Journal of Chemical Health Risks

www.jchr.org

JCHR (2026) 16(2), 2306-2315 | ISSN:2251-6727

A Survey on Awarness and Usage of Ai Tools in Education Among Collegiate Students

Vasakalle Mamta Shrimant, Masters of Physiotherapy, Garden City University.

Dr. Shwetha Sasidharan, Assistant Professor, Dr. Pinky Dutta ,Professor & Head of Physiotherapy Department , Garden City University .

Garden City University, Bengaluru.

(Received: 28 January 2026 Revised: 16 March 2026 Accepted: 09 April 2026)

KEYWORDS

Artificial Intelligence (AI), college students, Chatgpt, Awareness, Usage

ABSTRACT:

Introduction: Artificial Intelligence (AI) has become an integral part of modern education, influencing learning methods, research, and productivity among university students. Understanding students awareness and usage patterns of AI tools is essential to identify trends and gaps in digital education readiness.

Objectives: The primary objective of study is to assess the awareness and usage trends of various AI tools among college students across Bengaluru, Karnataka.

Methods: An observational cross-sectional survey was conducted online from December to April among undergraduate (UG) and postgraduate (PG) students from diverse disciplines, including Physiotherapy, Life Sciences, Professional Studies, Engineering, and Allied Health Sciences. Data were collected through a structured questionnaire distributed via social media and WhatsApp, ensuring anonymity and voluntary participation.

Results: The majority of AI tool users were aged between 22–24 years (51.2%), with female students (62.4%) showing higher usage than males (37.6%). Postgraduate physiotherapy students demonstrated the highest AI tool usage (34.6%). ChatGPT emerged as the most commonly used AI platform (82.9%). Most respondents reported intermediate familiarity (43.9%) and frequent usage (40.5%). AI tools were primarily used for study purposes (63.9%), and 72.7% agreed that these tools provide clear instructions. The majority rated AI accuracy and satisfaction between 4 out of 5, citing improved productivity and accessibility.

Conclusions: The study concludes that AI tool awareness and utilization are increasing among university students, particularly females and postgraduates. ChatGPT is the most preferred tool for academic purposes. Broader inclusion of educational levels and longer study durations are recommended for future research to enhance understanding of AI adoption trends in higher education.

1. Introduction

Artificial Intelligence (AI) is the term used to describe the creation of computer systems that can carry out complex tasks which typically require human intelligence, such as making decisions, comprehending speech and identifying patterns or images[1]. AI is the new genre which has been steadily taking root and is now a powerful reality in the existing world. It was based on the assumption that the process of human thought and reasoning can be replicated and mechanized[2]. AI is a new field of study that originated in the mid-twentieth century. AI has had fixed various issues in education during the last decade, including language processing, reasoning, planning, and cognitive modelling [3]. AI has the potential to revolutionize the publishing of scientific articles in journals. The advancements in AI technology are likely to have a significant impact on the publishing process, offering new and improved ways to manage the peer-review process, enhance the quality of peer review, and enable new forms of publication[4]. AI, originating in the 1950s, began as an exploration of machines mimicking human behavior and cognition. This pursuit led to diverse fields like machine learning, natural language processing (NLP), computer vision, and robotics, each advancing AI's capacity to emulate human reasoning, learning, and discernment [5]. AI is a computer-based technology invented as a digital system to imitate and aid human intellect and skills. The wide use of AI technology is changing the medical field considerably, aiming for more efficient patient management[6]. The ability of machines to imitate human behavior is known as artificial intelligence (AI). It is a collection of mathematical models, represented as algorithms, that can quickly and efficiently learn

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JCHR (2026) 16(2), 2306-2315 | ISSN:2251-6727

and analyze vast amounts of data in a variety of formats. Among its many other uses in the medical field, it can help improve the precision and speed of diagnosis, expedite and simplify clinical care, and support public health initiatives[7]. Integration of the traditional methods with AI- based methods including ChatGPT can be advantageous. In public health education, the listed benefits included providing explanations and case scenarios, besides improved skills in data analysis and literature review[8]. Artificial intelligence is a field of computer science that can analyze large amounts of data. However, it is not only related to computer science but extends into many areas such as medicine, philosophy, psychology, linguistics, and statistics [9]. Although their basic attitude toward the use of clinical AI was positive, medical students also had concerns, especially with regard to the lack of data protection and declining personal contact with patients[10].

