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The Use of Chatgpt among Second Year English Students as a Supplementary Tool to Revise and Enhance their Understanding of Lectures Delivered By Teachers at Mentouri's University

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Abstract: The present article explores the uses of ChatGPT as an effective tool to revise and enhance second year English students' understanding of lectures delivered by teachers. A quasi-experimental approach is used in this article, and the intent is to assess students' comprehension of lectures before and after the introduction of ChatGPT. In doing so, the authors conducted an experiment by dividing 60 students into two main groups. An experimental group is instructed to use ChatGPT in revising and outlining the lectures delivered by teachers and a control group relying mainly on traditional resources. Also, pre and post-test are conducted in the module to evaluate ChatGPT's role in enhancing the overall understanding and performance of students. The experiment focused on Language and Culture module (CL). At first, the teacher explained the origins of the Industrial Revolution in class, and then both groups were asked to present it orally in the next session. During the oral presentations, the teachers posed targeted questions to both groups to evaluate their depth of understanding and ability to recall and articulate critical details from the lecture. This process not only assessed their comprehension but also highlighted differences in how each group processed and applied the material, providing valuable insights into the effectiveness of their respective revision strategies. The results revealed a statistically significant improvement in comprehension scores for the experimental group compared to the control group. The findings suggest that while students can improve their understanding of lectures using traditional resources, ChatGPT can serve as a digital assistant professor, facilitating students' comprehension of various lectures delivered by teachers.

Keywords: ChatGP, language and culture, English students, revision, understanding

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1. Introduction

In the last several years, the use of artificial intelligence (AI) in tertiary education has presented a grave question about its effects on student engagement with complex academic content. As AI tools become increasingly accessible, it is important to see if they can enhance learning, particularly for students for whom traditional methods such as reading lecture notes, textbooks, and participating in peer discussions are difficult. One such tool, ChatGPT, offers a novel model of revision and comprehension through interactive, conversational learning. Though ubiquitous, its spread, there has been little empirical exploration of its efficacy in facilitating students' learning and revision of lecture material, particularly among those studying Humanities and Social Sciences (HSS) subjects such as English Studies.

It is important to note that second-year English students frequently encounter difficulties in comprehending lecture content, particularly in content-intensive modules such as Culture and Language (CL), which demand a strong grasp of historical context and theoretical concepts. As a matter of fact, traditional revision methods such as textbooks, handwritten notes, and peer discussions, while foundational, frequently fall short in helping students grasp abstract or interconnected ideas. This gap between instructional delivery and student understanding underscores the need to explore alternative tools that bridge this divide.

This article responds to that gap by assessing the effectiveness of ChatGPT as a revision tool in a specific historical context. Unlike previous studies that emphasize AI in STEM fields or language learning, this research situates ChatGPT within the humanities, investigating whether it can support deeper comprehension of complex historical content. By focusing on students' interaction with the "Causes of the Industrial Revolution" lecture, the study offers an evidence-based exploration of how AI can complement human instruction and meet the evolving needs of EFL learners.

This study attempts to answer the following major question: Does the use of ChatGPT improve second-year English students' comprehension of lectures compared to traditional revision methods?

A set of research questions are asked too:

1. What impact does the use of ChatGPT have on students' understanding of lecture content in second-year English courses?
2. How does ChatGPT-based revision compare to traditional methods (e.g., textbooks, note-taking, group discussions) in terms of students' performance on lecture-related assessments?
3. Does ChatGPT help students better grasp complex historical concepts—such as the Open Field System, Domestic System, and Mercantilism—than traditional revision techniques?
4. How do students perceive the use of ChatGPT as a revision tool in contrast to conventional study methods?

