# KNOWLEDGE OF ARTIFICIAL INTELLIGENCE IN LEARNING: A STUDY AMONG COLLEGE STUDENTS

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**Abstract**
*The rapid advancement of Artificial Intelligence (AI) is significantly transforming the educational landscape, making it essential for students to possess a sound understanding and perception of AI in learning. This study investigates the knowledge of AI among College students in Chengalpattu district. A total of 100 College students were selected through random sampling as the sample of the study. The investigator developed an AI knowledge test consisting of 30 items, with a total score ranging from 0 to 30. The findings revealed that the mean score of the students was 11.09, which falls below the 50th percentile, indicating a generally low level of AI knowledge among the participants. The study highlights the need for integrating AI awareness and education into the college curriculum to equip students for the evolving demands of the digital world. The implications of the findings are discussed in relation to educational policy and curriculum development.*
***Keywords:*** *Artificial Intelligence (AI), College Students, Gender, Stream of Study, Management Type.*

## Introduction

Artificial Intelligence (AI) is rapidly transforming the landscape of education, reshaping how students learn and how educators teach. As AI becomes increasingly integrated into academic and professional environments, it is essential for college students to possess a fundamental understanding of its concepts and applications. However, in many educational contexts, especially in developing regions, students' exposure to AI remains limited. This study explores the **knowledge of Artificial Intelligence in learning among college students** in the Chengalpattu district. With a sample of 100 students selected through random sampling, the research aims to assess their level of AI awareness and examine differences based on gender, stream of study (Arts vs. Science), and type of institution (Government vs. Private). The findings are intended to inform educators and policymakers about current gaps and guide the integration of AI literacy in higher education.

## Objectives of the Study

- To assess the level of knowledge of Artificial Intelligence (AI) in learning among College students.
- To identify any significant differences in AI knowledge based on demographic variables such as gender, stream of study, and Management Type.

**Hypotheses of the Study**

- There is no significant difference in the knowledge of AI in learning among College students based on gender.
- There is no significant difference in the knowledge of AI in learning among College students based on stream of study.
- There is no significant difference in the knowledge of AI in learning among College students based on Management Type.

**Review of Related Literature**

Several studies have investigated students' awareness and understanding of Artificial Intelligence (AI), particularly in the context of education. According to Zawacki-Richter et al. (2019), although AI tools are increasingly being integrated into educational settings, students often lack fundamental knowledge about how AI functions. Similarly, Kose et al. (2020) found that most undergraduate students possess only a basic understanding of AI concepts, and their exposure to AI technologies is usually limited to consumer-level applications such as voice assistants and chatbots.

Students' perception of AI plays a critical role in its successful integration in learning environments. Luckin et al. (2016) emphasized that learners with positive perceptions toward AI are more likely to accept and utilize AI-driven tools for personalized learning. In a study by Chounta et al. (2022), it was noted that students showed mixed feelings about AI in education some appreciated its efficiency, while others feared loss of teacher interaction and data privacy concerns.

Demographic variables such as gender, stream of study, and year of study have shown varying impacts on AI awareness. Tambe and Jadhav (2021) revealed that students from technology-related streams tend to have higher AI knowledge compared to their peers in humanities or commerce. Shah et al. (2023) also found that male students slightly outperformed female students in AI-related awareness, though the gap is narrowing with increasing digital exposure across disciplines.

**Gaps in Existing Literature**

Most existing studies focus on AI in engineering or computer science education. However, limited research has been done to assess general college students' knowledge of AI, particularly in non-technical fields and rural or semi-urban regions such as Chengalpattu district. Furthermore, few studies have developed or validated custom AI knowledge assessment tools.

**Methodology**

- **Sample**: The sample consists of 100 College students studying in Chengalpattu district, selected using the random sampling method.

- **Tool Used**: A 30-item AI knowledge test developed by the investigator was used to measure students' knowledge. The score ranges from 0 to 30.
- **Design**: The study follows a descriptive survey design.
- **Data Collection**: Responses were collected using a structured questionnaire administered in person.
- **Statistical Techniques**: Descriptive statistics (mean, percentile) and t-test were employed to analyze the data.

