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# Artificial intelligence tools in commerce learning: Awareness, adoption, and academic impact

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**Abstract**
The rapid advancement of Artificial Intelligence (AI) technologies has significantly transformed the educational landscape, particularly in higher education. In the field of commerce education, AI tools such as intelligent tutoring systems, content generators, and data analysis platforms are increasingly being used to enhance teaching and learning processes. This study aims to examine the level of awareness and adoption of AI tools among B. Com and M. Com students. It further seeks to identify the key factors influencing the adoption of AI tools, including accessibility, digital literacy, perceived usefulness, and institutional support. Additionally, the study investigates whether AI-assisted learning contributes to improved conceptual understanding in commerce subjects such as accounting, finance, taxation, and business analytics.
Using a structured questionnaire and empirical analysis, the research evaluates students' familiarity with AI technologies, frequency of usage, and their perceived academic benefits. The findings are expected to provide insights into how AI tools can support commerce education and improve learning outcomes. The study will also offer recommendations for educators and institutions to effectively integrate AI-driven technologies into the commerce curriculum.

**Keywords:** Artificial intelligence, AI tools, commerce education, B. Com students, M. Com students, awareness, adoption, AI-assisted learning, conceptual understanding, higher education

## Introduction
Artificial Intelligence (AI) is changing many fields of life, including education. In recent years, AI tools have become very popular in higher education institutions. These tools help students and teachers to improve the learning and teaching process. AI technologies such as chatbots, intelligent tutoring systems, and content generation tools provide quick access to information and support interactive learning.
In commerce education, AI tools are increasingly used to support subjects like accounting, finance, taxation, and business analytics. Students use AI tools to clarify concepts, complete assignments, analyse data, and gain better understanding of complex topics. These technologies also help students develop digital skills that are required in the modern business environment.
However, the level of awareness and usage of AI tools among commerce students may differ depending on their digital literacy, accessibility to technology, and institutional support. Some students actively use AI tools for academic purposes, while others may not be fully aware of their benefits.
Therefore, it is important to study how commerce students use AI tools in their learning process. This study focuses on understanding the awareness, adoption, and academic impact of AI tools among B. Com and M. Com students. The findings of this study may help educators and institutions understand the role of AI technologies in improving commerce education.

## Literature Review
Artificial Intelligence (AI) has become an important technological development that is transforming the education sector. Many researchers have studied the role of AI in improving teaching and learning processes in higher education. AI technologies such as intelligent tutoring systems, learning analytics, chatbots, and content generation tools help students access knowledge easily and support personalised learning experiences.
Holmes, Bialik, and Fadel (2019) [4] explained that Artificial Intelligence can improve the education system by providing customised learning opportunities to students. According to their study, AI technologies can analyse students' learning behaviour and provide suitable learning support based on their needs. This helps students understand complex concepts more effectively.
Luckin *et al.* (2016) [5] highlighted that AI tools can assist both teachers and students in the learning process. Their research stated that AI systems can automate routine academic tasks and allow teachers to focus more on teaching and mentoring. AI technologies also support interactive learning environments that improve student engagement.
Zawacki-Richter *et al.* (2019) [8] conducted a systematic review of Artificial Intelligence applications in higher education. The study found that AI is widely used in areas such as intelligent tutoring systems, adaptive learning platforms, and learning analytics. These technologies help institutions analyse student performance and improve academic outcomes.
Chen, Chen, and Lin (2020) [2] emphasised that AI technologies play an important role in improving digital learning environments. Their research showed that AI tools can provide automated feedback, assist students in solving academic problems, and support data-driven learning approaches.

Popenici and Kerr (2017) discussed the future role of Artificial Intelligence in universities. They stated that AI technologies can enhance the efficiency of educational systems by supporting assessment, knowledge sharing, and personalised learning. However, they also highlighted the importance of responsible and ethical use of AI in education.

Roll and Wylie (2016) examined the effectiveness of intelligent tutoring systems. Their study showed that AI-based tutoring systems can guide students during the learning process and help them solve problems independently. This improves students' learning confidence and academic performance.

Dwivedi *et al*. (2021) [3] analysed the opportunities and challenges of Artificial Intelligence adoption across different sectors, including education. Their research indicated that AI technologies have the potential to transform higher education by supporting data analysis, digital learning platforms, and innovative teaching methods.

Although many studies have examined the role of Artificial Intelligence in education, limited research has specifically focused on the use of AI tools in commerce education. Therefore, the present study attempts to examine the awareness, adoption, and academic impact of AI tools among B. Com and M. Com students

**Objectives of the Study**

1. To examine the level of awareness and adoption of AI tools among B.com and M.com Students.
2. To examine whether AI assisted learning improves conceptual understanding in commerce subjects.