AI tools can be grouped into two main categories: GenAI and assistive AI. GenAI tools, such as ChatGPT, Just Done, DALL-E, and GitHub Copilot, are designed to generate new content by analyzing and learning patterns from extensive datasets. Assistive AI tools, such as Grammarly, Screen Readers, and Alexa, aim to enhance or support human tasks. Notably, GenAI can also serve assistive purposes, such as providing support for language learning [11]. Artificial intelligence (AI) systems provide a variety of options for online learning, including personalized guidance, support, and feedback for students based on their specific learning patterns and current knowledge. Medical education resources have evolved over time from written textbooks to digital articles and now include innovative study tools to enhance students' ability to retain vast amounts of information within limited timeframes[12]. The success of Googles AlphaGo program in 2016 propelled Deep Learning (DL) led AI into a new era, and stimulated interest in the development and implementation of AI systems in many fields, including healthcare. Between 1997 and 2015, fewer than 30 AI-enabled medical devices were approved by the U.S.majority of physicians and medical students were aware of the increasing application of AI in medicine, but most had not actually used clinical AI and lacked basic knowledge[13]. The healthcare industry is on the verge of experiencing a transformation in which artificial intelligence (AI) is anticipated to impact the routine practice of medicine, spanning from medical education to clinical practice across specialties and, ultimately, patient care. Medical students have expressed interest in revising the medical curriculum to adapt to the changing healthcare environment influenced by AI[14]. AI chatbots have been increasingly used in health care applications, for example, to provide education and support to patients with chronic diseases and to increase COVID-19 vaccine confidence and acceptance. Notably, good performance alone is not enough for the useful and safe adoption of these tools in real-world applications for medical education purposes[15].

Medical errors are one of the significant causes of death in the United States that most related to human errors. Since the 1950s, physicians and computer scientists have tried to use the capacity of computers as a decision support system to facilitate clinical decisions. In 1976, for the first usage of AI in medicine, Gunn et al. used this technology to diagnose acute abdominal pain. The other AI technologies are Artificial neural networks (ANN), Machine learning, Convolutional neural network (CNN), and Deep learning that are useful to other medical specialists [16]. Digital transformation in the healthcare sector is driving a deep reconfiguration of medical practice, with AI emerging as a key factor in addressing current and future healthcare challenges[17]. Machine learning (ML) is a form of narrow artificial intelligence which can be used to automate decision making and make predictions based upon patient data[18]. Most machine learning approaches fall into two main categories: supervised and unsupervised methods. Supervised methods are great for classification and regression. Unsupervised learning does not require labeled data[19]. Supervised ML is where algorithms are given training data, which is analysed for features important for classification and labelled. The model is then trainedwith this data before being tested with unlabelled data. Unsupervised ML is used to identify patterns without training. Common forms are cluster analysis (where data is grouped by patterns of characteristics) or association (where rules are discovered by which data is governed)[18]. The integration of AI into healthcare has introduced tools that improve medical education and clinical practice. Open Evidence is an example, providing real-time synthesis and access to medical literature, particularly for medical students during clinical rotations[20]. Global healthcare systems are predicted to undergo a change due to AI. In addition to the financial advantages, AI is anticipated to improve healthcare efficiency for patients and healthcare providers. Additionally, it can be used to interpret electrocardiograms (ECGs) in cases of atrial fibrillation, ventricular tachyarrhythmias, and myocardial infarction. AI can also be applied to detect sleep disorders and epilepsy, analyze electromyography (EMG) data, and conduct Doppler ultrasound assessments for patients in Intensive Care Units (ICUs) [7]. As an example, the integration of AI in simulated surgical skills learning showed comparable results compared to remote expert instructions, but it led to unintended outcomes in another study, which affected trainees' efficiency metrics on the cost of safer skills development. AI technology integration in medical education and medical research will not only contribute to patients' care but also improve if not revolutionize the medical education system[6]. Several studies have been conducted that showed medical students preferred these digital