**Analysis and Interpretation of Data**

**Table 1 Mean and Standard Deviation of Knowledge of Artificial Intelligence Scores**

| Sl. No. | Variables | | N | Mean | S.D |
|---|---|---|---|---|---|
| | **Total Sample** | | **100** | **11.09** | **2.29** |
| 1. | Gender | Male | 50 | 11.35 | 2.38 |
| | | Female | 50 | 10.54 | 2.22 |
| 2. | Stream of study | Arts | 61 | 10.42 | 2.20 |
| | | Science | 39 | 12.22 | 2.35 |
| 3. | Management Type | Government | 54 | 10.80 | 2.32 |
| | | Private | 46 | 11.08 | 2.30 |

The mean and standard deviation of knowledge on Artificial Intelligence score of total sample are scores of are 11.09 and 2.29 respectively. One can get a maximum score of 30 for knowledge on Artificial Intelligence Test.

A mean of 11.09 out of 30 translates to about 36.87%, which is significantly low. Being below the 50th percentile (i.e., the median) also suggests that more than half of the students scored above 11.06, but the overall average is still low possibly due to many very low scores. This supports the conclusion that AI literacy or awareness is lacking among the surveyed group.

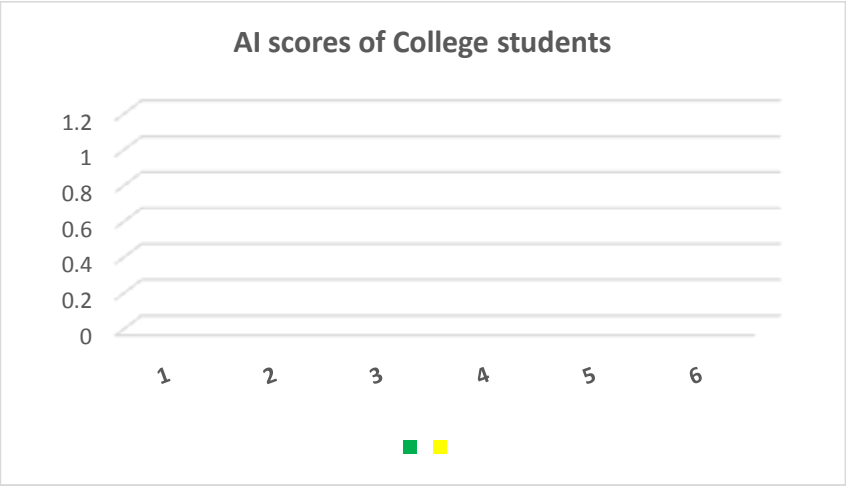


**Figure 1 AI Test Scores Among College Students**

**The significance of the difference between the means of the knowledge on artificial intelligence scores of pairs of sub samples**

It may be recalled that one of the objectives of the present study is to study, if there is any significant difference in knowledge on Artificial Intelligence in respect of the selected pairs of sub-samples of College students divided on the bases of (a) Gender; (b) stream of study; (c) Management Type.

**Null Hypothesis 1**

There is no significant difference in the knowledge on Artificial Intelligence between the male and female College students.

**Table 2 Difference between The Means of Knowledge on Scores of The Sub-Samples of the Male and Female College Students**

| Sub Samples | N | Mean | SD | 't' Value | Significance at 0.05 level |
|---|---|---|---|---|---|
| Male | 50 | 11.35 | 2.38 | 2.09 | Significant |
| Female | 50 | 10.54 | 2.22 | | |

The details of the calculations are given in table 2 In respect of the male and female students, the 't' value is found to be 2.09 which is significant at 0.05 level. Therefore the null hypothesis 1 is rejected and it is concluded that there is a significant difference in knowledge on Artificial Intelligence between the male and female College students.

- While comparing the mean scores male are comparatively higher in Artificial Intelligence than their counterparts.

**Null Hypothesis 2**

There is no significant difference in the knowledge on Artificial Intelligence between the Arts and Science College students.

