

applied in education from the perspectives of students, teachers and educational administrators. To be specific, artificial intelligence can help students achieve personalized learning, help teachers conduct targeted teaching and help educational administrators make decisions. However, artificial intelligence is a double-edged sword, and thus we also analyze four serious challenges caused by the application of artificial intelligence in education, including incomplete algorithm design, insufficient labelled data, excessive technical dependence and unreliable security guarantee. To promote the healthy development of artificial intelligence in education, we finally explore the feasible solutions to the proposed challenges in turn, which are user-driven design, scientific labelling, rational use and security .

Rita MA Bezerra, Dalila DurãEs, Paulo Novais NovaisProceedings of the 2022 5th International Conference on Education Technology Management, 237-242, 2022

Survey for Smart and Adaptative Education: Technological media has become a vital component for educators, enabling greater efficiency in lesson planning and preparation, providing active repositories of student work, as well as more personalised learning for students. The construction of intelligent systems, which encompass the use of these technologies, allow the learning process to be simpler for the student and the teaching process for the teacher to be more efficient. Thus, ambient intelligence will be the element used to connect the classroom to the intelligent classroom and used to adapt the learning process. With the rapid development of the Internet of Things (IoT) and Artificial Intelligence (AI), their applicability in education will be easy to implement and can solve some defects of the traditional education model and the computer-aided system teaching model, and at the same time make learning more motivating and enticing for the student. The aim of this research is to identify the most recent studies on the application of artificial intelligence in education and to make a comparative study of the different models and existing applications that use this technology to promote learning efficiently.

Shijin Li, Xiaoqing Gu Educational Technology & Society 26 (1), 187-202, 2023

A Risk Framework for Human-centered Artificial Intelligence in Education: With artificial intelligence (AI) is extensively applied in education, human-centered AI (HCAI) has become an active field. There although has been increasing concern about how to systematically enhance the AI applications effect, AI risk governance in HCAI education has not been discussed yet. This study adopted literature meta-analysis, along with the Delphi and analytic hierarchy process (AHP) methods in order to establish the risk framework and calculate the index weight of HCAI education. The results confirm that the risk framework includes eight indicators, which respectively are misunderstanding of the HCAI concept (MC), misuse of AI resources (MR), mismatching of AI pedagogy (MP), privacy security risk (PSR), transparency risk (TR), accountability risk (AR), bias risk (BR), and perceived risk (PR). Meanwhile, the eight indicators are divided into four categories such as HCAI concept, application process, ethical security, and man-machine interaction. Moreover, the trend of risks types indicates that more than half of the articles consider only three or less risks types, and the evolution results of risks indicators gradually increased between 2010 and 2021. Additionally, the weights of the eight indicators are MP> MR> AR> PSR> TR> PR> BR> MC. Results obtained could provide theoretical evidence and development.

Shaofeng Wang, Huanhuan Wang, Yanshuang Jiang, Ping Li, Wancheng YangInteractive Learning Environments, 1-17, 2021

Understanding students' participation of intelligent teaching: an empirical study considering artificial intelligence usefulness, interactive reward, satisfaction, university …: The new era of technologies represented by artificial intelligence is profoundly reconstructing the field of education. The integration of emerging technologies in intelligent teaching provides new approaches for improving teaching effectiveness and enriching learning experiences. Today, we know little about students' participation in intelligent teaching with the help of artificial intelligence. In this study, we investigated the mechanism of students' involvement in intelligent teaching. We designed a questionnaire for the confirmatory model of the participation of intelligent teaching through literature research and content analysis. After modeling and empirical analysis with the help of partial least structural equation modeling (PLS-SEM) software (SmartPLS 3.0), we found that: satisfaction, university support, perceived enjoyment, and interactive rewards all indirectly affect intelligent teaching participation through mediating variables (i.e., participation intention and interactivity); participation intention and interactivity directly and positively affect intelligent teaching participation; artificial intelligence usefulness positively moderates the relationships between the two mediating variables (participation intention, interactivity) and intelligent teaching participation. Based on the results of the data analysis, this study offered corresponding optimization strategies: improving students' participation experience in intelligent teaching through using the new technology "artificial intelligence"; implementing the teaching philosophy of "teaching for learning, teaching for fun"; applying "student-oriented" approaches to improve the participation intention. The aim is to make education in the future more diverse, equitable, and high-quality.

1.3 SIGNIFICANCE OF THE STUDY

Understanding the implications of AI-based personalized learning systems is of great importance for education. These systems have the potential to revolutionize the way students learn by tailoring instruction to their unique needs, potentially enhancing academic performance and educational efficiency. The concept of personalization in education is central, allowing AI to adapt content, pacing, and teaching methods to match each student's learning style and abilities. Furthermore, these systems offer valuable data-driven insights into student performance and learning patterns, empowering educators and institutions to make informed decisions about curriculum design and teaching strategies. This research is pivotal in shaping the future of education, as AI's impact can lead to innovative approaches to teaching and learning. It's also crucial to ensure that AI contributes to equity and inclusion in education rather than exacerbating disparities, making this study a cornerstone in the evolution of education and technology.

1.4 SCOPE OF THE STUDY

The scope of this research is to assess the effectiveness of AI-based personalized learning systems in improving student outcomes. With advancements in artificial intelligence (AI) and

its application in the education sector, personalized learning systems have gained attention as a promising approach to enhance student engagement and academic achievement. This study aims to evaluate the impact of AI-based personalized learning systems on student outcomes, including academic performance, knowledge retention, and overall learning experience.

1.5 OBJECTIVES OF THE STUDY

● Evaluate the impact of AI-based personalized learning systems on student academic performance

● Investigate the overall learning experience and student engagement with AI-based personalized learning systems

● Identify the perceived benefits and challenges of implementing AI-based personalized learning systems

● To provide recommendations for the implementation and improvement of AI-based personalized learning systems based on the findings of the study.

1.7 RESEARCH METHODOLOGY

This research project will employ a mixed-methods approach to investigate the influence of AI-based personalized learning systems on student outcomes. The research will begin with a thorough review of existing literature to establish the context and identify research gaps. Data collection will involve collaborating with educational institutions to gather data on student performance, engagement, and motivation both before and after the implementation of the AI system. Ethical considerations and privacy safeguards will be integral to this data collection process. The collected data will be subjected to advanced statistical analysis to assess the impact of the AI system. The results will be interpreted in light of the research questions and existing literature. Recommendations for educational institutions, policymakers, and AI developers will be drawn based on the findings. The study will also acknowledge its limitations and suggest directions for future research in this dynamic field.

1.8 STATISTICAL PACKAGES

SPSS SOFTWARE

SPSS is a widely used program for statistical analysis in social science. It is also used by market researchers, health researchers, survey companies, government, education researchers, marketing organizations, data miners, and others. In addition to statistical analysis, data management (case selection, file reshaping, creating derived data) and data documentation (a metadata dictionary is stored in the datafile) are features of the base software. SPSS datasets have a two-dimensional table structure, where the rows typically represent cases (such as individuals or households) and the columns represent measurements (such as age, sex, or 6 household income). The graphical user interface has two views which can be toggled by clicking on one of the two tabs in the bottom left of the SPSS Statistics window. The 'Data View' shows a spreadsheet view of the cases (rows) and variables (columns). The 'Variable View' displays the metadata dictionary where each row represents a variable and shows the variable name, variable label, value label(s), print width, measurement type, and a variety of other characteristics. Cells in both views can be manually edited, defining the file structure and allowing data entry without using command syntax. This may be sufficient for small datasets. Larger datasets such as statistical surveys are more often created in data entry software, or entered during computer-assisted personal interviewing, by scanning and using optical character recognition and optical mark recognition software, or by direct capture from online questionnaires. These datasets are then read into SPSS.

