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Influence of Digital Humanities and AI-Assisted Learning Tools on Final-Year Undergraduate Commerce Students in Guntur

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Abstract

The present study investigates the influence of Digital Humanities (DH) and AI-assisted learning tools on the academic experience of final-year Undergraduate Commerce students in Guntur. Using a quantitative research design, data were collected through a structured online questionnaire sent to 100 students (50 male and 50 female) selected through convenience sampling. The research has compared the use and effectiveness of AI tools, particularly ChatGPT and Gemini. The Technology Acceptance Model (TAM) has also been applied to assess the students' perceptions of usefulness and ease of use. The findings reveal that ChatGPT is the most widely used and preferred tool among students due to its reliability, accessibility, and contextual accuracy. The study also reveals gender-based differences in the use of these tools: female students primarily used AI tools for conceptual understanding and exam preparation, while male students used them more for assignments and project work. Overall, 76% of participants reported that AI-assisted learning tools improved their learning pace and academic performance, and 74% preferred ChatGPT over Gemini for commerce-related subjects. The study concludes that integrating AI into DH can effectively support personalised, flexible, and student-centred learning in higher education.

1. INTRODUCTION

In recent years, artificial intelligence (AI) and digital technologies have advanced rapidly, making their application in education inevitable. DH were traditionally used for textual analysis and historical research; the rapid evolution of technology has enabled them to perform algorithmic processing and to use other data-driven methodologies. Likewise, the ability of AI-assisted tools to produce coherent narratives and identify previously unnoticed patterns challenges traditional methods of authorship in education (Toktas, 2025). While DH supports

the integration of AI in learning, it backs a more inclusive and varied approach that ensures local learning methods are not sidelined. DH and education in the post-humanist era are undergoing shifts driven by AI, which is fueling the growth of large-scale textual analysis. With the growth of AI-assisted tools such as ChatGPT and Copilot, more digital humanists will be able to leverage computational approaches in DH research (Chun & Elkins, 2023). DH can extend beyond its traditional role of textual analysis and be included in critical data interpretation to analyse market trends and business cases. As commerce generally emphasizes digital literacy and analytical thinking, DH can provide the right tools and a technology-driven learning scope.

AI-Assisted Learning Tools offer a more personalised learning experience, as content is adapted to an individual's learning style, cognitive abilities, and emotional responses (Toktas, 2025). The adaptive, student-centric focus of these AI-assisted applications makes them more engaging for students, but also carries risks related to privacy and knowledge biases. The presence of AI in the education system of the 21st century is inevitable, with multiple AI-assisted learning tools such as Dall-E, Midjourney, Bing AI, Grammarly, and ChatGPT offering high potential for such applications. With proper implementation, these applications can help save time for both students and teachers. Studies by Lee et al. (2024) have shown that teachers using AI-assisted tools improve their efficiency and data analysis. The role of AI-assisted tools in higher education remains uncertain due to differences in opinion among staff and the lack of ethical and appropriate modes of engagement with AI. The present research aims to understand the influence that AI-assisted tools have on final-year undergraduate commerce students in Guntur. These tools are known for providing students with options and opportunities, helping them enhance their creative and digital skills essential to study success. Based on the aim, the following objectives have been developed, which will be fulfilled through the course of the research:

- To explore the use of Digital Humanities and AI tools among commerce students in Guntur.
- To assess the impact of the Digital Humanities and AI tools on their learning experience.
- To study students' attitudes toward digital and AI-based learning with a necessary comparison between ChatGPT and Gemini.

2. LITERATURE REVIEW

2.1. Review Key Concepts

Digital humanities

Digital humanities (DH) can be seen as a highly interdisciplinary field; it is an academic field that also utilises computing in the humanities (Luhmann & Burghardt, 2022). DH has also been defined as the intersection between computational technologies and humanities scholarship. As DH supports the use of digital tools for researching and analysing, it is driven by digital data (Hawkins, 2022). Although archival data is available globally, the purpose of DH is to make the data more integrated and interrogable. DH spurred a transformative movement to convert all organisational documents into digital formats for easier access and preservation. There are also some general suggestions in DH for processing large datasets, finding relationships across heterogeneous sources, and allowing access to unstructured data. The goal of DH is thus to use different tools in making data more connected and machine-readable. In the context of commerce education, DH supports critical evaluation and interpretation of various aspects of the market, leading to ethical decision-making and proper communication. DH can therefore help to analyse datasets that are complex and interpret different business concepts to offer unique perspectives.