**Table 3 Difference between The Means of Knowledge on Artificial Intelligence Scores of The Sub-Samples of The Arts and Science Subject College Students**

| Sub Samples | N | Mean | SD | 't' Value | Significance at 0.05 level |
|---|---|---|---|---|---|
| Arts | 61 | 10.42 | 2.20 | 4.16 | Significant |
| Science | 39 | 12.22 | 2.35 | | |

The details of the calculations are given in table 3 In respect of the arts and science College students, the 't' value is found to be 4.16 which is not significant at 0.05 level. Therefore the null hypothesis 2 is rejected and it is concluded that there is significant

difference in the knowledge on Artificial Intelligence between the arts and science stream college students.

- While comparing the mean scores science stream students are comparatively higher in Artificial Intelligence than those who are studying in Arts stream.

**Null Hypothesis 3**

There is no significant difference in the knowledge on Artificial Intelligence between the Government and Private College students.

**Table 4 Difference between The Means of Knowledge on Artificial Intelligence Scores of The Sub-Samples of The Government and Private College Students**

| Sub Samples | N | Mean | SD | 't' Value | Significance at 0.05 level |
|---|---|---|---|---|---|
| Government | 236 | 10.85 | 4.30 | 1.10 | Not Significant |
| Private | 105 | 11.88 | 4.12 | | |

The details of the calculations are given in table 4. In respect of the Government and Private College students, the 't' value is found to be 1.10 which is not significant at 0.05 level. Therefore the null hypothesis 3 is accepted and it is concluded that there is no significant difference in the knowledge on Artificial Intelligence between the Government and Private College students.

**Major Findings of the Study**

The following are the important findings of the present investigation.

1. The level of knowledge on Artificial Intelligence of College students is poor.
2. There is significant difference in the knowledge on Artificial Intelligence between the male and female College students.
   - While comparing the mean scores male are comparatively higher in Artificial Intelligence than their counterparts.
3. There is significant difference in the knowledge on Artificial Intelligence between the Arts and Science subject College students.
   - While comparing the mean scores science stream students are comparatively higher in Artificial Intelligence than those who are studying in Arts stream.
4. There is no significant difference in the knowledge on Artificial Intelligence between the Government and Private College students.

**Discussion and Implications**

- The present study indicates that the overall knowledge of Artificial Intelligence (AI) among college students is poor. This aligns with findings from **Sharma and Sharma (2022)**, who reported limited AI awareness among undergraduate students across

various disciplines. They emphasized that many students are unfamiliar with the practical applications and implications of AI, despite its growing significance in modern life and the job market.

- The significant difference found between male and female students in AI knowledge echoes the work of **Kumar and Rani (2021)**, who found that male students often exhibit higher levels of interest and confidence in technology-related domains, including AI. This may be rooted in broader societal and educational influences, where females have historically been underrepresented in STEM fields.
- While the current study found significant difference in AI knowledge between Arts and Science students, the higher mean scores among Science students are consistent with the findings of **Nair and Joseph (2020)**. Their research revealed that students from science backgrounds tend to be more exposed to technological tools and AI concepts, even if informally, through their coursework.
- Similarly, the absence of a significant difference between Government and Private college students mirrors the results of **Thomas and Menon (2019)**, who concluded that institutional type does not necessarily dictate students' technological awareness. Their study found that unless there is specific curriculum intervention, students across various institutions tend to have comparable knowledge levels regarding emerging technologies like AI.

**Conclusion**

The study reveals that the overall knowledge of Artificial Intelligence among college students in Chengalpattu district is relatively poor, with a mean score significantly below the 50th percentile. Gender-wise, male students showed a slightly better understanding of AI compared to female students. While significant difference was found between students from Arts and Science streams or between those from, Science students exhibited slightly higher mean scores. These findings highlight the urgent need to enhance AI awareness and education at the college level, regardless of academic stream or institutional type. Integrating AI into the curriculum, organizing workshops, and offering hands-on training can help bridge this knowledge gap and prepare students for the demands of a technology-driven future.

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