M S EXCEL

In Excel, charts are used to make a graphical representation of any set of data. A chart is a visual representation of the data, in which the data is represented by symbols such as bars in a bar chart or lines in a line chart. Excel provides you with many chart types and you can choose one that suits your data or you can use the excel recommended charts option to view charts customized to your data and select one of those. However, if your data analysis results can be visualized as charts that highlight the notable points in the data, the audience can quickly grasp. It also leaves a good impact on your presentation style.

1.9 LIMITATIONS OF THE STUDY

The exploration of the Impact of AI-based Personalized Learning Systems on Student Outcomes presents several significant limitations. These include concerns about data privacy, potential algorithm bias, unequal access to the technology, the risk of reducing teacher-student interaction, limitations in content coverage, challenges in measuring the true impact, ethical dilemmas, resistance to change, the dynamic nature of education, financial costs, and the limited availability of long-term studies. Addressing these limitations is essential to harness the potential benefits of AI in education while ensuring equitable, ethical, and effective implementation.

CHAPTER-2

INDUSTRY AND COMPANY PROFILE

2.1 INDUSTRY PROFILE

The industry landscape for exploring the impact of AI-based personalized learning systems on student outcomes is marked by the dynamic and evolving field of educational technology, commonly referred to as EdTech. This sector has experienced substantial growth in recent years, driven by the demand for innovative solutions to enhance the quality of education. Within EdTech, AI-based personalized learning systems have gained prominence as a transformative subset, aiming to revolutionize the way students learn and educators teach.

EdTech offers a diverse array of solutions, ranging from online learning platforms to virtual classrooms and AI-driven systems. The primary goal of these technologies is to improve learning outcomes by leveraging artificial intelligence and data-driven insights to create tailored educational experiences for each student. By personalizing the learning journey, these systems aspire to address the unique needs and preferences of individual learners.

Advancements in technology, particularly in AI and machine learning, are at the heart of the EdTech industry. These technologies enable the development of adaptive, data-driven solutions capable of adjusting to the specific requirements of each student, making education more efficient and engaging. EdTech transcends geographical boundaries, extending access to quality education to students globally. It has become a critical tool for bridging gaps in educational accessibility, offering remote learning opportunities that reach diverse populations.

Investment and funding within the EdTech sector have grown significantly, underscoring the industry's potential for impact and expansion. Venture capitalists and educational institutions alike are actively supporting startups and initiatives that contribute to the growth of this industry. This financial backing further emphasizes the importance and potential of EdTech.

Nonetheless, the industry faces its share of challenges and concerns. These include issuesrelated to data privacy, the digital divide, equitable access to technology, and debates about the quality of online education compared to traditional learning methods. Governments and educational institutions are also becoming increasingly involved, developing policies and standards to regulate and ensure the quality and security of EdTech offerings.

A notable aspect of EdTech is its adaptability across various educational levels. It caters not only to K-12 and higher education but also to lifelong learners and professionals seeking continuous education and skills development. The concept of lifelong learning is becoming increasingly relevant in today's rapidly changing job market, making EdTech solutions crucial for upskilling and retraining.

Research and evaluation are essential components of the EdTech industry. Projects like the one focused on exploring the impact of AI-based personalized learning systems on student outcomes play a crucial role in assessing the effectiveness of these innovative solutions. They contribute to the ongoing evolution of EdTech, ensuring that it remains aligned with the goals of improving educational experiences and outcomes for students of all ages and backgrounds.

2.2 COMPANY PROFILE

Major Platforms focused on AI based personalised learning systems and educational technology

Khan Academy

- Website: www.khanacademy.org

- Khan Academy is a non-profit organization that provides free, world-class education for anyone, anywhere. They use AI to personalize learning paths for students in subjects like math, science, and humanities.

Duolingo

- Website: www.duolingo.com

- Duolingo is a language-learning platform that uses AI to tailor lessons to individual learners. It adapts to your progress and offers a personalized language-learning experience.

DreamBox

- Website: www.dreambox.com

- DreamBox is an AI-driven platform designed for K-8 math education. It adapts to each student's proficiency level and provides a personalized math curriculum.

SMART Learning Suite - Website: www.smarttech.com

- SMART Learning Suite is a platform that combines interactive displays, lesson delivery software, and learning management tools. It incorporates AI for personalized learning and assessments.

McGraw-Hill Education's ALEKS

- Website: www.aleks.com

- ALEKS (Assessment and Learning in Knowledge Spaces) is an AI-powered platform that adapts math and science content to the individual needs of each student.

Cognii

- Website: www.cognii.com

- Cognii specializes in AI-driven virtual tutors that provide natural language assessment and feedback to improve student writing and critical thinking skills.

CHAPTER – 3

DATA ANALYSIS AND INTERPRETATION

3.1 DISCRIPTIVE ANALYSIS

3.1.1GENDER WISE CLASSIFICATION OF RESPONDENTS

TABLE 3.1

GENDER	RESPONDENTS	PERCENTAGE
MALE	105	46.7%
FEMALE	120	53.3%

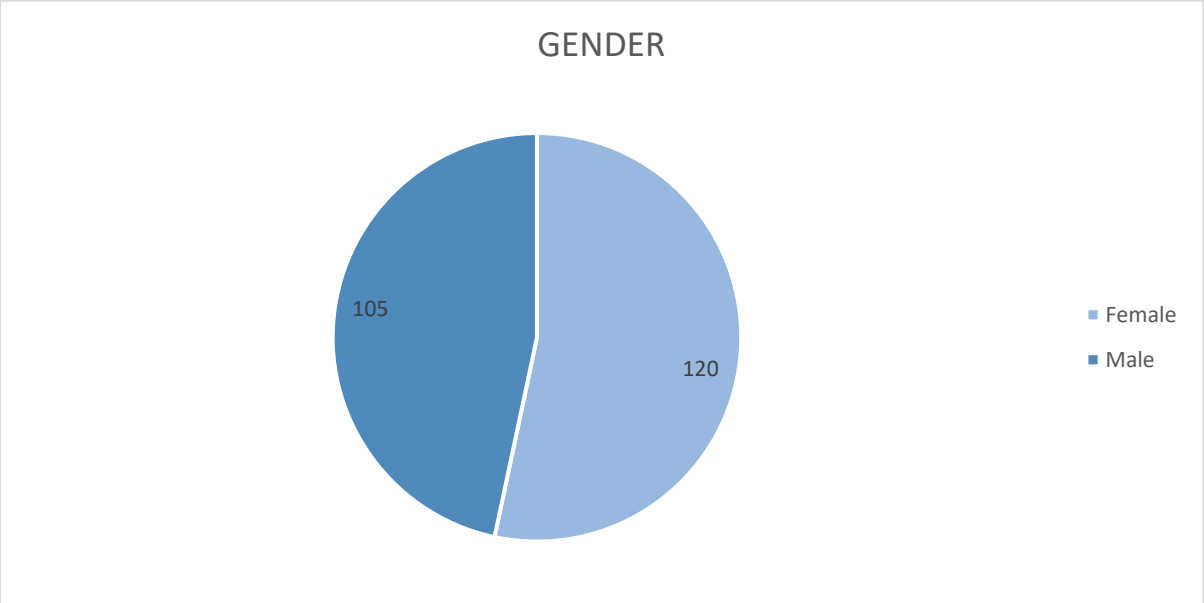

Fig 3.1

INTERPRETATION

From the above table and figure, we can analyse that 46.7% of the respondents are male and 53.3% of the respondents are female. The survey was conducted from students within Kochi city.