2.2.AI-Assigned Tools

AI-Assisted Learning Tools are applications that use AI to enhance and support learning. These tools improve the learning experience by creating personalised content that supports learning

(Pham et al. 2023). AI-assisted learning is used extensively in fields such as medicine, social science, and business, but is more recent in education. These tools can provide both guidance and feedback to the student. The applications' adaptive learning capabilities make suggestions and recommendations based on students' progress and foster independent learning. AI is easy to use; the introduction of applications such as ChatGPT raises ethical concerns, as these learning tools enable children to be deceptive (Vargas-Murillo, de la Asuncion, & de Jesús Guevara-Soto, 2023). Students can also lose their potential to generate original thoughts if they become overly reliant on AI-assisted learning; thus, controlling the use of AI tools in the educational setting is a major concern.

2.3. Review Of Past Studies

Casani (2023) has shown in their research the massive potential that DH and AI tools offer for education; the ethical implementation of these methods emphasises the human experience and fosters critical thinking. DH emphasises open-mindedness among students and promotes effective use of digital tools. The study by SUÁREZ (2025) also sheds light on the potential of DH in education; it can, in essence, renew the humanities in higher education in the 21st century, as it offers the potential to train teachers. The digital transformation taking place in higher education can redesign programs based on the skills students actually need to progress in their careers. While discussing the impact these tools can have on education and the job market, SUÁREZ (2025) states that they favour a position in the market that would amplify workers' capabilities. The study by AJIBADE & IBIRONKE (2023) states that the introduction of AI in education has significantly altered the realities of academic writing, as disparities can be seen in assignments written in the classroom and at home. The methods of assessment in education need to be reimagined to cultivate critical thinking and creativity among the students. While AI implementation raises ethical issues, these studies also offer hope that careful management can lead to the thoughtful integration of AI into the curriculum.

Nowadays, universities have generally been adapting to emerging digital technologies; however, bringing DH to education has been one of the main goals and agendas of higher education institutions. While some higher education institutions in the post-pandemic era view technological innovations as a means to enhance learning and knowledge experiences (Viola, 2023). DH bridges the education gap and allows the digital humanists to explore the relationship between critical theory and the digital. One of the primary goals of education is the development of thinking skills among students. While DH is responsible for tackling large amounts of data effectively, it also motivates aspiring students and researchers to understand the landscape of critical thinking and improve their data analysis (Mishra, 2023).

AI tools, on the other hand, are highly efficient in supporting educational activities. For commerce or business education, the use of AI tools fosters creativity among the students and helps them better conceptualise critical aspects such as processes, activities, and actors. From predictive systems to data mining, AI tools are effective for personal assistance. Real-time analysis supports academic analytics and adaptive learning. AI has a direct impact on students; these tools not only increase the flexibility and accessibility of education but also equip students with the skills highly needed in business environments (Surugiu, Grădinaru & Surugiu, 2024). With the help of chatbots, robots, automated assessments, and digital tutoring systems, AI technologists offer several benefits to the students. Demand for adaptive learning in education continues to rise in response to the challenges faced during the COVID-19 pandemic. Online and blended learning are prevalent in most educational settings. AI-assisted tools address social problems while enabling students to closely engage with the business scenario and develop real-life problem-solving skills. A study by Surugiu, Grădinaru & Surugiu (2024) shows that, despite 87.8% of students using AI in education, they have little awareness of the different AI tools and the benefits they provide, suggesting the need for continuous improvement in AI implementation.

2.4. Theoretical Framework

The present research has been underpinned by the Technology Acceptance Model (TAM), as it is one of the most influential frameworks for understanding users' acceptance and utilisation of technology. The theory was first proposed by Davis in 1986. He considered perceived usefulness and perceived ease of use the two main cognitive factors that determine an individual's likelihood of using a given technology (Davis, 1989). The TAM theory holds that the actual use of technology is directly influenced by a user's behaviour, attitude, and behavioural objectives; external factors also affect intention and usage (Musa et al. 2024). In the context of the present research, the study explores the influence of digital tools on final-year undergraduate commerce students. TAM can provide valuable insight into how students perceive DH and AI technologies. The TAM framework also aligns with the aim of the study to examine not only the influence but also the acceptance and behavioural intention of the students towards AI-assisted learning tools.