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JCHR (2026) 16(2), 2306-2315 | ISSN:2251-6727

learning modalities to traditional textbooks. In recent years, artificial intelligence (AI) has become a valuable resource for medical students and healthcare professionals to access information and develop a deeper understanding of subject matter[12]. According to the socio-demographic and geographic characteristics of those who have not used ChatGPT, the majority were female (68%), first-level students (84%), students studying social sciences (46%), engaged in traditional learning (52%), residing in urban areas (60%), from average economic backgrounds (58%), and studying in high income (39%) and upper middle income (34%) regions[5]. According to a study conducted in 2022 with doctors and medical students, about 74% of doctors and 68.8% of medical students had a basic knowledge of AI, but only 27.3% of doctors and 19.4% of students were aware of its medical application. Even though most health science students possess limited knowledge about AI applications, they exhibited a positive outlook towards AI in medicine and are ready to adopt it[12]. Medical students need to be sufficiently proficient in AI, its advantages to improve healthcare's expenses, quality, and access. Similarly, students must be educated about the shortfalls of AI such as bias, transparency, and liability[21]. AI can make the assessment process more accurate, rapid and cost-effective, and efficiently provide detailed, customized feedback[22]. Virtual patient and augmented reality simulations can provide realistic clinical scenarios without endangering patients and help medical students learn and participate more effectively. Using commonly available technology, mobile, and online learning can supplement the students' knowledge and promote peer-to-peer or student-to-faculty interface [23].

Medical students overwhelmingly believe that AI is important to the future of medicine and their desire to learn about AI, the development and inclusion of AI in undergraduate medical education should be considered[24]. *Medical students are aware of the potential applications and implications of AI in radiology and medicine in general.Medical students do not worry that the human radiologist or physician will be replaced. AI should be included in medical training*[25]. Factors for AI readiness include technological proficiency, understanding of AI tools, and perceived AI use.Barriers to accessing AI technology included lack of computer skills, AI knowledge and awareness, and time constraints[26].The Canadian study identified that medical students were more concerned about the displacement, rather than replacement, of radiologists which could lead to reduced workforce demands[27].The COVID-19 pandemic has increased the popularity of E-learning strategies and was later fuelled by the advancements in AI-supported chatbots . Among the various generative AI (GAI) tools available, Chat Generative Pre-Trained Transformer (ChatGPT), Bard, Microsoft Bing, Claude, and Scribe have gained prominence for their ability to generate diverse content in education, catering to personalized learning and creativity[28].

2. Objectives

The primary objective is to find the awareness and usage of different AI tools among the university students

3. Methods

STUDY DESIGN: An observational study among the different University students for the usage of AI tools.

STUDY SETTING AND DURATION: The study was entirely conducted online in Bengaluru, Karnataka during the month of December to April, Bengaluru was chosen as the study setting due to availability of different universities.

SAMPLE SIZE: 206

INCLUSION CRITERIA:

1.University students are included with UG and PG of Physiotherapy, UG and PG of sciences, UG and PG of professional studies, UG engineering, UG and PG of Allied health sciences.

2.Both females and males

3.Age between 16 -27 years

4.Student enrolled in universities

5.Who voluntarily consented to participate

EXCLUSION CRITERIA: The study eliminated participants

1.PhD students

2.Age below 16 years and above 27 years

3.School students

4.Other students then above-mentioned courses.

5.Those unwilling to participate

6.Who did not complete the questionnaire

METHODOLOGY

DATA COLLECTION: The cross- sectional survey used Google Forms for the research, which has been provided through Whatsapp and social media groups. In order to protect participants privacy, the questionnaire was intended for anonymous collection of information. The survey is based on questionnaire. The questionnaire consisted of several sections including the demographic data section which include the name, age, gender, education status. The survey aim to find out the usage trends of different AI Tools among the different university students.