3.1.2 AGE WISE CLASSIFICATION OF RESPONDENTS

TABLE 3.2

AGE	RESPONDENTS	PERCENTAGE
UNDER 18	0	0
18-24	219	97.3%
25-34	4	1.8%
ABOVE 35	2	0.9%

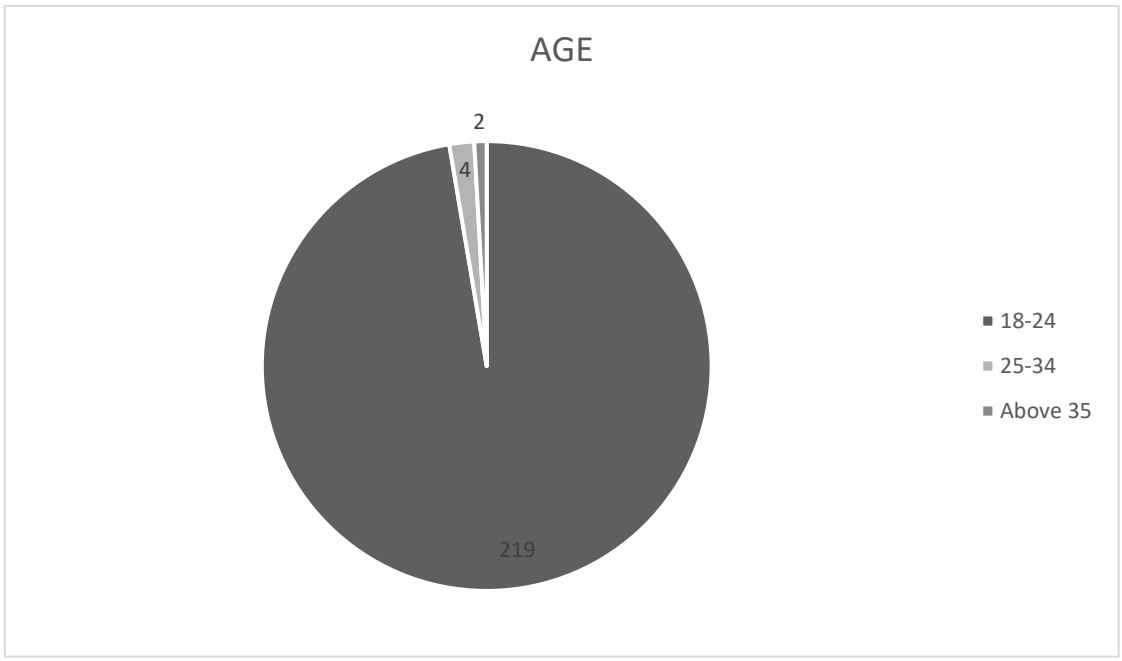

Fig 3.2

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents in the age group of 18 - 24 which has a percentage of 97.3% which is the highest respondents. In the age group of 25-34 it is 1.8% and in the age group of Above 35 have a percentage of 0.8%. It is evident from the survey that the young generation has actively participated in the research.

3.1.3 EDUCATIONAL BACKGROUND

TABLE 3.3

QUALIFICATION	RESPONDENTS	PERCENTAGE
POST GRADUATION	95	42.2%
UNDER GRADUATION	121	53.8%
HIGHER SECONDARY	6	2.7%
OTHER	3	1.3%

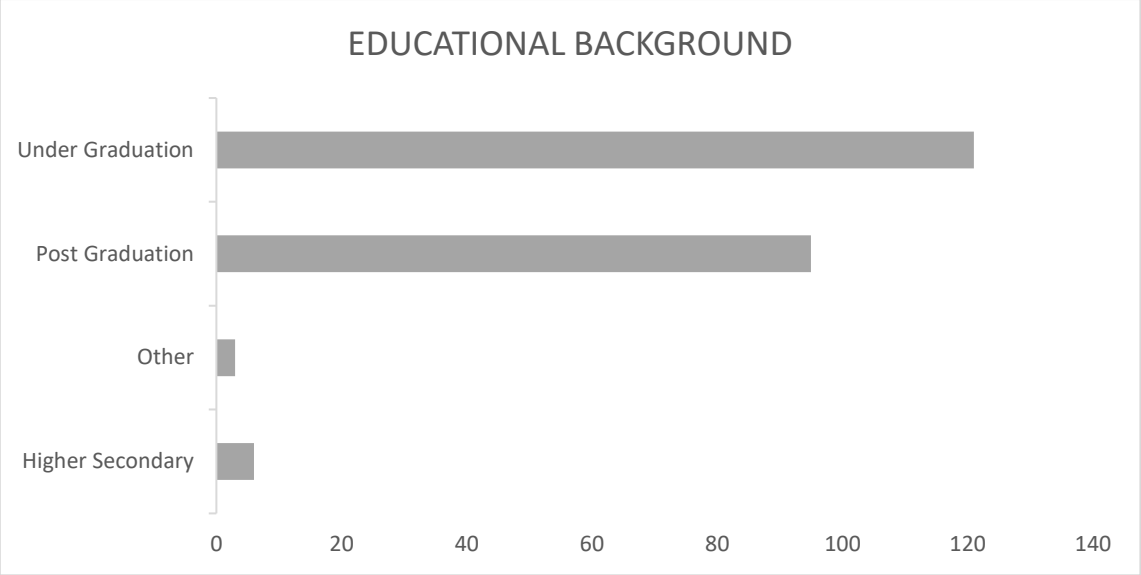

Fig 3.4

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students highest response 53.8% are under graduates.42.2% are post graduates. It is evident from the survey that the students who pursuing PG and UG has actively participated in the research.

3.1.4 AI PLATFORMS FAMILIARITY

TABLE 3.3

AI FAMILIARITY	RESPONDENTS	PERCENTAGE
LITTLEMORE FAMILIAR	106	47.1%
NOT FAMILIAR AT ALL	14	6.2%
SOMEWHAT FAMILIAR	79	35.1%
VERY FAMILIAR	26	11.6%

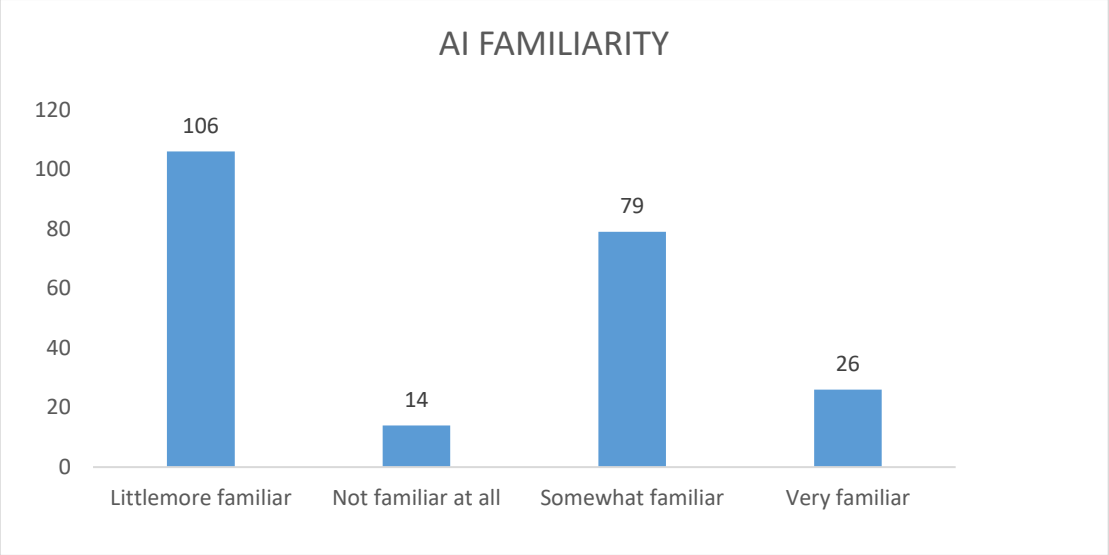

Fig 3.4

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has a percentage of 47.1% are little more familiar with AI platforms which is the highest respondents. If 35.1% are somewhat familiar, 11.6% are very familiar, 6.2% are not familiar at all. It is evident from the survey that students has actively participated in the research.

