



“AI Awareness and Understanding among College Students: A Survey-Based Study”

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ABSTRACT:

Artificial Intelligence (AI) is transforming industries and reshaping the future of work, making it essential for college students to develop AI awareness and understanding. This study investigates the level of AI awareness, understanding, and perceptions among college students through a survey-based approach. Data was collected from 250 students across various academic disciplines and year levels, focusing on their awareness of AI, understanding of AI concepts, and perceptions of AI's impact on society and careers. This research underscores the importance of enhancing AI literacy among college students to ensure they are equipped to navigate and contribute to the evolving AI landscape.

Key Words: Artificial Intelligence (AI), AI Awareness, AI Understanding College Students

1.1 INTRODUCTION OF THE STUDY

Artificial Intelligence (AI) has emerged as a transformative technology, influencing various sectors such as healthcare, education, finance, and entertainment. Its rapid integration into daily life has sparked discussions about its implications, benefits, and challenges. College students, as the future workforce and decision-makers, play a critical role in shaping the adoption and ethical use of AI. However, their awareness and understanding of AI remain underexplored. This study aims to investigate the level of AI awareness and understanding among college students, identify gaps in knowledge, and explore their perceptions of AI's impact on society.

The study is motivated by the need to prepare students for an AI-driven future, ensuring they possess the necessary skills and knowledge to navigate and contribute to this evolving landscape. By conducting a survey-based analysis, this research seeks to provide insights into how well-informed students are about AI and how educational institutions can bridge existing knowledge gaps.

1.2 REVIEW OF LITERATURE

The literature on AI awareness and understanding highlights several key themes:

1. **AI in Education:** Studies have shown that integrating AI into education enhances learning experiences and prepares students for future careers (Luckin et al., 2016). However, there is a lack of emphasis on teaching students about AI itself.
2. **Public Perception of AI:** Research indicates that while the general public is aware of AI, there is limited understanding of its technical aspects and ethical implications (Zhang & Dafoe, 2019). College students, as a subset of the population, may exhibit similar trends.
3. **AI Literacy:** The concept of AI literacy, defined as the ability to understand, use, and critically evaluate AI technologies, is gaining traction (Long & Magerko, 2020). However, few studies have assessed AI literacy among college students.
4. **Gender and Discipline Differences:** Some studies suggest that awareness and understanding of AI vary based on gender and academic discipline (West et al., 2019). Students in STEM fields may have higher AI awareness compared to those in non-STEM fields.

This study builds on existing literature by focusing specifically on college students and their awareness, understanding, and perceptions of AI.

1.3 OBJECTIVES OF THE STUDY

The primary objectives of this study are:

1. To assess the level of AI awareness and understanding among college students.
2. To identify differences in AI awareness based on gender, academic discipline, and year of study.
3. To evaluate the effectiveness of current educational approaches in fostering AI literacy.
4. To provide recommendations for improving AI education and awareness among college students.

1.4 HYPOTHESES OF THE STUDY

The study tests the following hypotheses:

1. **H1:** There is a significant difference in AI awareness between students in STEM and non-STEM disciplines.
2. **H2:** Male students have higher AI awareness compared to female students.
3. **H3:** Upper-year students have greater AI understanding than first-year students.
4. **H4:** Students with prior exposure to AI-related courses have higher AI literacy.
5. **H5:** Students perceive AI as having a positive impact on their future careers.

1.5 RESEARCH METHODOLOGY

This study employs a quantitative research design, utilizing a survey-based approach to collect data from college students. The methodology includes the following steps:

1. **Sample Selection:** A stratified random sampling technique is used to select participants from various academic disciplines and year levels.
2. **Survey Instrument:** A structured questionnaire is developed, comprising sections on demographic information, AI awareness, understanding, and perceptions.

3. **Data Collection:** The survey is distributed online to ensure a wide reach and efficient data collection.
4. **Data Analysis:** Descriptive and inferential statistical techniques are used to analyze the data. Tools like SPSS or R are employed for hypothesis testing.

1.6 SIGNIFICANCE OF STUDY

This study holds significant value for multiple stakeholders:

1. **Educational Institutions:** The findings can help universities design curricula that enhance AI literacy among students.
2. **Policymakers:** Insights from the study can inform policies aimed at promoting AI education and awareness.
3. **Students:** The research highlights the importance of AI literacy for future career readiness.
4. **Researchers:** The study contributes to the growing body of literature on AI awareness and understanding.

This section provides a detailed analysis and interpretation of the data collected from the survey on AI awareness and understanding among college students. The analysis is divided into descriptive statistics, inferential statistics, and correlation analysis. Tables are included to present the findings clearly.

1.7 DATA ANALYSIS AND INTERPRETATION

Table 1: Demographic Profile of Respondents

Variable	Category	Frequency	Percentage
Gender	Male	120	48%
	Female	130	52%
Academic Discipline	STEM	150	60%
	Non-STEM	100	40%
Year of Study	First Year	80	32%
	Second Year	70	28%
	Third Year	60	24%
	Fourth Year	40	16%
Prior AI Exposure	Yes	90	36%
	No	160	64%

The sample consists of 250 college students, with a nearly equal gender distribution (48% male, 52% female). A majority of respondents are from STEM disciplines (60%), and 36% have prior exposure to AI-related courses.