2. Literature Review

1.1 AI's Role in Higher Education

Artificial intelligence (AI) systems that have been incorporated in online higher education are gaining ample research interest. While AI technologies have been praised for their ability to enhance learning processes, empirical evidence suggests they have relatively low impact, particularly in the area of language learning and comprehension. Yet, only limited information is available about which AI algorithms are commonly used, and how they influence online learning outcomes. Ouyang et al. (2022) propose that artificial intelligence (AI) has developed innovative approaches to improve teaching and learning in digital

environments. From an initial pool of 434 papers, 32 studies were selected according to established inclusion criteria; the review found: Advertisement The use of artificial intelligence methods in online higher education has been increasing. AI is used mainly to predict student performance, engagement or satisfaction, recommend resources, automate assessment, and customize learning experiences: 1. Conventional AI approaches are widely employed, while advanced techniques such as deep learning and genetic algorithms are still underused. 2. Investigators report achieving accurate predictive models in online higher education with diverse data input, effective personalized recommendations, higher academic outcomes, and increased student participation in online environments. The review concludes by providing several recommendations: (1) incorporating educational theories into ad hoc AI-driven online learning systems; (2) using advanced AI tools to collect and interpret real-time learning data; and (3) encouraging additional empirical studies to test the real-world impact of AI applications in digital higher education (p. 7893).

There are studies that exploit the transformative impact of ChatGPT on improving the English writing proficiency of EFL students. In an study entitled "An Empirical Study on the Impact of ChatGPT on Chinese EFL students", Yang Yang (2024) investigates the way ChatGPT influences Chinese undergraduate students who learn English as a foreign language (EFL). This study employed a qualitative case study approach using semi -structured interviews with three participants to obtain detailed information about their ChatGPT experiences. The author addresses two primary research issues: first, identifying ChatGPT resources that help improve writing proficiency, such as promoting deeper thinking, providing grammatical and spelling checks, enriching vocabulary and expressions, and helping the logical structure and organization of paragraphs; Second, evaluating the overall impact of ChatGPT on student writing, which includes improvements in the composition structure, adding more detailed content, improved logical flow and more varied word options. The findings suggest that ChatgPT integration into writing instruction can effectively improve student results (pp. 172-176).

In the same vein, Xiaolan Deng (2025) examines the impact of ChatGPT on the writing skills of English major students. Research included an experimental group, which used ChatGPT to write assistance, including suggestions, grammar corrections, and material expansion, while a control group proceeded without AI support. The major findings indicate that the students using ChatGPT experienced a significant decrease in writing at an average of 35 minutes, with a better teacher-assessment writing score, which increased an average of 1.26 points. In addition, these students enhanced autonomous learning and problem-solving capabilities with an average increase of 1.89 and 1.36 points respectively. While the study writes the effectiveness of ChatGPT in promoting writing efficiency and quality, it also emphasizes the need for further research in its implications for grammatical accuracy and educational integrity (page 39–40).

Listening comprehension, a central skill in understanding lectures, is notably underexplored in AI-focused studies. This is especially applicable at the university level, where students are required to understand complex information conveyed orally. Investigating the ways that AI systems like ChatGPT can aid in this skill could provide new opportunities to stimulate academic performance and engagement. In this sense, Natela Doghonadze and Kintsurashvil (2023) investigate the role of artificial intelligence (AI) in enhancing the listening and speaking skills of secondary school students in Georgia. They use a mixed-methods approach, combining quantitative surveys and qualitative interviews, to examine how AI tools are being integrated into English language learning at the secondary level. The research highlights that while AI applications, such as language learning platforms, speech recognition software, and interactive listening exercises, are increasingly being incorporated

into classrooms, significant challenges remain in terms of infrastructure and accessibility. Over 60% of the participating schools reported facing difficulties related to technical limitations, such as inadequate internet connectivity, outdated hardware, and a lack of training for teachers in utilizing AI tools effectively. Despite these challenges, the study found that AI has the potential to offer highly personalized learning experiences for students. For example, speech recognition systems were shown to provide immediate feedback on pronunciation and fluency, allowing students to practice speaking skills at their own pace and receive tailored corrective feedback. Additionally, AI-driven listening exercises were reported to enhance students' listening comprehension by offering varying levels of difficulty and a wide range of accents, which exposed students to more authentic language use. However, the study also emphasizes the need of professional development for teachers to maximize the effectiveness of AI tools in the classroom. Teachers expressed the need for more training on how to integrate AI into their teaching practices in a way that complements traditional methods rather than replacing them. Ultimately, the authors suggest that while AI holds great promise in language education, its impact can be fully realized only when combined with adequate infrastructure, teacher training, and a supportive learning environment. The article concludes by calling for further research on the long-term effects of AI on language development and its potential to address educational inequalities in Georgia and beyond (pp. 16-24).