3.1.5 FEATURES OF AI PLATFORMS MORE LIKED

TABLE 3.5

FEATURES	RESPONDENTS	PERCENTAGE
24/7 AVAILABILITY	152	67.6%
ASSESSMENT AND FEEDBACK IN ASSIGMENTS	23	10.2%
INTERACTIVE EXCERCISES AND QUIZZES	15	6.7%
REAL TIME PERSONALIZED RESULTS	24	10.7%
OTHER	11	4.8%

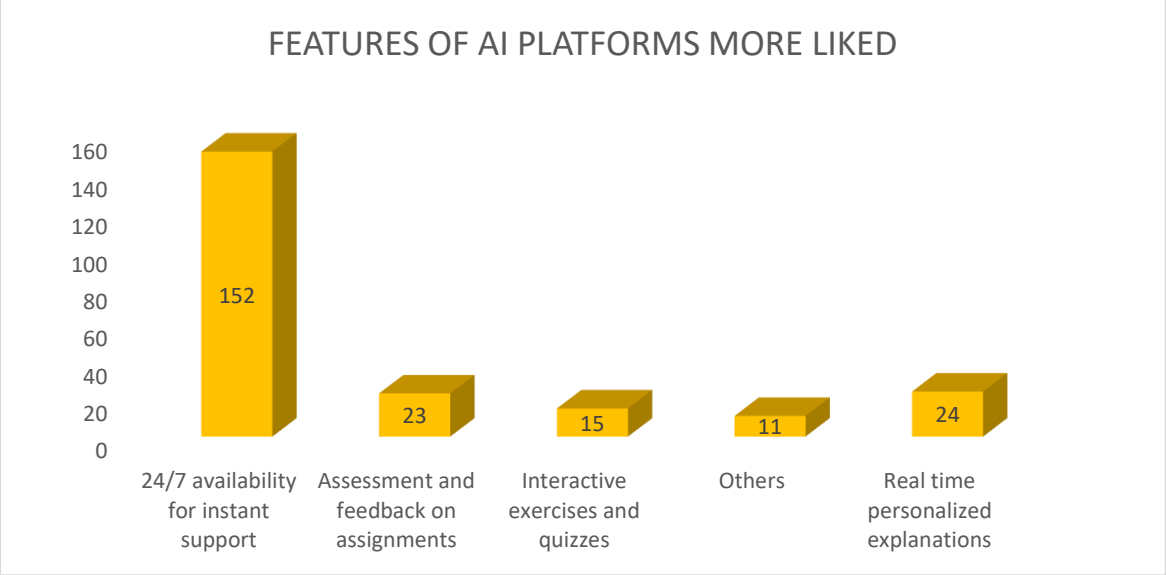

Fig 3.5

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has a percentage of 67.6% of respondent are like to use AI platform based on their 24/7 availability,10.2% are based of assessments in assignments, 10.7% real time results,6.8 % are due to interactive excercises , 4.8% respondents are other reasons It is evident from the survey that students has actively participated in the research.

3.1.6 POSITIVE CHANGES IN ACADEMICS DUE TO AI PLATFORMS

TABLE 3.6

CHANGES	RESPONDENTS	PERCENTAGE
NO CHANGES	9	4%
NO NOTICABLE CHANGES	54	24%
SIGNIFICANTLY IMPROVED	42	18.7%
SOMEWHAT IMPROVED	120	53.3%

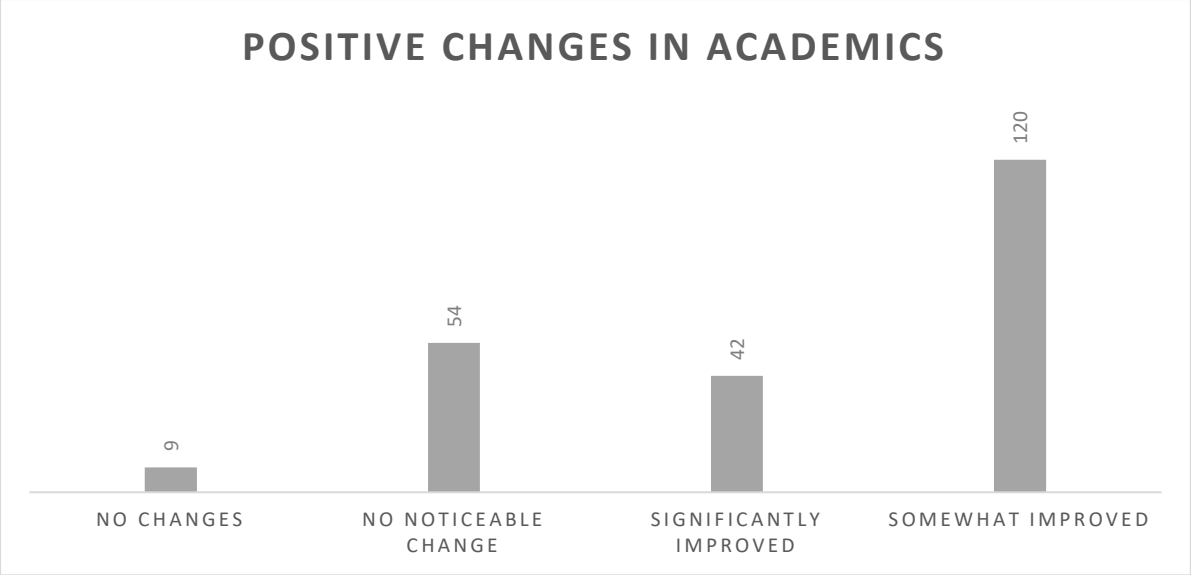

Fig 3.6

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has a percentage of 53.3% of respondents have positive changes and somewhat improvement in their academic performance .24% of people has no noticeable changes .only 4% has no changes have mentioned.