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4. Results

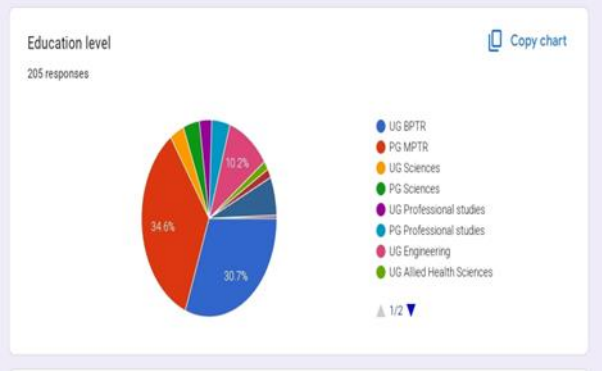

Fig:1: *A pie-chart showing the distribution of the age.*

AGE	NO.PEOPLE	PERSENTAGE %
16-19years	6	2.9%
19-21 years	48	23.3%
22-24 years	105	51%
25-27 years	47	22.8%

According to age the usage of AI trends is higher in age group of 22-24 years i.e 51.2% and the usage is less in age group of 16-18 years i.e.4%.

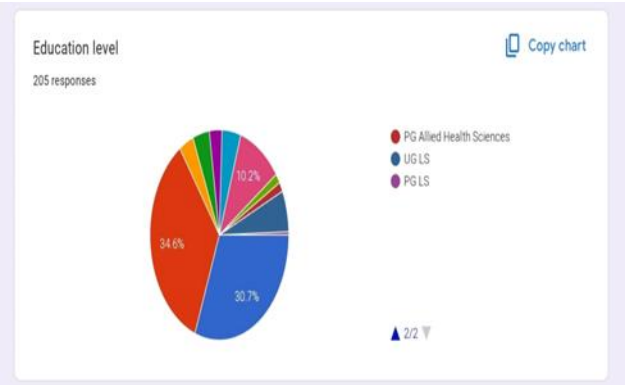

Fig:2: *A pie-chart showing the distribution of the gender.*

GENDER	NO.PEOPLE	PERSENTAGE%
Female	128	62.1%
Male	78	37.9%

The result shows that the females are more prone to use the AI tool as compared to males. Females have 62.4% while males have 37.6% in relation to usage trends.

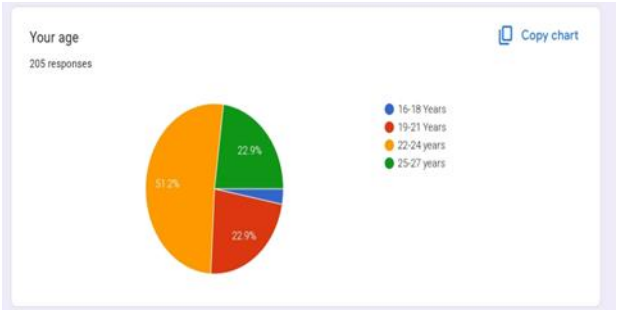

Fig:3: *A pie-chart showing the distribution of the educational levels in the different universities.*

EDUCATION LEVEL	NO.PEOPLE	%
UG BPTR	63	30.6%
PG MPTR	71	34.5%
UG SCIENCES	8	3.9%
PG SCIENCES	8	3.9%
UP PROFESSINAL STUDIES	6	2.9%
PG PROFESSINAL STUDIES	9	4.4%
UG ENGINEERING	21	10.2%
UG ALLIED HEALTH SCIENCES	3	1.5%
PG ALLIED HEALTH SCIENCES	3	1.5%
UG LIFESCIENCE	13	6.3%
PG LIFESCIENCE	1	0.5%

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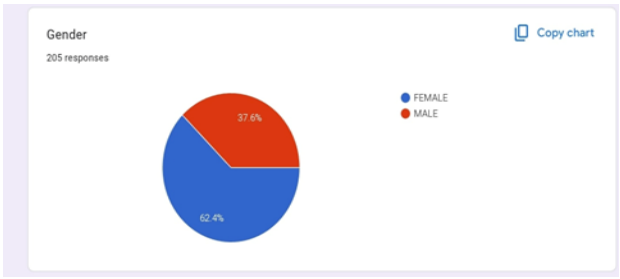


According to educational level the PG MPTR (POST-GRADUATION IN PHYSIOTHERAPY) shows higher usage trends i.e 34.6% and PG LS (POST-GRADUTION IN LIFE SCIENCE) shows very less usage trends.