2.5.Research Gap

Although the existing literature discusses the role of DH and AI-assisted tools in humanities, social sciences, and general higher education, limited research has examined their application within commerce and business education. Past studies have portrayed DH as a field concerned with textual analysis, archival studies, and historical research, yet have not shed light on its potential for data interpretation and critical analysis. Even research on AI-assisted learning tools such as ChatGPT has focused more on the theoretical aspects of how they increase engagement, efficiency, and personalized learning. There is limited research on how these technologies can influence students' learning, engagement, and skill development. There is also a lack of region-specific studies that explore students' acceptance, usage patterns, and perceived benefits of AI-assisted tools within DH in the Indian context. The existing literature rarely integrates DH and AI-assisted learning tools into studies, creating a significant gap in understanding how DH principles and engagement with AI tools work. Therefore, this study

addresses these gaps by investigating the influence of DH and AI-assisted learning tools on final-year undergraduate commerce students in Guntur.

3. RESEARCH METHODOLOGY

A quantitative approach has been adopted in this research to collect data relevant to the study's objectives. This method was used to elicit objective and substantial insights into the use of AI-assisted learning and academic outputs. Data were collected through an online survey using Google Forms from undergraduate Commerce students at various colleges in the Guntur region. A total of 100 students (50 males and 50 females) were recruited for the study using a convenience sampling technique (CST), which involves selecting participants based on their convenience and availability. The sample size was considered sufficient to obtain consistent data and to ensure results that represented the whole population. The data were gathered through an online survey developed in Google Forms, consisting of closed-ended questions on AI use, frequency of use, impact on learning, and level of satisfaction with AI tools. The impact of AI on learning was measured using a 5-point Likert scale. Finally, the collected responses were analysed using charts and tables to obtain the necessary insights.

4. ANALYSIS AND FINDINGS

4.1.Frequency of AI Usage

The findings began by identifying the frequency of AI tool use among commerce undergraduate students in Guntur. As shown in Figure 1, ChatGPT is the most frequently used AI tool among students. Its high popularity, reliability, and user-friendly interface make it more attractive to students. Students prefer Gemini because it is newer; the findings thus indicate that ease of use contributes to AI tool preference.

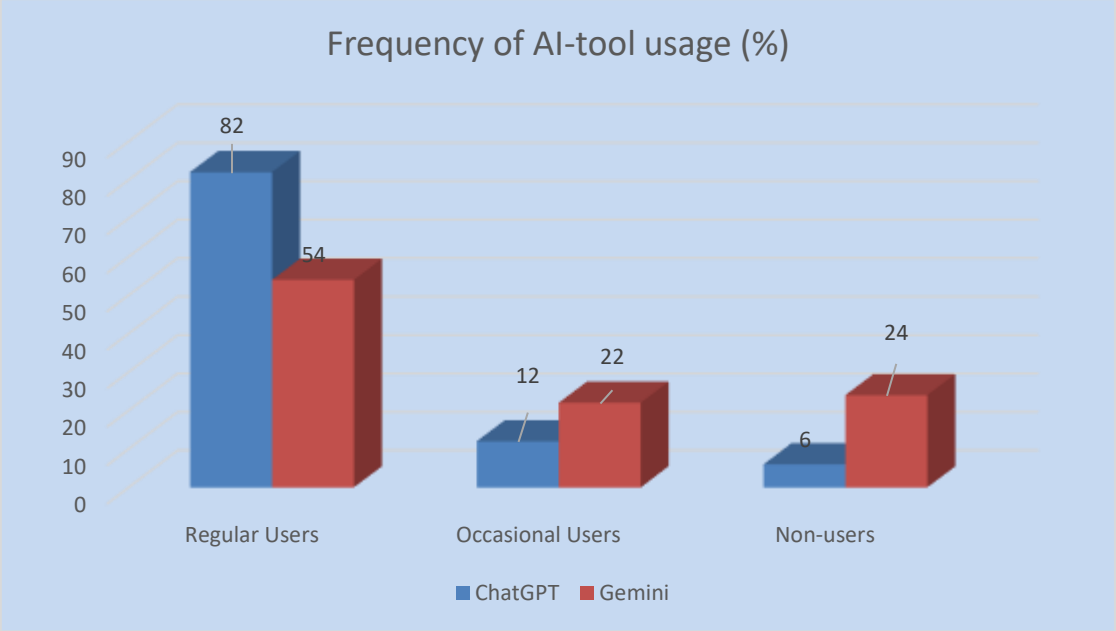

Figure 1: Users of ChatGPT and Gemini

4.2.Purpose of AI Tools

The results from Figure 2 are insightful, as they highlight the diverse purposes for which students use AI tools. The findings reveal that clarifying theoretical concepts is the main priority for students, with 61% choosing it, followed by preparing assignments (58%). The students are also seen using AI tools to prepare for their exams, projects, explore case studies, and prepare their presentations. This shows that students are not only using AI to get quick answers but also to better understand academic concepts.