3.1.7 TRUST OF AI PLATFORMS AMONG STUDENTS

TABLE 3.7

HOW MUCH THEY TRUST AI PLATFORMS	RESPONDENTS
COMPLETELY TRUST	26
NOT TRUST	10
MOSTLY TRUST	109
SLIGHTLY TRUST	80

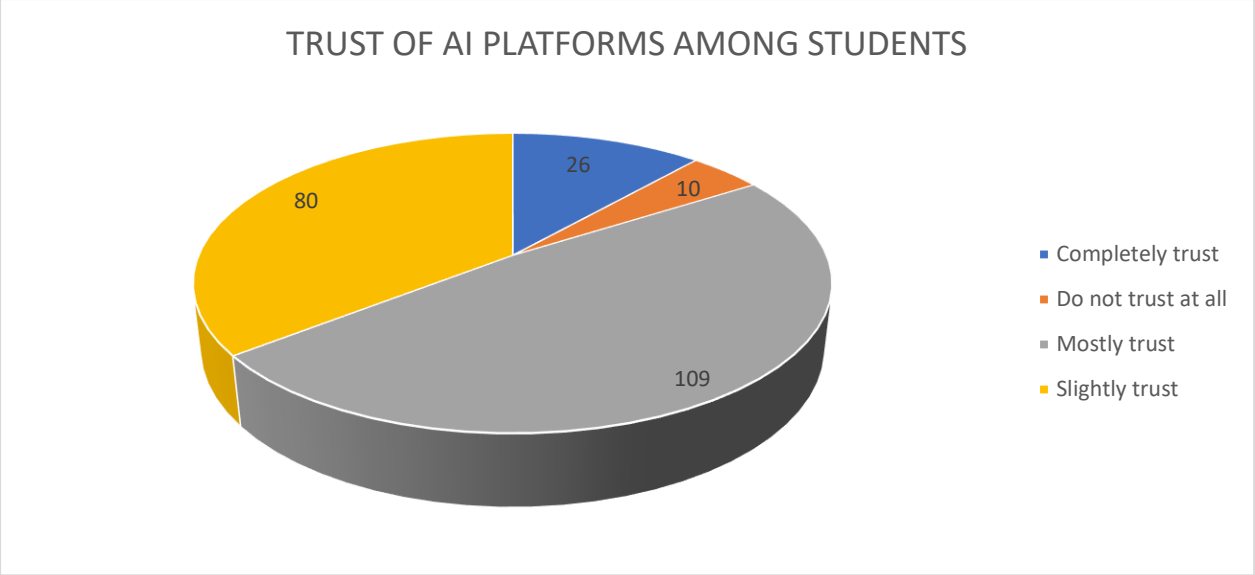

Fig 3.7

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has a percentage of 48.4% are mostly trust AI platforms.35.6% are slightly trust. only 4.5 % of respondents are not trusting AI platforms due to some reasons.

3.1.8 RECENTLY USED AI PLATFORM

TABLE 3.8

PLATFORMS	RESPONDENTS
CHARTGPT	117
AMAZON ALEXA	21
GOOGLE CLOUD AI	41
OTHER	39

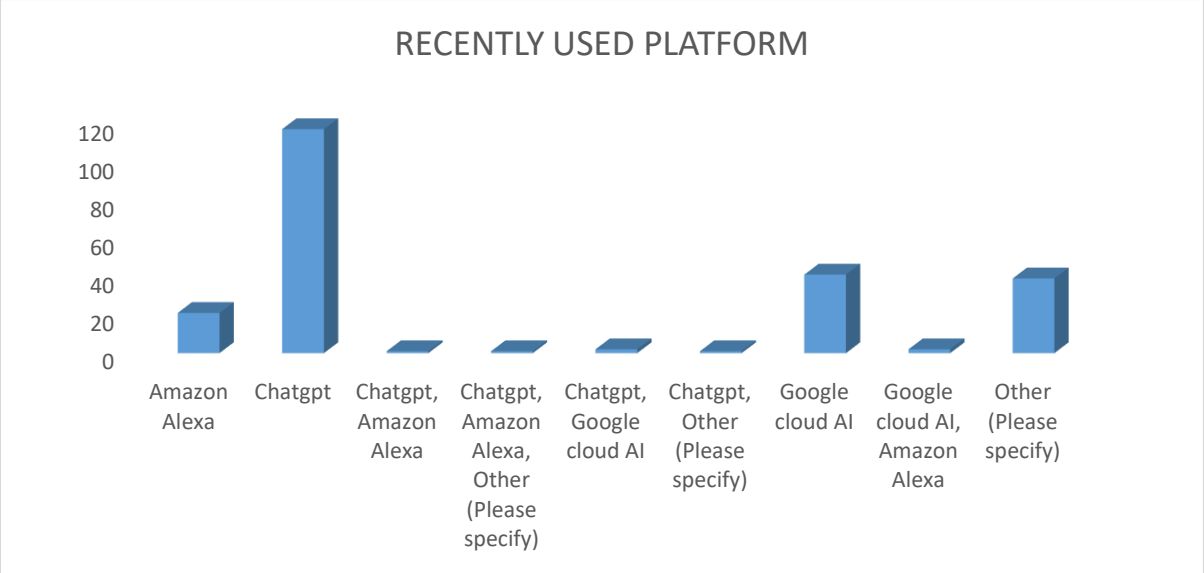

Fig 3.8

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has a respondents of 117 of students are mostly used platform is Chatgpt. lowest using platform is Amazon Alexa

3.1.9 OVERALL LEARNING EXPERIENCE FROM AI PLATFORMS

TABLE 3.9

OVERALL LEARNING EXPERIENCE (1 HIGHLY ENJOYABLE TO 5 HIGHLY UNENJOYABLE)	PERCENTAGE
1	22.7%
2	32%
3	34.2%
4	8.4%
5	2.7%

Fig 3.9

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has a respondents of 34.2% are neutrally enjoyable with AI platforms,32% are rated 2 in their overall learning experience. 22.7 % of respondents are rated one they are highly enjoyable with AI platforms.2.7 % of students have Preferred that they have not enjoyable with AI platforms.

3.1.10 FACTORS THAT DISCOURAGE THE USE OF AI PLATFORMS

TABLE 3.10

FACTORS	RESPONDENTS
CONCERN ABOUT DATA PRIVACY	70
LACK OF TRUST IN SYSTEM ACCURACY	65
INSUFFICIENT ACCESS OF TECHNOLOGY	29
OVERWHELM FROM TOO MANY AI PLATFORMS	43
OTHERS	18

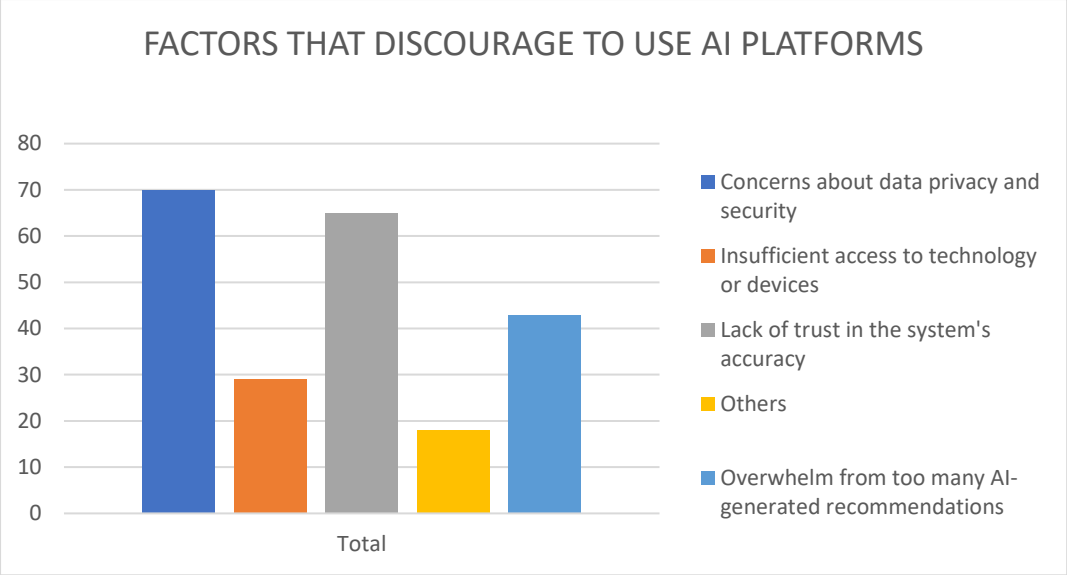

Fig 3.10

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has most of students have discouraging due to concern about data privacy and security.