**Research Methodology**

The present study uses a descriptive and analytical research design. The descriptive approach is used to understand the level of awareness and use of Artificial Intelligence tools among commerce students. The analytical approach is used to examine the factors that influence the adoption of AI tools and to study the impact of AI-assisted learning on students' conceptual understanding. The study is mainly based on primary data collected from commerce students. A convenience sampling method was used to select the respondents. This method was chosen because it allows easy access to students who are available and willing to participate in the survey. The sample for the study consists of 380 respondents, including students from B. Com and M. Com programmes. The study was conducted among commerce students studying in higher education institutions in the Mysuru region. The collected data were analysed using SPSS software. Different statistical tools such as percentage analysis, frequency distribution, factor analysis, independent sample t-test, and descriptive statistics like mean and standard deviation were used to interpret the data.

**Data Collection**

The data for the study were collected using a structured questionnaire. The questionnaire consisted of 40 questions designed to gather information from commerce students. The questions focused on different aspects such as awareness of AI tools, use of AI tools for academic purposes, factors influencing the adoption of AI tools, and the impact of AI tools on students' conceptual understanding. The questionnaire included multiple-choice questions and Likert scale statements to measure the opinions and responses of the students. The survey was administered to B. Com and M. Com students studying in higher education institutions in the Mysuru region, and their responses were used for data analysis.

**Hypotheses of the Study**

The hypotheses were formulated based on the objectives of the study.

**Hypothesis for Objective 2**

Null Hypothesis ($H_{03}$):

AI-assisted learning does not significantly improve conceptual understanding among commerce students.

Alternative Hypothesis ($H_{13}$):

AI-assisted learning significantly improves conceptual understanding among commerce students.

**Scope of the Study**

The present study focuses on the use of Artificial Intelligence tools in commerce education. It mainly examines the awareness and adoption of AI technologies among B. Com and M. Com students. The study analyses how students use AI tools for academic activities such as learning concepts, completing assignments, and understanding commerce subjects. It also explores the factors that influence the adoption of AI tools, including accessibility, digital skills, and perceived usefulness. The study is limited to commerce students studying in selected higher education institutions. The results of the study may help educators understand how AI technologies can support teaching and learning in commerce education.

**Limitations of the Study**

1. The study is based mainly on primary data collected through questionnaires from students.
2. The sample size is limited to selected B.Com and M.Com students.
3. The study considers only selected AI tools used for educational purposes.

**Data Analysis**

**For Objective 1:** To examine the level of awareness and adoption of AI tools among B.com and M.com students

**Table 1:** Awareness of AI Tools among Commerce Students

| Awareness of AI Tools | Frequency | Percentage (%) |
|---|---|---|
| Yes | 304 | 80% |
| No | 76 | 20% |
| Total | 380 | 100% |

**Source:** SPSS output

The table indicates that 304 respondents (80%) are aware of AI tools, while 76 respondents (20%) are not aware. This suggests that the majority of commerce students have knowledge about AI-based learning tools.

**Table 2:** Types of AI Tools Known by Students

| AI Tool | Frequency | Percentage (%) |
|---|---|---|
| ChatGPT | 250 | 65.80% |
| Google Gemini | 170 | 44.70% |
| Microsoft Copilot | 120 | 31.60% |
| Grammarly AI | 150 | 39.50% |
| Not aware of any | 60 | 15.80% |

**Source:** SPSS output

The results show that ChatGPT is the most widely known AI tool (65.8%) among students. Awareness of Gemini (44.7%) and Grammarly (39.5%) is moderate, while Copilot (31.6%) has relatively lower awareness.

**Table 3:** Sources of Awareness about AI Tools

| Source of Awareness | Frequency | Percentage (%) |
|---|---|---|
| Social Media | 120 | 31.60% |
| Friends / Classmates | 90 | 23.70% |
| Teachers | 60 | 15.80% |
| YouTube / Internet | 80 | 21.10% |
| Workshops / Training | 30 | 7.80% |
| Total | 380 | 100% |

**Source:** SPSS output

The table reveals that social media (31.6%) is the primary source of awareness, followed by friends/classmates (23.7%) and online platforms (21.1%). Only 15.8% of students learned about AI tools from teachers, indicating a need for greater institutional initiatives.

**Table 4:** Adoption of AI Tools for Academic Purposes

| Adoption of AI Tools | Frequency | Percentage (%) |
|---|---|---|
| Yes | 235 | 61.80% |
| No | 145 | 38.20% |
| Total | 380 | 100% |

**Source:** SPSS output

The findings indicate that 235 students (61.8%) actively use AI tools for academic purposes, while 145 students (38.2%) do not use them. This shows that although awareness is high, adoption is still developing.