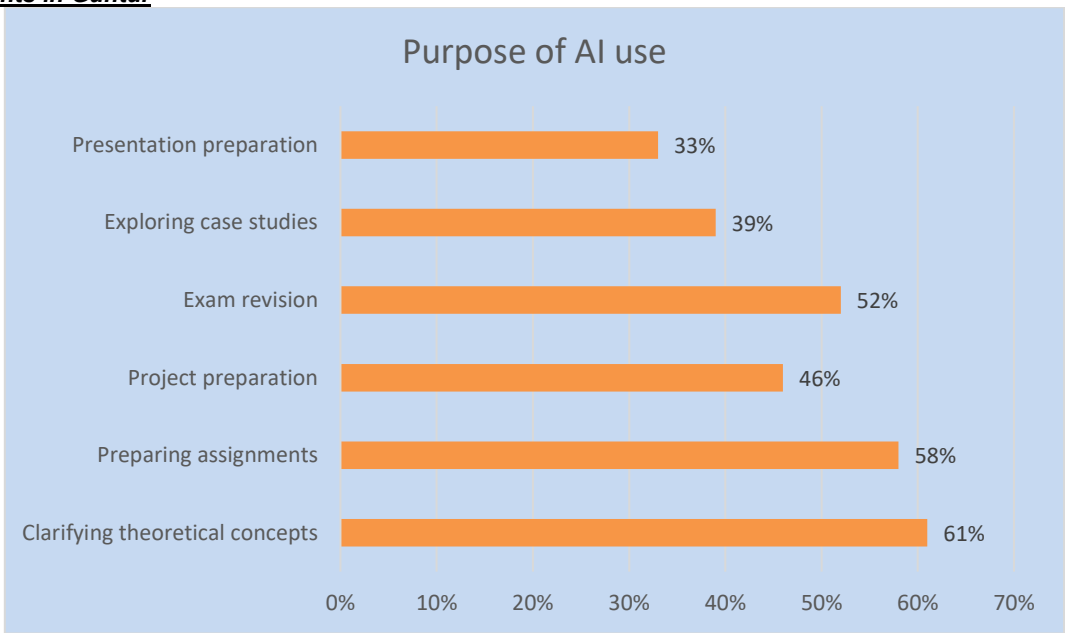

Figure 2: Purpose of using AI

4.3.Gender-Based AI Usage

A gendered perspective has been applied in this section to examine trends and purposes of use among male and female students. Female students are seen to use AI tools more frequently for clarifying the theoretical concepts (68%) and exam revision (66%). The male students, on the other hand, use these tools more frequently for preparing for their assignments (72%) and preparing projects (64%). The difference in the stats reflects the priorities: while the female students engage in deeper learning, the male students use it to carry out their tasks more efficiently.

Table 1: Usage of AI tools among male and female students

Activity	Male	Female
Clarifying theoretical concepts	42	68
Preparing assignments	72	39
Project Preparation	64	47
Exam revision	38	66
Exploring case studies	58	49
Presentation preparation	42	36

4.4.Familiarity and Accessibility with the Tool

The familiarity and accessibility of the AI tools are observed in this section. Figure 3 shows that ChatGPT ranked higher in both aspects, as well as ease of use. This supports the TAM framework, as both usefulness and ease of use are crucial elements that influence adoption.