3.1.11 AI PLATFORMS HELPS BETTER STUDY HABITS

TABLE 3.11

AI PLATFORMS HELPS BETTER STUDY HABITS	PERCENTAGE
TO SOME EXTENT	59.1%
SIGNIFICANTLY	11.1%
NO, NOT YET	24.9%
I DO NOT PLAN TO	4.8%

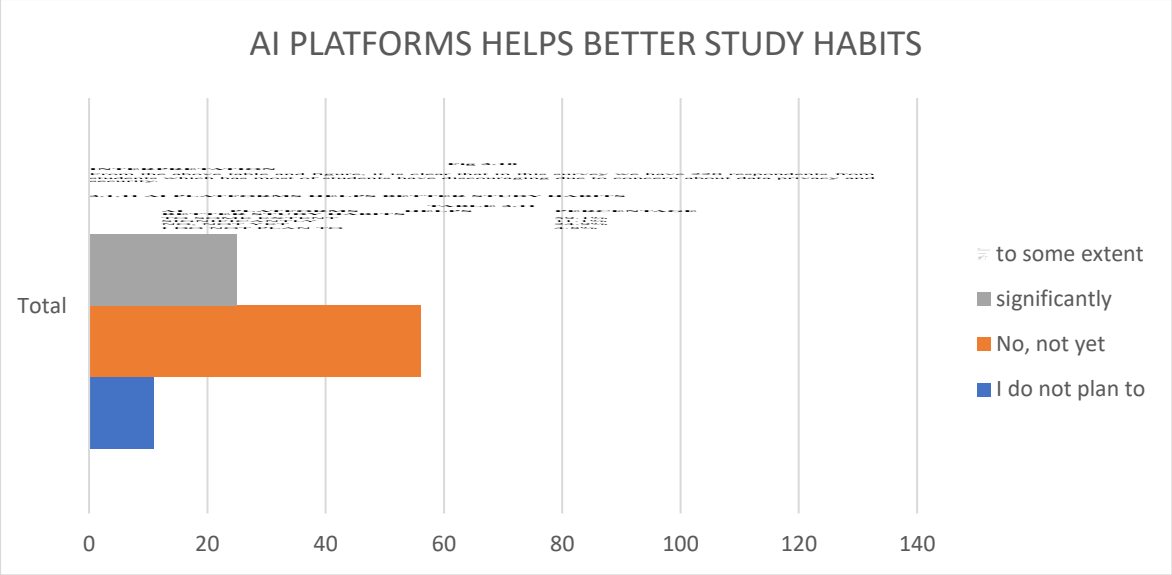

Fig 3.11

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has 59.1% of students have improving their better study habits in some extent**.**

3.1.12 AI FAMILIARITY BASED ON GENDER

TABLE 3.12

FAMILIARITY	FEMALE	MALE	TOTAL
LITTLE MORE FAMILIAR	63	43	106
NOT FAMILIAR AT ALL	6	8	14
SOMEWHAT FAMILIAR	37	42	79
VERY FAMILIAR	14	12	26

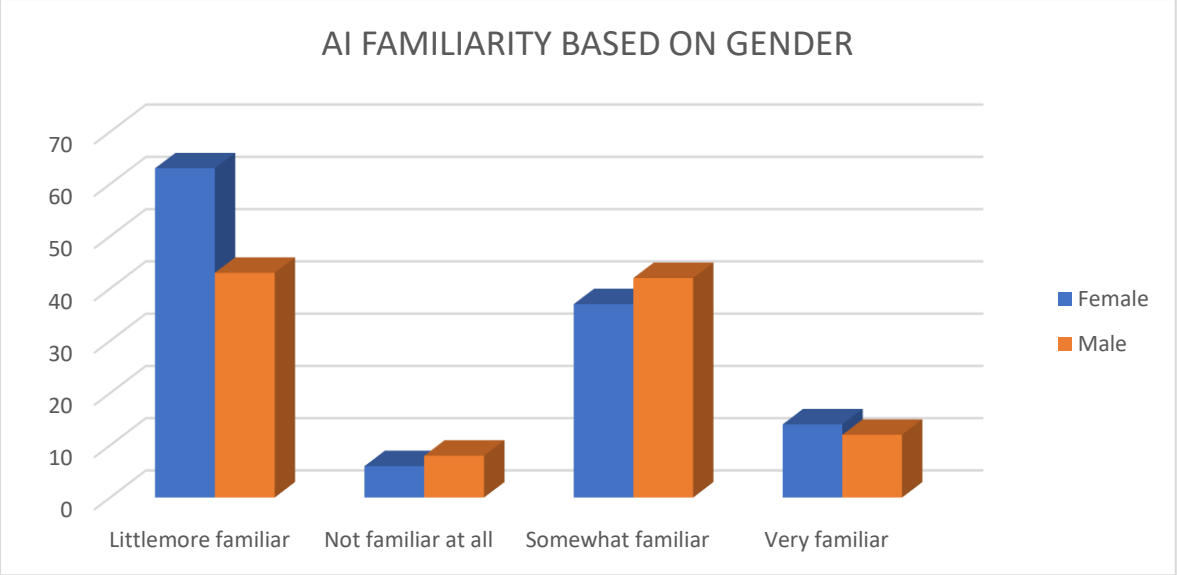

Fig 3.12

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has 106 of respondents are the highest response they are littlemore familiar with AI platforms. It's the evident that females are more familiar (63 females and 43 males) than males.

3.1.13 AI FAMILIARITY BASED ON EDUCATIONAL BACKGROUND

TABLE 3.13

FAMILIARITY	HIGHER SECONDARY	POST GRADUATION	UNDER GRADUATION	OTHER	TOTAL
LITTLE MORE FAMILIAR	1	58	45	2	106
NOT FAMILIAR	1	3	9	1	14
SOME WHAT FAMILIAR	3	17	59		79
NOT FAMILIAR AT ALL	1	17	8		26

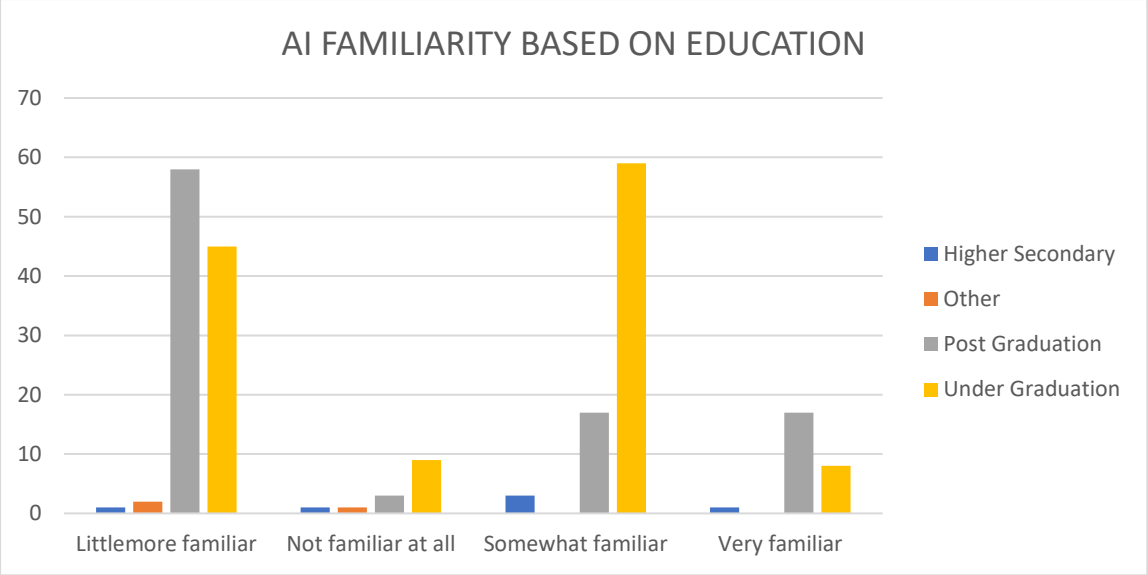

Fig 3.13

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has 106 of respondents are the highest response they are littlemore familiar with AI platforms. It's the evident that females are more familiar (63 females and 43 males) than males. Post graduate students are little more familiar than other educational backgrounds**.**