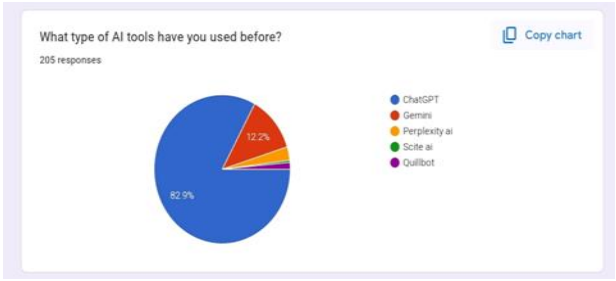
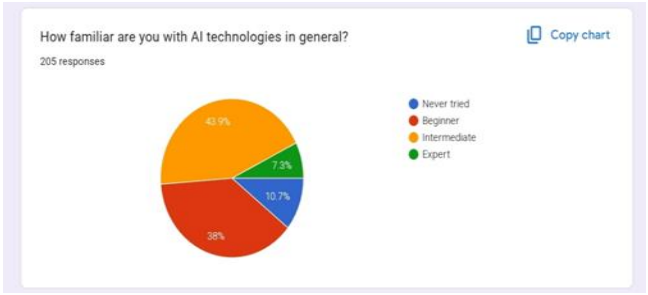


Fig 4: *A pie-chart showing the distribution of the famirality on the usage of AI tool in university student.*

FEATURES	NO .PEOPLE	PERSENTAGE%
NEVER TRIED	22	10.7%
BEGINNER	79	38.3%
INTERMEDIATE	90	43.7%
EXPERT	15	7.3%

Based on familiarity of the AI tool the result shows that most of students are intermediate in the use of the AI tool i.e.43.9 % and the less students are experts in use of AI tool i.e. 7.3 %

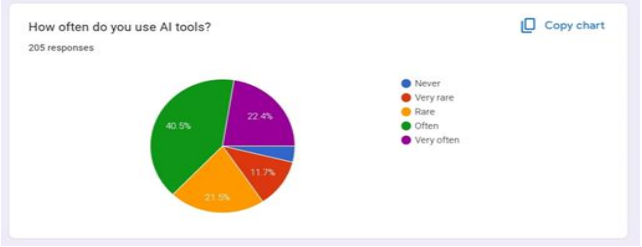
Fig:5: *A pie-chart showing the distribution of the frequency of the use of the AI tool in students.*



FEATURE	NO.PEOPLE	PERCENTAGE%
NEVER	8	3.9%
VERY RARE	24	11.7%
RARE	44	21.4%
OFTEN	84	40.8%
VERY OFTEN	46	22.3%

The intensity of use of the AI tool shows that the students use it often i.e. 40.5% and the students who never use the AI tool is very less i.e.4 %

Fig:6: *A-pie-chart showing the distribution of the which AI tool is most commonly used by the University students.*



AI TOOLS	NO.PEOPLE	PERSENTAGE%
Chat GPT	171	83%
Gemini	25	12.1%
Perplexityai	6	2.9%
Scite ai	1	0.5%
Quillbot	3	1.5%

The survey shows that most of students use the ChatGPT i.e. 82.9% and very less students use the Scite ai.

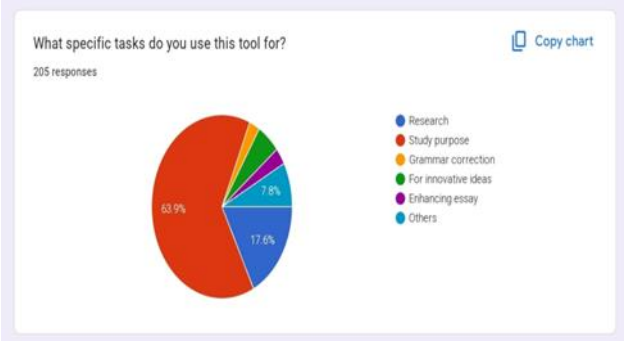


Fig:7: *A pie-chart showing the distribution of the students through which students are knowing the AI tool.*