Table 2: AI Awareness Levels

Awareness Level	Frequency	Percentage
High Awareness	70	28%
Moderate Awareness	120	48%
Low Awareness	60	24%

Nearly half of the students (48%) have moderate awareness of AI, while 28% exhibit high awareness. A significant portion (24%) has low awareness, indicating a need for improved educational interventions. With nearly half of the students having moderate awareness, AI education initiatives should focus on advancing their knowledge while also addressing the needs of those with low awareness. Expanding AI-related programs and integrating AI concepts into different subjects can help increase high awareness levels among students.

Table 3: AI Understanding Scores (Out of 10)

Understanding Level	Mean Score	Standard Deviation
Overall	6.2	1.8
STEM Students	7.1	1.5
Non-STEM Students	4.8	1.6
Male Students	6.5	1.7
Female Students	5.9	1.9

STEM students have a higher mean understanding score (7.1) compared to non-STEM students (4.8). Male students also score slightly higher (6.5) than female students (5.9), though the difference is not substantial. The table highlights significant disparities in AI understanding across student groups. While STEM students and male students generally have higher comprehension levels, non-STEM and female students exhibit lower scores with greater variability. Focused interventions, such as structured AI courses, gender-inclusive programs, and interdisciplinary AI learning, can help improve overall AI literacy.

Table 4: Hypothesis Testing Results

Hypothesis	Test Used	Result	Conclusion
H1	Independent t-test	t = 4.32, p < 0.001	Significant difference in AI awareness between STEM and non-STEM students.
H2	Independent t-test	t = 1.89, p = 0.06	No significant difference in AI awareness between male and female students.
H3	ANOVA	F = 5.67, p < 0.01	Significant difference in AI understanding across year levels.
H4	Pearson Correlation	r = 0.62, p < 0.001	Strong positive correlation between prior AI exposure and AI literacy.
H5	Frequency Analysis	78% positive perception	Majority of students perceive AI as having a positive impact on their careers.

- **H1:** STEM students have significantly higher AI awareness than non-STEM students.
- **H2:** Gender differences in AI awareness are not statistically significant.
- **H3:** Upper-year students (third and fourth years) have significantly higher AI understanding than first-year students.
- **H4:** Prior exposure to AI-related courses strongly correlates with higher AI literacy.
- **H5:** A majority of students (78%) view AI as beneficial for their future careers.

Table 5: Correlation Between Prior AI Exposure and AI Literacy

Variable	Prior AI Exposure	AI Literacy
Prior AI Exposure	1.00	0.62**
AI Literacy	0.62**	1.00

There is a strong positive correlation ($r = 0.62$, $p < 0.001$) between prior AI exposure and AI literacy. This suggests that students who have taken AI-related courses are more likely to have a better understanding of AI concepts. The strong positive correlation between AI exposure and literacy underscores the importance of integrating AI experiences into education. Providing more hands-on learning opportunities will help students develop AI skills and improve their understanding, preparing them for AI-driven careers.

Table 6: Students' Perceptions of AI's Impact on Society and Careers

Perception	Frequency	Percentage
Positive Impact	195	78%
Neutral Impact	40	16%
Negative Impact	15	6%

A majority of students (78%) believe AI will have a positive impact on society and their careers, while only 6% perceive it negatively. This indicates a generally optimistic outlook toward AI. Most students recognize AI's benefits, with very few holding negative perceptions. Educational institutions and policymakers should use this optimism to further AI education, skill development, and career opportunities while addressing concerns through awareness programs and ethical discussions.

1.8 FINDINGS

1. Among STEM students, a significant portion (33.3%) demonstrates high awareness of AI, whereas only 20% of non-STEM students fall into this category. On the other hand, nearly a quarter of all students (24%) exhibit low awareness of AI.
2. When it comes to understanding AI, students in their fourth year achieve the highest mean understanding score of 7.5, while first-year students score the lowest at 5.1. Prior exposure to AI plays a crucial role, as those who have encountered AI before score an average of 7.8, compared to 5.4 for those without prior exposure.
3. A slight difference in understanding is observed between genders, with male students averaging 6.5 and female students scoring slightly lower at 5.9.

4. Students generally hold a positive perception of AI, with 78% expressing optimism. STEM students are more enthusiastic, with 86.7% viewing AI positively, while non-STEM students show a comparatively lower positivity rate at 65%.
5. Regarding career prospects, nearly half of the students (48%) believe AI will have a significantly positive influence on their professional journey.
6. Interest in AI skill development is high, with 76% of students eager to learn and improve their expertise in this field.
7. However, certain challenges hinder AI learning, with 32% of students citing a lack of resources and 28% struggling with the complexity of AI concepts.

1.9 SUGGESTIONS

1. Integrate AI topics into courses and organize workshops, guest lectures, and seminars to enhance awareness among students.
2. Develop structured AI learning pathways with beginner modules, advanced projects, online resources, and mentorship programs.
3. Introduce scholarships, boot camps, and mentorship initiatives for female students while promoting successful women in AI.
4. Incorporate AI ethics, applications, and career opportunities in academic discussions to build on students' positive perceptions.
5. Provide career counselling, highlight AI-related job opportunities, and collaborate with tech companies for internships and live projects.
6. Offer hands-on AI courses, coding challenges, research opportunities, and engage students through hackathons and gamified learning.
7. Ensure access to AI learning materials, establish AI labs, secure funding, and simplify complex concepts through step-by-step tutorials and peer-learning programs.

1.10 REFERENCES

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