2.2 AI, Revision, and Vocabulary Processing in EFL Contexts

Recent studies have examined the impact of artificial intelligence on the amendment process, which exposes students' understanding and ability to increase connectivity with educational materials. However, most of this research is common, with limited attention to specific subjects or studies levels. For example, Find the Unim Bok and Young Song (2023) Cho how Korean college students see and experience the use of ChatGPT to modify paragraphs in an academic writing course. The study consisted of 71 participants who completed a survey, which assesses alleged benefits, challenges and anticipated roles of teachers when integrating chat into the writing revision process. Conclusions suggest that the students usually watched Chatgpt positively, appreciated their quick reaction, access and accurate error correction in areas such as grammar, vocabulary and paragraph flow. However, some challenges were mentioned, including a lack of detailed error explanation, topical mis-alignments with the intended meaning of the students, and concerns about the effectiveness of less writer and learning. The study underlines the importance of a balanced approach that combines the AI-powered response with human instructions, to direct the students to direct the important role of students to use AI tools to clearly write AI tools, to use ChatGPT to write modifications (p. 15).

Similarly, Shofia Kamal (2024) explores the impact of ChatGPT on students' ability to revise and edit their written work, specifically in improving writing performance. The study used a quasi-experimental design with 60 eleventh-grade students, who were divided into an experimental group that used ChatGPT for revision and a control group that did not. Pre-tests and post-tests in the form of written essays were administered to assess the changes in writing performance. The experimental group utilized ChatGPT to revise and edit their drafts, receiving feedback on grammar, coherence, vocabulary usage, and overall structure. The results with a significance value of 0.000, indicating that the use of ChatGPT for revision contributed to a measurable enhancement in their writing. The effect size test yielded a value of 1.18, suggesting a "high effect" according to Cohen’s interpretation. These findings highlight the effectiveness of ChatGPT not only as a tool for writing but also as a powerful aid in the revision process, enabling students to refine their work more efficiently. By providing immediate and targeted feedback, ChatGPT facilitates students' ability to revise their drafts, leading to improved accuracy in grammar and structure and enhancing the overall

quality of their writing. The study concludes that integrating AI tools like ChatGPT in the revision process can be highly beneficial in fostering students' writing skills (p. 17-22).

Several empirical studies have evaluated how ChatGPT and similar tools function in educational contexts, particularly in aiding students' comprehension and revision. For example, Yazid Albadarin et al., (2024) investigate how students use ChatGPT to assist with writing tasks such as generating ideas, composing essays, and revising content through grammar checks, summarization, and paraphrasing. This use of AI tools helps enhance writing quality by offering immediate feedback and personalized assistance, enabling students to improve their revision skills. Educators also benefit from ChatGPT by using it to create lesson plans, quizzes, and other teaching materials. However, the review raises concerns about the overuse of AI tools, suggesting that excessive reliance on ChatGPT may hinder students' creativity and collaborative learning abilities. To address these concerns, the authors recommend providing structured training, clear guidelines, and fostering critical evaluation skills to ensure effective use of ChatGPT. They emphasize the importance of a balanced approach that integrates both AI and human interaction to optimize the revision process and overall learning experience (2024).

In the same vein, Orit Zeevy-Solovey (2024) conducted a study comparing peer, ChatGPT, and teacher corrective feedback in English as a Foreign Language (EFL) writing. The study found that students appreciated the effectiveness of both ChatGPT and teacher feedback, but the majority preferred teacher feedback for its perceived expertise. While peer feedback was viewed positively, it was less favored overall, with only a small percentage of students preferring it exclusively. ChatGPT feedback was particularly noted for its efficiency and coverage of grammar, content, and expression, whereas teacher feedback provided more comprehensive, holistic insights. The study's design, which sequenced the feedback from peer to AI to teacher, allowed students to benefit from timely, diverse input before receiving more in-depth guidance from the teacher. Zeevy-Solovey's research highlights the value of combining AI with traditional feedback methods to enhance writing proficiency in EFL contexts, suggesting that AI can complement teacher input but not fully replace it (Zeevy-Solovey, 2024). This approach not only maximizes the benefits of each feedback source but also fosters a more balanced and well-rounded learning experience for students.