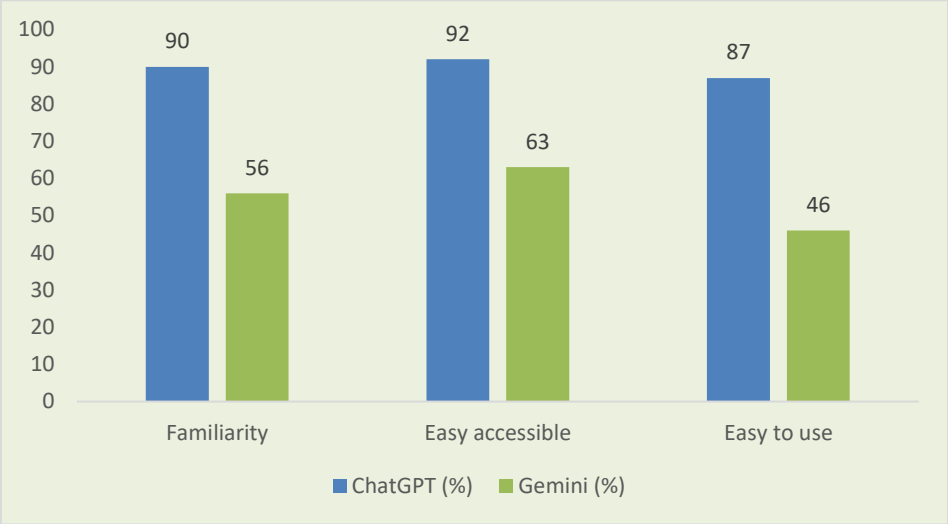

Figure 3: Familiarity and accessibility of the tool

4.5.Impact of AI-Assisted Learning Tools on Performance

The findings from Table 2 present the survey results on a Likert scale; 76% of the students have agreed or strongly agreed that the use of AI-assisted tools has improved their pace of learning. 76% of the participants also agreed or strongly agreed that they had completed academic tasks more efficiently with the use of AI. 70% of students reported that these tools helped them understand complex commerce-related concepts. 76% of participants also believe that AI will positively impact their academic performance.

Table 2: Frequency analysis of the impact of AI-assisted tools on learning

	SDA (%)	DA (%)	N (%)	A (%)	SA (%)
The use of AI-assisted learning tools (ChatGPT and Gemini) has improved my learning pace	2	4	18	53	23
I am able to complete my academic tasks most efficiently with the use of AI tools	1	5	18	50	26

It is easy for me to understand complex commerce-related concepts with AI-assisted learning tools	3	6	21	49	21
Overall, I feel that AI-assisted tools have positively impacted my academic performance	2	6	16	54	22

"SDA= Strongly Disagree, DA= Disagree, N=Neutral, A=Agree, SA=Strongly Agree"

Table 3 provides a comparative analysis of the user experience with ChatGPT and Gemini, 74% students agreed or strongly agreed on the ability of ChatGPT to answer their queries related to commerce subjects, while only 39% of the participants agreed the same for Gemini. ChatGPT has also been found to provide responses that are more contextually relevant,, with 74% of students agreein, and another 73% agreeingthatr itise suitable for conductingcommerce-relatedd projects. This confirms ChatGPT to be more suitable to meet the needs of the students.

Table 3: Frequency analysis of Comparison between Gemini and ChatGPT

	SDA (%)	**DA (%)**	**N (%)**	**A (%)**	**SA (%)**
ChatGPT responses are accurate for commerce related subjects and topics	1	5	20	51	23
Gemini responses are accurate for commerce related subjects	4	15	42	29	10
ChatGPT provides contextually relevant explanations for commerce concepts.	2	7	17	53	21
Gemini provides contextually relevant explanations for commerce concepts.	3	18	41	28	10
ChatGPT is suitable for commerce-based assignments and projects.	2	6	19	54	19
Gemini is suitable for commerce-based assignments and projects.	5	14	43	29	9

"SDA= Strongly Disagree, DA= Disagree, N=Neutral, A=Agree, SA=Strongly Agree"

4.6. Satisfaction level with AI-tools for learning

The findings from Figure 4 show the students' satisfaction levels; most students have shown high satisfaction with ChatGPT and AI tools in general. The research results indicate that ChatGPT is more engaging and efficient for students.