3.1.14 OVERALL RATING OF AI PLATFORMS

TABLE 3.14

OVERALL RATING	**PERCENTAGE**
EXCELLENT	26.7%
GOOD	49.8%
SATISFACTORY	23.1%
POOR	2.2%

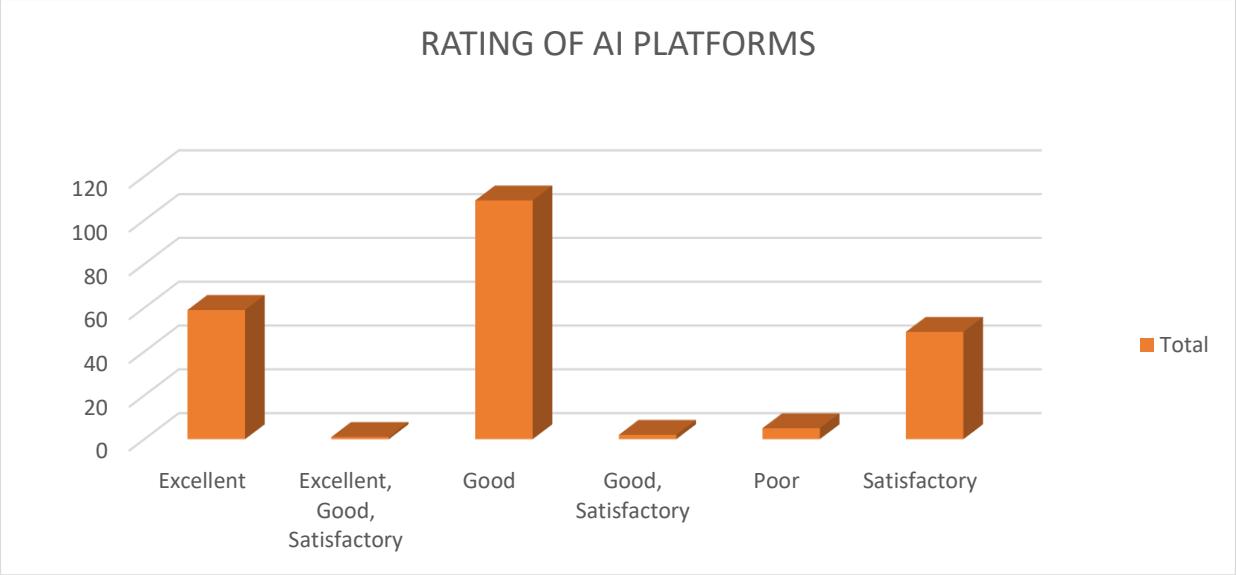

Fig 3.14

INTERPRETATION

From the above table and figure, it is clear that in this survey we have 220 respondents from students which has 49.8% highest respondents are rated AI platforms are Good. 26.7% of respondents are says that its excellent. only 2.2% are rated its poor. It is evident from the survey that students has most of them rated it as a Good platform for better studies

3.2 HYPOTHESIS TESTING

3.2.1 CHI SQUARE TEST: ANALYSING THE RELATIONSHIP BETWEEN EDUCATIONAL BACKGROUND OF RESPONDENTS AND AI BASED PERSONALISED LEARNING SYSTEMS FAMILIARITY.

H0 : There is no relationship between educational background of the respondents and AI platforms familiarity

H1 : There is a relationship between educational background of the respondents and AI platforms familiarity.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent

4.Educational Background * 5.How familiar are you with AI-based platforms?	225	100.0%	0	0.0%	225	100.0%

Table 3.15

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	36.406[a]	9	.000
Likelihood Ratio	37.194	9	.000
N of Valid Cases	225		

Table 3.16

a. 8 cells (50.0%) have expected count less than 5. The minimum expected count is .19.

CHI SQUARE TABLE

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.402	.000
	Cramer's V	.232	.000
N of Valid Cases		225	

Table 3.17

INTERPRETATION

Here the p value 0.402 is lesser than significance level α=0.05. So there is reject the null hypothesis. So, we can conclude that there is a relationship between age Educational background and AI platforms familiarity. It means Educational Background is one of the Factor that will effect AI platforms Familiarity. We interpret that AI can impact educational backgrounds by offering personalized learning experiences tailored to individual students needs.

3.2.2 FACTOR ANALYSIS

FACTOR ANALYSIS: FACTORS INFLUENCE A STUDENTS TO USE AI PLATFORMS.

Factor analysis is a statistical method used to describe variability among observed, correlated nvariables in terms of a potentially lower number of unobserved variables called factors. A common rationale behind factor analytic methods is that the information gained about the interdependencies between observed variables can be used later to reduce the set of variables in a dataset. Here 6 variables are selected for factor analysis these are the Likert scale questions.

ANALYSING FACTORS INFLUENCE STUDENTS TO USE AI PLATFORMS.

Factor Analysis was done using the given 6 variables. And as a result, we got 2 factors that highly influence students to use AI platforms

The KMO and Bartlett test evaluate all available data together. A KMO value over 0.5 , there is substantial correlation in the data. Variable collinearity indicates how strongly a single variable is correlated with other Variables.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.898
Bartlett's Test of Sphericity	Approx. Chi-Square	834.205
	df	15
	Sig.	.000

Table 3.18

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.919	65.314	65.314	3.919	65.314	65.314
2	.923	15.380	80.693			
3	.368	6.132	86.825			
4	.308	5.133	91.958			
5	.287	4.776	96.734			
6	.196	3.266	100.000			

Table 3.19

Extraction Method: Principal Component Analysis.

Since the KMO value is over 0.5, we can say that there is a substantial correlation in the data and the data is fit for the factor analysis. Factor Analysis was done using the given 6 variables. And as a result, we got 2 factors that influence students to use AI platforms.

Extraction Method: Principal Component Analysis.

Source: Data analysis

Initial Eigenvalues: All the factors included in the data set are listed in the first three columns. There are a total of 6 factors in this scenario since factor analysis always extracts the same number of factors as there are variables. You may find out how much of the variance in the dataset each factor can account for by looking at the percent of variance column.

Extraction Sums of Squared Loadings: Because we instructed SPSS to apply an extraction criterion of values greater than 1, this section only shows the elements that satisfy it. The Total column displays the eigenvalue for each factor (before rotation). The factor analysis, in this case, led to the extraction of four factors by SPSS.