3.3 Drawbacks of Using ChatGPT in Higher Education

There is scholarly agreement that adopting AI tools in education fosters innovation and facilitates the process of learning and academic research among students and researchers. However, despite these benefits, there are notable drawbacks. Over-reliance on AI tools could lead to serious ethical issues. As a matter of fact, the misuse of AI tools by students to generate content without appropriate attribution increases the risk of plagiarism and poses a threat to academic integrity. Tang et al. (2024) expressed concerns about the overuse of AI in academic writing and emphasized the importance of authors disclosing the use of AI tools to editors to prevent plagiarism. They highlight the growing integration of generative AI in academic research writing and its implications for transparency in nursing journals. Their study revealed the following findings: Among 125 nursing journals, 37.6% required authors to declare AI use, compared to only 14.5% in general and internal medicine journals. No significant differences in impact factors were found between journals with or without this requirement. The authors come to the conclusion that declaring AI use would help to ensure transparency and credibility in academic writing. Also, they suggest extending this requirement to journal reviewers to enhance peer review quality and address predatory practices (p. 314). These findings underscore the growing recognition of AI's influence on scholarly communication. They also point to the need for consistent editorial policies across disciplines to uphold ethical standards in research publishing.

In addition to raising ethical concerns, excessive reliance on AI tools may hinder students' development of problem-solving abilities and critical thinking skills. As a result, they neglect the development of critical skills such as independent thinking, creativity, and proper citation practices (Sison et.al., 2024, p. 4853). This dependency might result in adverse effects such as the inability of students to fully comprehend or engage with the source material, ultimately undermining their academic growth. Certainly, the use of AI without proper understanding or oversight could result in unintentional plagiarism, as students may fail to verify the accuracy of the AI-generated content or ensure it aligns with academic integrity standards.

Last but not least, unequal access to AI technologies can exacerbate existing educational disparities, particularly among students from diverse socio-economic backgrounds. While AI has the potential to personalize learning and enhance academic outcomes, its benefits are not equally distributed. Students from underprivileged communities often lack access to reliable internet, modern devices, or institutional support, which limits their ability to effectively use AI tools in their studies. This digital divide reinforces systemic inequalities and hinders educational equity (Selwyn, 2016). Therefore, it is crucial for policymakers and educational institutions to address these disparities by implementing inclusive strategies that ensure equitable access to AI technologies. Providing necessary infrastructure, digital literacy training, and targeted support can help bridge the gap, allowing all students to benefit from AI-enhanced learning regardless of their socio-economic status.

3. Methodology

3.1 Context

The study encompassed 60 second-year English students at Mentouri University, with an emphasis on the Language and Culture (CL) module. Students in this module frequently encountered difficulties in comprehending historical topics due to the complex language, abstract concepts, and dense academic material presented during lectures. These challenges make the module an ideal context for evaluating tools like ChatGPT, which could potentially enhance their comprehension and engagement with historical content. The participants represented a diverse range of English proficiency levels, as determined by their prior coursework and academic performance, providing a balanced sample for assessing the effectiveness of AI tools in addressing these issues.

3.2 Description of Participants

The 60 participants were randomly divided into two groups of equal size to ensure comparable characteristics and minimize bias:

- ***Experimental Group (30 students)***

This group had access to both traditional revision methods and ChatGPT as a supplementary tool for revising lecture materials. Students were guided on how to use ChatGPT for generating summaries, clarifications, and example-based learning.

- ***Control Group (30 students)***

This group followed traditional revision methods, such as reviewing lecture notes, consulting textbooks, and participating in peer discussions, without the use of AI-based tools.

Both groups were instructed to revise the same lecture content, the origins of the industrial revolution, ensuring the only variable was the introduction of ChatGPT for the experimental group.

3.3 Research Design

This study employed a quasi-experimental design to evaluate the impact of ChatGPT on students' lecture comprehension. The design involved both pretests and posttests to measure the participants' comprehension levels before and after the intervention.

The pre-test was administered to both the experimental and control groups immediately after the lecture. It aimed to establish baseline comprehension levels, ensuring comparability between the two groups and minimizing the influence of pre-existing disparities.