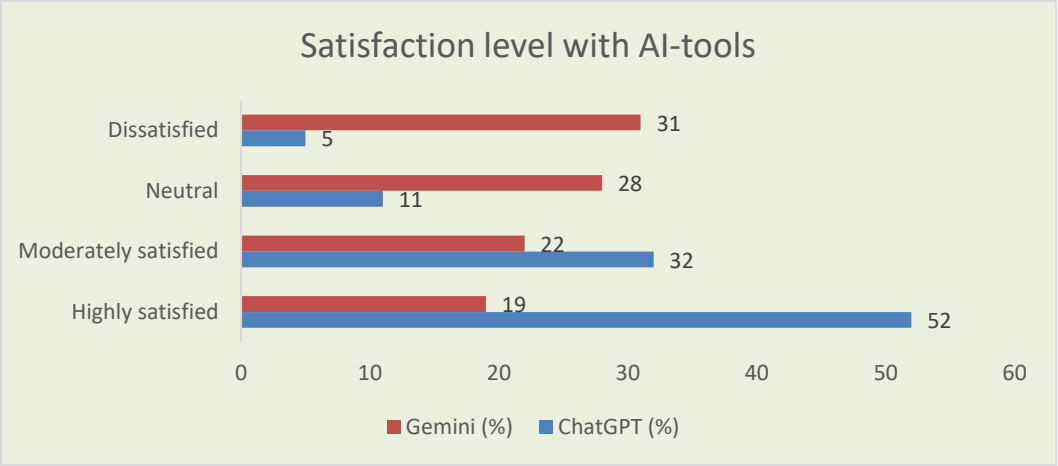

Figure 4: Satisfaction level with AI-tools

5. DISCUSSION

The findings that were derived from the study have shown that AI tools improve learning among students. The results from the data analysis have further confirmed that AI tools such as ChatGPT and Gemini are viewed positively by the students. However, the preference for the tools and usage varies across the board; gender also plays a significant role, as male and female students are seen to have different priorities when it comes to AI usage. The TAM framework adopted in the research is seen to have two main dimensions. The high frequency of users preferring ChatGPT over Gemini is a strong reflection of the perceived usefulness of the app. This aligns with Musa et al. (2024) as more population are ready to accept skills and technologies if they feel the technology is efficient and reliable to them. This also aligns with Viola (2023), as they have aimed out, although ethical concerns, many higher educational institutions acknowledge the potential of AI in improving the learning experience of the students. The purpose-based evaluation that has been carried out on the students also shows that students have diverse needs, and AI tools are used for both academic productivity and conceptual understanding.

Assignment preparation and the clarification of theoretical concepts are among the most commonly used avenues for AI tools, promoting surface-level as well as deep learning of the curriculum. This aligns with Surugiu, Grădinaru & Surugiu (2024), as AI has helped foster flexibility and accessibility. The frequency analysis of the impact of AI tools shows that nearly 76% of participants believe AI improves their learning, breaks down complex commerce-related concepts, and has an overall positive impact on their academic performance. Toktas (2025), in their research, has shed light on the potential of AI in adapting to the needs of the students and providing personalised learning. The comparative analysis that has been carried out between ChatGPT and Gemini also reveals the high preference of ChatGPT. Throughout the survey, Gemini has continued to receive a low score, indicating the need to improve the AI tools and address students' educational queries more efficiently. The findings have overall shown the benefits of AI tools and its capability in providing empowerment to the students.

6. CONCLUSION

This study has examined the influence of DH and AI-assisted learning tools on the learning experiences of final-year undergraduate commerce students in Guntur. The findings clearly address the research objectives set at the beginning of the study and show that the students prefer ChatGPT. The adoption has improved their learning efficiency, conceptual understanding, and academic performance. The comparative analysis with Gemini has further proven ChatGPT to be more accurate and contextual. The results have also shown the impact of gender on student preferences: female students engage with AI tools for better conceptual understanding, while male students are more focused on task efficiency. From a theoretical perspective, the study extends DH beyond traditional humanities disciplines and situates it within commerce education. The implementation of TAM has significantly increased students' acceptance of AI-assisted learning tools by enhancing perceived usefulness and ease of use. The study also has practical implications; the findings highlight the potential of integrating DH and AI to support personalised, flexible, and student-centred learning in higher education. he

study suggests that institutions can strategically incorporate AI tools such as ChatGPT into commerce curricula to enhance digital literacy, improve engagement with complex business concepts, and foster critical thinking.

Despite the valuable insights the research provides in higher education, it has significant limitations. The study is based on a small sample size of 100 students from the Guntar region, which has the potential of creating certain bias within the findings. The use of convenience sampling can also introduce bias, as not all students have the same level of access to technology; therefore, the study might not have captured the depth of students' experiences. Future research can thus adopt a mixed-methods approach, allowing deeper insight into students' motivations and attitudes. While the introduction of qualitative methods, such as interviews, can allow students to share detailed insights into the influence of AI tools on their learning experience, a survey with a larger number of participants can help provide a detailed report on exposure and its significance for students.

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