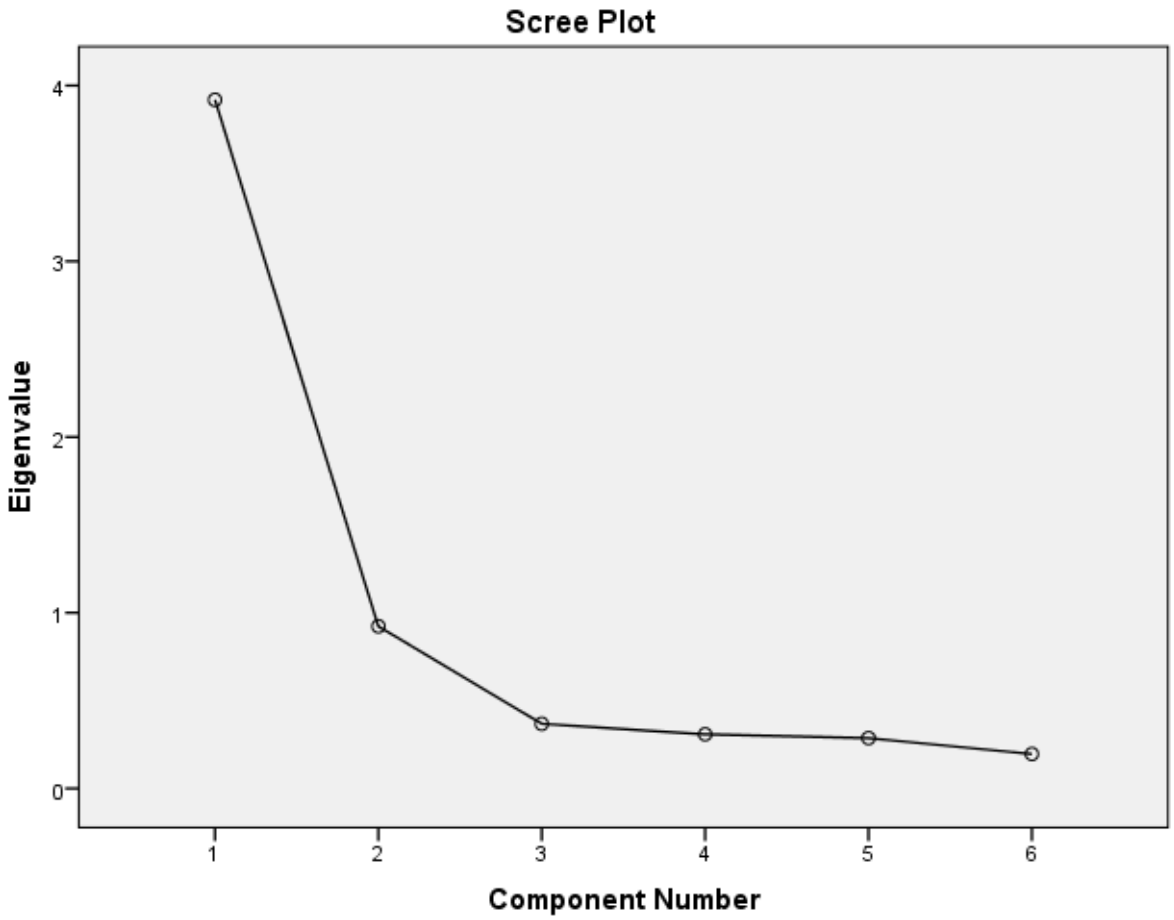

Fig 3.15

A scree plot is a line plot showing the eigenvalues of factors or principal components in an investigation in multivariate statistics. The number of factors to keep in exploratory factor analysis is decided using the scree plot. The 6 eigen values for our factors are shown on this graph. This can make it easier to see which elements to preserve. These plots frequently depict an area on the curve (or "elbow") where the eigenvalues level out and begin to decline. The eigenvalues above this point might still be significant enough to be kept, while the others might not.

Component Matrix[a]

	Component
	1
13.How satisfied are you with the level of personalization offered by the AI-based systems?	.863

14. How do you perceive the effect of AI-based personalized learning systems on your grades or academic scores and performance?	-.327
15.The AI-based personalized systems cater well to your individual learning needs. Do you agree to this statement?	.863
19.How likely are you to continue using the AI-based personalized learning system in the future?	.862
21.Do you feel more motivated to learn when using AI-based personalized learning platforms?	.863
22.How would you describe your overall learning experience with AI-based personalized learning platforms?	.514

Table 3.20

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

INTERPRETATION

As in the above table, the factors that Influence students for using AI platforms . The students satisfaction in AI personalized learning systems and AI-based personalized learning systems motivates their academics are the factors having the highest values, they can be considered for further analysis. Hence, further processing i.e., impact analysis or any other statistical analysis includes both the above variables. The Pearson correlations between items and components, or “Factors”, are contained in the component matrix. These are referred to as factor loadings, as they help us decipher which characteristics our components might represent. The most significant table in our output is this one. Since the highest value derived

is “The Students are Highly Satisfied with AI based personalized learning Systems”. We interpret that when students are highly satisfied with AI platforms , it means that they find them helpful, engaging, and effecting their learning journey. AI platforms can offer personalized support, interactive experiences making the learning process more enjoyable and rewarding for students.

CHAPTER – 4

INFERENCES

SUMMARY OF FINDINGS

● Out of the sample population majority of the students are familiar with AI platforms only 6.2% of students are not familiar with AI platforms.

● Students which has a percentage of 67.6% of respondent are like to use AI platform based on their 24/7 availability.

● Students which has a percentage of 53.3% of respondents have positive changes and somewhat improvement in their academic performance by using AI platforms. Only 4% has not mentioned any positive changes.

● Students which has a respondents of 117 out of 220 students are mostly used platform is Chatgpt. lowest using platform is Amazon Alexa.

● which has most of students have discouraging the use of AI platforms due to concern about data privacy and security.

● study shows that students which has 59.1% of students have improving their better study habits in some extent by using this platforms.

● Study shows highest response they are littlemore familiar with AI platforms. females are more familiar (63 females and 43 males) than males.

● Students which has 49.8% highest respondents are rated AI platforms are Good. 26.7% of respondents are says that its excellent. only 2.2% are rated its poor. It is evident from the survey that students has most of them rated it as a Good platform for better studies.

●Students which has a percentage of 48.4% are mostly trust AI platforms. only 4.5 % of respondents are not trusting AI platforms due to some reasons.

SUGGESTIONS

AI platforms can automate repetitive tasks, allowing humans to focus on more complex and strategic work, leading to increased efficiency and productivity.

AI platforms can analyze user data to deliver personalized experiences and recommendations, improving customer satisfaction and engagement.

AI-powered chatbots and virtual assistants can provide quick and personalized support to customers, enhancing their overall experience with a brand or service.

AI platforms can process and analyze vast volumes of data much faster and with higher accuracy than humans, enabling businesses to gain valuable insights and make data-driven decisions more efficiently.

AI algorithms can generate innovative solutions and assist humans in problem-solving, fostering creativity and driving innovation.

AI platforms can streamline operations, minimize human error, and improve overall process efficiency, leading to better outcomes.

By leveraging AI platforms, businesses can gain a competitive edge by harnessing the power of AI to enhance their operations, customer experiences, and decision-making processes.

CONCLUSION

In conclusion, implementing an AI-based personalized learning system has the potential to greatly improve students' academic performance. By tailoring the learning experience to each student's unique needs and preferences, AI can provide targeted support, adaptive feedback, and personalized resources. This individualized approach can enhance student engagement, motivation, and comprehension, leading to better academic outcomes. Additionally, AI can analyze vast amounts of data to identify patterns and trends, allowing educators to make data-driven decisions and interventions. Overall, the impact of AI in personalized learning holds great promise for transforming education and optimizing student success.

BIBLIOGRAPHY

Yubo Zhang, Gang Qin, Lijun Cheng, K Marimuthu, B Santhosh KumarJournal of Multiple-Valued Logic & Soft Computing 36, 2021. The research is focus on Interactive Smart Educational System Using AI for Students in the Higher Education Platform.

Huiling Qin, Guan Wang 2022 11th International Conference on Educational and Information Technology (ICEIT), 62-66, 2022. The study is based on Benefits, challenges and solutions of Artificial Intelligence applied in education.

.Rita MA Bezerra, Dalila DurãEs, Paulo Novais NovaisProceedings of the 2022 5th International Conference on Education Technology Management, 237-242, 2022. It focus on Survey for Smart and Adaptative Education.

Shijin Li, Xiaoqing Gu Educational Technology & Society 26 (1), 187-202, 2023. A Risk Framework for Human-centered Artificial Intelligence in Education.

Shaofeng Wang, Huanhuan Wang, Yanshuang Jiang, Ping Li, Wancheng YangInteractive Learning Environments, 1-17, 2021. The research paper Understanding students' participation of intelligent teaching.

http://researchgate.net/

https://www.jstor.org/

https://dl.acm.org/doi/abs/10.1145/3582580.3582622

https://www.jstor.org/stable/48707976

https://doi.org/10.1080/10494820.2021.2012813