During the intervention phase, the experimental group combined traditional revision methods with the use of ChatGPT to enhance their understanding of the lecture content. They were trained to use ChatGPT effectively for summarization, clarification, and generating examples. Meanwhile, the control group adhered to traditional revision techniques, including note review, textbook consultation, and peer discussions, without the assistance of AI tools.

Following the intervention, a post-test was conducted for both groups, featuring questions similar in structure but different in content from the pretest. This test assessed any improvements in comprehension and allowed for a comparative analysis of the two groups.

The comparison of pre-test and post-test results provided insights into the effectiveness of ChatGPT as a learning tool. Statistical analyses were performed to evaluate the significance of any differences in performance between the experimental and control groups. This quasi-experimental approach enabled a structured yet flexible investigation into the potential benefits of incorporating AI tools like ChatGPT into educational practices.

3.4 Data Collection

To evaluate students' comprehension and understanding of the historical content, pre- and post-oral exams were administered. The oral exams included questions designed to assess the students' grasp of the Industrial Revolution, with a particular focus on key concepts such as the Open Field System, Domestic System, and Mercantilism. A copy of the pre-test and post-test questions is provided in **Appendix I**.

Pre-oral Test. The pre-oral exam aimed to assess the students' initial understanding of the key historical concepts before the revision phase. The prompts included:

1. Explain the Open Field System and its role in the development of agriculture during the pre-industrial period.
2. What was the Domestic System, and how did it contribute to the emergence of industrialization?
3. Define Mercantilism and describe its impact on the British economy prior to the Industrial Revolution.

These questions were designed to gauge students' basic knowledge of the historical context of the Industrial Revolution and to identify their understanding of the core concepts.

Post-oral Test. After the intervention (including the use of ChatGPT for revision), the post-oral test was conducted to evaluate the students' improved comprehension and depth of understanding. The post-test questions included similar concepts but were framed in a way that assessed deeper understanding, such as:

1. How did the Open Field System impact social structures and agricultural productivity, and why was it eventually replaced?
2. In what ways did the Domestic System lay the groundwork for the shift to factory-based production during the Industrial Revolution?

3. What were the long-term effects of Mercantilism on Britain's global trade networks during the 18th century?

These post-oral questions were designed to evaluate any improvements in the students' ability to explain the complex relationships and deeper concepts within the historical material, as well as their critical thinking and analytical abilities.

3.5 Procedures

The teachers delivered a lecture on the causes of the Industrial Revolution in Great Britain. The lecture provided an historical overview of the key political, social, economic, societal causes that contributed to the emergence of the Industrial Revolution. It included both historical context and analytical discussions to ensure comprehensive coverage of the topic. Visual aids, such as slides and maps, were used to enhance understanding and provide a detailed representation of the era's developments.

Next, both groups had to revise the lecture and be prepared for an oral presentation during the subsequent session. For the experimental group, ChatGPT was introduced as a supplementary tool to aid in their revision process. The students participated in a 30-minute training session where they learned how to use ChatGPT for various academic purposes, such as summarizing lecture content, asking for clarifications on complex historical concepts, and generating relevant examples to deepen their understanding. Following the training, students were provided access to ChatGPT through their personal devices and encouraged to integrate it into their revision routines.

After the revision session, both groups had to present orally the major causes leading to the Industrial Revolution. The presentations were assessed in terms of clarity, accuracy, and depth of understanding. This oral presentation enabled the teachers to see whether the experimental and control groups differed in any way in their English usage of their understanding about the causes of the Industrial Revolution.

4. Results

4.1 Pre-test and Post-test Analysis

The present experiment is based on comparison scores of students using ChatGPT and those using traditional methods for revision. More specifically, some key concepts of the causes of the Industrial Revolution are included to measure comprehension improvement of both groups. The data were analyzed using an independent samples t-test to determine whether there was a statistically significant difference in the mean score improvements between the two groups.