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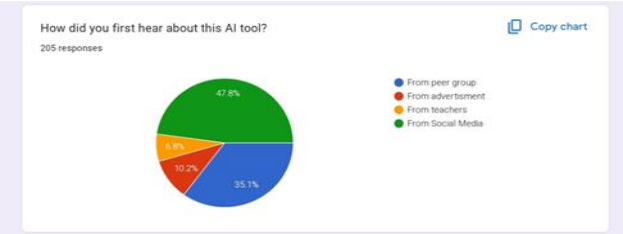
FEATURE	NO.PEOPLE	PERSENTAGE%
FROM PEER GROUP	72	35%
FROM ADVERTISMENT	21	10.2%
FROM TEACHERS	15	7.3%
FROM SOCIAL MEDIA	98	47.6%

The most of the students heard about the AI tool from social media i.e.47.8% and very few heard from the teachers i.e. 6.8%

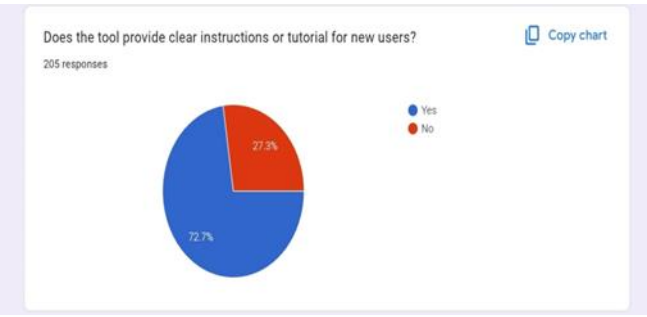
Fig:8: *A pie-chart showing the distribution of the clarity of the information provided by AI tool for the university students.*



FEATURE	NO.PEOPLE	PERCENTAGE%
YES	150	72.8%
NO	56	27.2%

The result shows that the AI tool will provide clear instruction or tutorials for new users i.e.72.7% but few students says that AI tool will not provide clear instruction or tutorials i.e. 27.3%

Fig:9: *A pie-chart showing the distribution of the students for which purpose the university students are using the AI tools.*



FEATURE	NO .PEOPLE	PERCENTAGE%
RESEARCH	36	17.5%
STUDY PURPOSE	132	64.1%
GRAMMER CORRECTION	5	2.4%
FOR INNOVATION IDEA	11	5.3%
ENHANCING ESSAY	6	2.9%
OTHERS	16	7.8%

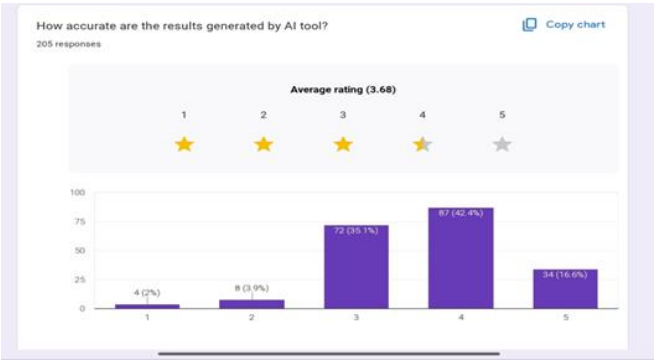
The most of the students use the AI tool for the study purpose i.e. 63.9% while very few students will use the AI tool for the Grammer correction i.e.

Fig:10 : *A bar diagram showing the distribution of the accuracy of the results provided by AI tool .*

RATEING	NO.PEOPLE	PERCENTAGE%
1	4	1.9%
2	8	3.9%
3	73	35.4%
4	87	42.2%
5	34	16.5%

The students rated the accuracy of AI tool , most of students rated as 4 out of 5 i.e. 42.4 % while very few students rated as 1 out of 5 i.e. 2%

Fig:11 : *A pie-chart showing the distribution of the impact of the AI tool on the improving productivity of task.*