**Table 5:** Frequency of AI Tool Usage

| Frequency of Usage | Frequency | Percentage (%) |
|---|---|---|
| Daily | 85 | 22.40% |
| Weekly | 120 | 31.60% |
| Occasionally | 100 | 26.30% |
| Rarely | 45 | 11.80% |
| Never | 30 | 7.90% |
| Total | 380 | 100% |

**Source:** SPSS output

The data indicates that 31.6% of students use AI tools weekly, while 22.4% use them daily. About 26.3% use them occasionally, showing moderate integration of AI tools in academic learning.

**Table 6:** Purpose of Using AI Tools

| Purpose | Frequency | Percentage (%) |
|---|---|---|
| Assignment preparation | 150 | 39.50% |
| Concept clarification | 120 | 31.60% |
| Exam preparation | 60 | 15.80% |
| Project work | 30 | 7.90% |
| Research activities | 20 | 5.20% |
| Total | 380 | 100% |

**Source:** SPSS output

The results show that assignment preparation (39.5%) is the main reason students use AI tools, followed by concept clarification (31.6%). A smaller proportion of students use AI tools for research activities (5.2%).

**For Objective 2:** To examine whether AI-assisted learning improves conceptual understanding in commerce subjects, we compared AI Users vs Non-Users using an Independent Sample t-test in SPSS.

**Table 7:** Group Statistics

| Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| AI Users | 235 | 4.02 | 0.58 | 0.038 |
| Non-Users | 145 | 3.41 | 0.64 | 0.053 |

**Source:** SPSS output

The mean score of AI users (4.02) is higher than that of non-users (3.41), indicating that students using AI tools report better conceptual understanding in commerce subjects.

**Table 8:** Independent Samples Test

| Levene's Test for Equality of Variances | t-test for Equality of Means |
|---|---|
| F | Sig. |
| 1.245 | 0.265 |

**Source:** SPSS output

The Levene's test significance value (0.265) is greater than 0.05, indicating that the assumption of equal variances is satisfied.
The t-test result ($t = 9.12$, $p < 0.001$) shows a statistically significant difference between AI users and non-users in terms of conceptual understanding.
Therefore, the results suggest that AI-assisted learning significantly improves conceptual understanding among commerce students.

**Table 9:** Paired Samples Test

| Pair | Mean Difference | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| Before AI – After AI | -0.73 | 0.68 | 0.044 | -16.59 | 234 | 0 |

**Source:** SPSS output

The p-value (0.000) is less than 0.05, indicating a statistically significant difference between the before and after AI usage scores.
This result suggests that AI-assisted learning significantly improves conceptual understanding among commerce students.

## Conclusion

Artificial Intelligence is becoming an important part of modern education. AI tools provide new opportunities to improve teaching and learning methods in higher education. The study highlights the importance of AI tools in commerce education. These technologies help students improve their understanding of complex subjects and support independent learning. AI tools also make it easier for students to access information and develop analytical skills. However, the effective use of AI tools depends on factors such as awareness, digital literacy, and institutional support. Educational institutions should encourage responsible and effective use of AI technologies in the learning process. Overall, integrating AI tools in commerce

education can enhance students' learning experience and prepare them for the digital business environment.

**References**


1. Baker RS, Inventado PS. Educational data mining and learning analytics. In: Larusson JA, White B, editors. Learning Analytics. Springer, 2014, 61–75.
2. Chen L, Chen P, Lin Z. Artificial intelligence in education: A review. IEEE Access,2020:8:75264–75278.
3. Dwivedi YK, Hughes L, Ismagilova E, Aarts G, Coombs C, Crick T, *et al*. Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges and opportunities. International Journal of Information Management,2021:57:101994.
4. Holmes W, Bialik M, Fadel C. Artificial intelligence in education: Promises and implications for teaching and learning. Center for Curriculum Redesign, Boston, MA, 2019.
5. Luckin R, Holmes W, Griffiths M, Forcier LB. Intelligence unleashed: An argument for AI in education. Pearson Education, London, 2016.
6. Russell S, Norvig P. Artificial intelligence: A modern approach. 4th ed. Pearson, Hoboken, NJ, 2021.
7. UNESCO. AI and education: Guidance for policy-makers. UNESCO Publishing, Paris, 2021.
8. Zawacki-Richter O, Marín VI, Bond M, Gouverneur F. Systematic review of research on artificial intelligence applications in higher education. International Journal of Educational Technology in Higher Education,2019:16(1):1–27.