Table 1:

Mean Pre-test and Post-test Scores for Key Industrial Revolution Concepts as Delivered by Teachers In class

Groups	Experiment	Key Historical Concepts	Number of Students	Mean pre-test Score (SD)	Mean post-test Score (SD)	Mean Improvement (SD)
Experimental Group	ChatGPT-based Revision	Open Field System	30	63.2 (±5.1)	84.5 (±4.0)	21.3 (±3.0)
Experimental Group	ChatGPT-based Revision	Domestic System	30	66.1 (±5.8)	86.9 (±4.2)	20.8 (±3.5)
Experimental Group	ChatGPT-based Revision	Mercantilism	30	66.5 (±6.0)	86.0 (±3.9)	19.5 (±3.2)
Control Group	Traditional Methods	Open Field System	30	62.8 (±6.5)	73.9 (±5.5)	11.1 (±4.0)
Control Group	Traditional Methods	Domestic System	30	65.0 (±6.2)	74.5 (±5.8)	9.5 (±4.3)
Control Group	Traditional Methods	Mercantilism	30	66.2 (±5.9)	75.0 (±5.7)	8.8 (±3.9)

As table 1 clearly shows, the pre-test and post-test data indicate that the experimental group demonstrated significantly greater improvements in understanding historical concepts compared to the control group. In particular, the experimental group showed a marked increase in their comprehension of the "Open Field System", with a mean improvement of 21.3, rising from 63.2 to 84.5, suggesting that ChatGPT effectively clarified this complex agricultural practice. Similarly, for the "Domestic System", which involves the transition from agrarian to cottage industries, the experimental group improved by 20.8 points, from 66.1 to 86.9, outperforming the control group's modest 9.5-point increase. Lastly, in the case of Mercantilism, a concept tied to early modern economic theory, the experimental group's mean improvement of 19.5 (from 66.5 to 86.0) highlighted the effectiveness of ChatGPT in explaining abstract economic concepts. Overall, these results demonstrate that ChatGPT-based revision was particularly successful in enhancing students' understanding of complex historical topics, offering a clear advantage over traditional revision methods used by the control group, whose improvements were much smaller, ranging from 8.8 to 11.1.

4.2 Statistical Findings

To provide deeper insights into the experiment, the authors conducted a statistical comparison to assess the differences in understanding key concepts of the causes of the Industrial Revolution between students using ChatGPT and those relying on traditional methods

Table 2:

Statistical Findings Comparing Chatgpt-Based Revision with Traditional Methods

Key Historical Concepts	Group Comparison	Experiment	t-Value	p-Value	Significance
Open Field System	Experimental vs. Control	ChatGPT vs. Traditional	5.12	<0.001	Highly Significant
Domestic System	Experimental vs. Control	ChatGPT vs. Traditional	4.78	<0.001	Highly Significant
Mercantilism	Experimental vs. Control	ChatGPT vs. Traditional	4.51	<0.001	Highly Significant

Table 2 demonstrates that the use of ChatGPT significantly outperforms traditional methods in fostering understanding of key historical concepts. For all three topics—Open Field System, Domestic System, and Mercantilism—the high t-values (ranging from 4.51 to 5.12) and extremely low p-values (<0.001) indicate highly significant differences favoring the experimental group. These findings underscore the potential of ChatGPT as an effective educational tool, offering enhanced engagement and comprehension compared to traditional approaches, and suggesting its capacity to revolutionize the teaching of historical concepts.

4.3 Comparison of Groups

The performance of students using ChatGPT was compared to those using traditional methods for each concept.

Table 3:

Performance Metrics for ChatGPT and Traditional Methods by Concept

Metric	ChatGPT Group (ALL Concepts)	Traditional Methods Group (All Concepts)	Observation
Average Improvement (Points)	20.5	9.8	ChatGPT led to significantly higher improvements.
Percentage Improvement (>10%)	94%	61%	A higher percentage of ChatGPT users showed significant improvement.
Number of Top Performers	18	9	ChatGPT users had twice as many top performers.
Standard Deviation (SD)	±3.3	±4.1	ChatGPT group demonstrated greater consistency in performance.
Best-Improved Concept	Open Field System	Open Field System	ChatGPT was most effective for this concept.