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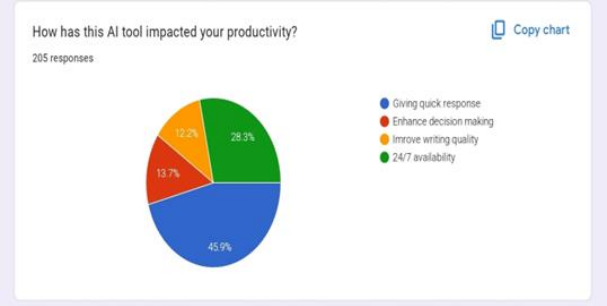
FEATURES	NO.PEOPLE	PERCENTAGE%
GIVING QUICK RESPONCE	94	45.6%
ENHANCE DECISION MAKING	29	14.1%
IMPROVE WRITING QUALITY	25	12.1%
24/7 AVAILABILITY	58	28.2%

The many students says that by giving the quick response the AI tool will improve the productivity i.e. 45.9% while very few students says that by improve writing quality the AI will improve the productivity i.e. 12.2%

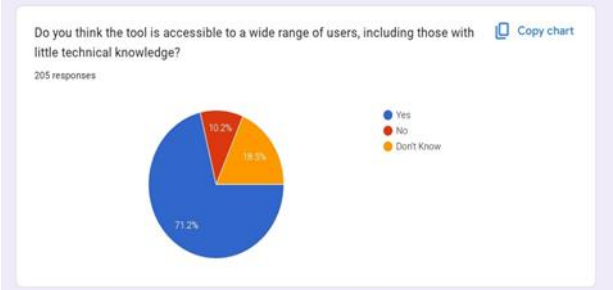
Fig:12 : *A pie-chart showing the distribution of students regarding the integration of the AI tool with the other software or systems .*

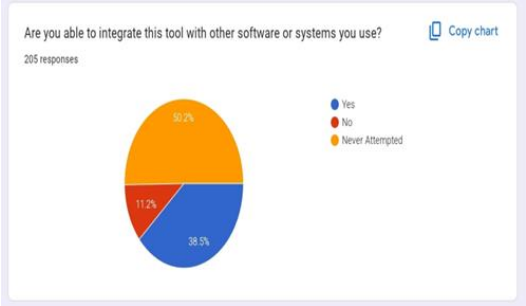


FEATURES	NO.PEOPLE	PERCENTAGE%
YES	80	38.8%
NO	23	11.2%
NEVER ATTEMPTED	103	50%

The result shows that many student never attemted to integrate AI tool with other software or system i.e.50.2% while very few students are not able to integrate AI tool with other software or system i.e. 11.2%

Fig:13 : *A pie-chart showing the distribution of the AI tool regarding the accessibility .*

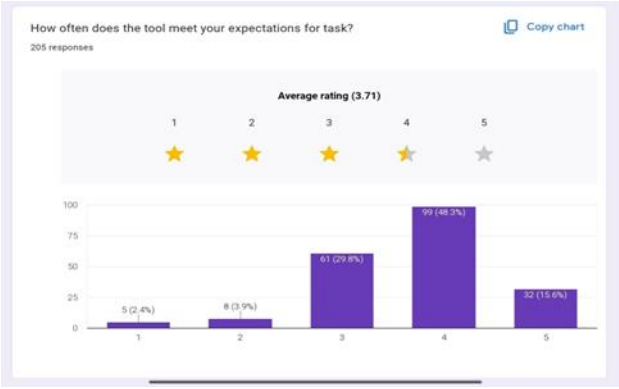




FEATURES	NO.PEOPLE	PERCENTAGE%
YES	147	71.4%
NO	21	10.2%
DON'T KNOW	38	18.4%

The accesibility of the AI tool shows the higher results than its restriction i.e. accesibility has 71.2% while the restriction has 10.2%

Fig:14 : *A bar diagram showing the distribution of the how the AI tool will meet the expectation of the students.*



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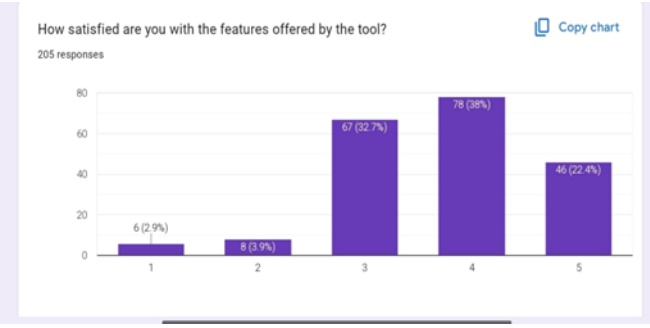
FEATURES	NO.PEOPLE	PERSENTAGE%
1	5	2.4%
2	9	4.4%
3	61	29.6%
4	99	48.1%
5	32	15.5%

The expectations from the AI tool is rated by students that most of the students rates the tool as 4 out of 5 i.e. 48.3% and on other side some student's rates as 1 out of 5 i.e. 2.4%

Fig:15 : *A bar diagram showing the distribution of students regarding satisfaction of features offered by AI tool.*



FEATURES	NO.PEOPLE	PERSENTAGE%
1	6	2.9%
2	8	3.9%
3	67	32.5%
4	79	38.3%
5	46	22.3%

On the satisfaction of the use of AI tool the students rated the tool, most of the students rated between the 60-80 i.e. 38% and on the other hand very few students rated between the 0-20 i.e. 2.9%

5.Discussion

The purpose of this experimental study was to find out the awareness of the university students about the usage of the different AI tool for different task in their life. The study was conducted among the university students in Karnataka. The study's findings provided light on the prevalence and awareness of usage of the AI tool in this area. The study conducted in the age group between the 16-27 years. The study is conducted between the various educational levels. The study is done regarding the which AI tool is most commonly used, how often AI tool is used, the purpose of the AI tool usage, how AI tool helps the students, etc.The age group of 22-24 has higher rate of usage of AI tool because the most of university students age belong to this age group category. The females have the high rate of use of the AI tools in their life for the various purpose. According to the use of the AI tool the students are intermittent because may university students starts the AI tool use recently more when they inter the different universities. According to familiarity of the AI tool the student rated it intermediate because AI technology is in more trends now a days .Based on the often use of AI tools the result shows the student use the AI tool often in there life because of its easy avaliablity and flexibility. Based on providing the clear instruction for the new users the students said tool is providing more clear instruction because of its systamatic arrangement.Based on the accuracy of the results provided by AI the student rated it as 4 out of 5 because most of the results are accurate.The integration of AI tool with other softwears the many student never attemted it because many people are not aware about integration.According to the use of tool by people with little techniqual knowledge the result shows its easy to use because of AI tools trends .The expectation completed by AI tool is rated 4 out of 5 because most of the expectations are fulfilled by AI tools.The use of AI tool is often by most of the students because of quick response of AI tool and its easy availability which is more useful in this modern lifestyle. The chat-gpt shows the higher rate of the usage because its most popular now a days .The most of the students come to know the AI tool through the advertisements because of more use of social media in their daily life .Based on the features offered by AI tool the student rated AI tool as 4 out of 5 because AI tool is providing many new new features .The students use the AI tool mostly for the study purpose because the university students will get the study information more in less time through the AI tool use .The lifestyle becomes very fast so everyone life want to more productivity in less time so the AI will help by giving the quick response.

6.LIMITATIONS AND SUGGESTIONS

The present study provides significant insights into the awareness and usage trend of AI tools in the different university students. Nonetheless, it is important to recognize a few restrictions. The study has the limitation of inclusion criteria of some educational levels. The survey is done online which may be not reached many people. The age limit is mention because of which the people with above that age limit is unable to respond. Most of the student will come to know more about AI in their PG studies because of which the UG students are less aware about this survey because of their less use of AI tools.

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The survey can be conducted for all educational levels. The survey can be done in such a way that it will not have any age criteria. The survey duration can be extended so that form will circulate to more people.

7.CONCLUSION

The survey is done to determine the awareness and usage trend of AI tool in university students. The most of the students use the AI tool for their study purpose, 22-24 age has high prevalence in usage, in comparison with the gender the females are more prone than males. The most of the PG students are more aware then UG students while the chat-gpt is more commonly used AI tool in university students.

8.CONFLICT OF INTEREST: There is no conflict of interest.

9.ACKNOWLEDGEMENTS: The author sincerely expresses gratitude to all the participants who willingly took part in this study and shared their valuable time and responses. Special thanks are extended to colleagues and mentors for their continuous support, encouragement, and constructive feedback throughout the research process.I desire to sincerely thank each and every author for the information provided in the article.

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