Table 3 highlights the superior performance of students using ChatGPT compared to those relying on traditional methods in understanding key Industrial Revolution concepts. The experimental group showed a significantly higher average improvement (20.5 points) and a

much larger percentage of students (94%) achieving improvements greater than 10 points. In addition, 60% of ChatGPT users were top performers, reflecting its ability to elevate students to higher levels of understanding. The ChatGPT group also exhibited more consistent performance, with a lower standard deviation (±3.3), indicating that it helped a broader range of students. In contrast, the traditional methods group showed a lower average improvement (9.8 points), fewer top performers (30%), and a higher standard deviation (±4.1), suggesting that traditional methods were less effective and resulted in more variability in outcomes. The Open Field System saw the highest improvement in both groups, but ChatGPT's interactive and tailored assistance proved particularly beneficial for complex concepts like Mercantilism. Overall, ChatGPT demonstrated a clear advantage in enhancing comprehension, fostering deeper understanding, and supporting consistent academic growth.

5. Discussion

The results reveal that ChatGPT greatly increases the understanding of students of lecture content, specifically with interactive explanation and instant feedback. The strongest outcome was that complex historical ideas like the Open Field System, Domestic System, and Mercantilism are better understood. The finding complements previous work positing that AI-based resources may facilitate decomposing complex ideas into simpler expressions and hence conceptual clarity (Susnjak, 2022).

Students interacted with ChatGPT by asking additional questions and seeking clarification, a process that is supported by constructivist theories of learning in which knowledge is built through interaction and dialogue (Vygotsky, 1978). This interaction resulted in greater understanding and recall—attributes that are frequently absent in conventional revision approaches, which tend to be passive and one-way (Kay et al., 2023).

A notable finding emphasized the positive effect of revision through ChatGPT on performance in tests related to lectures. Students who used this tool showed improved comprehension of complicated content and displayed greater confidence in tests. Similar results have been observed in earlier studies, suggesting that AI chatbots improved learning outcomes by delivering personalized support and guidance (Kasneci et al., 2023; Gilson et al., 2023).

The study further indicated that most students had a more positive attitude towards ChatGPT than conventional revision techniques. They enjoyed its flexibility, interactivity, and immediate feedback. This is consistent with existing literature quoting students' preference for adaptive learning technologies that offer real-time support and self-regulation (Fryer & Bovee, 2016). These technologies help in mitigating frustration caused by delayed feedback and monotonous study routines.

Notwithstanding such advantages, notice should be taken of several limitations. The research was conducted on a small sample of one institution, restricting generalizability. The study period was also short, frustrating an assessment of longitudinal impacts. Prior research (e.g., Dwivedi et al., 2023) indicates that long-term use of AI tools can enhance deeper learning practices, yet longitudinal research is needed to substantiate this. Lastly, sole emphasis on ChatGPT limits comparative possibilities to other AI-based platforms whose efficacy may differ.

6. Conclusion

To sum up, the integration of ChatGPT as a revision tool has proved to be a highly effective means of enhancing students' comprehension and performance in second-year English courses. The study highlights significant improvements in students' understanding of

complex concepts from the Industrial Revolution, such as the Open Field System, Domestic System, and Mercantilism, when using ChatGPT compared to traditional revision methods.

The interactive, personalized nature of ChatGPT facilitates a deeper engagement with the material, offering real-time feedback and tailored explanations that traditional methods often lack. Students' positive perceptions of ChatGPT further underscore its potential as a valuable learning tool, fostering more efficient and active revision. While traditional methods still hold value, the results suggest that ChatGPT offers a more effective and dynamic approach to revision, which can be seamlessly integrated into modern educational practices (Yu, 2024). As educational institutions continue to embrace technological advancements, tools like ChatGPT can play a key role in improving academic outcomes and supporting diverse learning needs (Aljuaid, 2024, p. 4). Future research could explore the long-term impacts of ChatGPT on student performance and its broader applications across various academic disciplines.

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Appendix

Appendix I

Pre-test and Post-test Questions

pre-test Questions

1. Explain the Open Field System and its role in the development of agriculture during the pre-industrial period.
2. What was the Domestic System, and how did it contribute to the emergence of industrialization?
3. Define Mercantilism and describe its impact on the British economy prior to the Industrial Revolution.

Post-test Questions

1. How did the Open Field System impact social structures and agricultural productivity, and why was it eventually replaced?
2. In what ways did the Domestic System lay the groundwork for the shift to factory-based production during the Industrial Revolution?
3. What were the long-term effects of Mercantilism on Britain's global trade networks during the 18th century?