The Influence of Artificial Intelligence (AI) Support on the Quality of 'What If' Analysis Scenarios among University Students

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Abstract

This study examines the influence of Artificial Intelligence (AI) support on student outcomes in higher education project work, focusing on the quality of analytical "what if" scenarios and students' satisfaction with their presentations. The study addresses two objectives: to determine how AI support affects students' ability to produce high-quality analytical scenarios compared to independent work, and to examine students' satisfaction with their presentation outcomes. A total of 53 university students participated and were divided into an Experimental Group (n = 26), which used AI tools, and a Control Group (n = 27), which completed the task independently. Using a qualitative research design, data were collected through semi-structured interviews with ten selected students, systematic classroom and presentation observations, student-produced scenario documents, and AI interaction records. Data were analysed using thematic and narrative analysis. The most significant result indicates that the majority of students in the AI-supported group demonstrated multi-level causal reasoning, coherent structural organisation, and thematically complex outcomes, whereas most students in the control group produced linear analyses with conventional or humorous narrative resolutions. In addition, all interviewed students in the AI-supported group reported higher confidence during presentations, compared to mixed confidence levels in the control group. These findings suggest that ethical AI use can substantially enhance analytical depth and presentation confidence, providing a strong empirical foundation for future large-scale research on AI integration in higher education.

Keywords: Generative AI, English Language Teaching, Analytical Writing, Student Engagement, Scaffolding

Introduction

In recent years, the development of higher-order thinking skills has become a key goal in English language teaching (ELT), particularly at the tertiary level where students are expected to analyse, evaluate, and generate complex ideas in academic writing. However, for many ESL learners, tasks that require analytical reasoning, such as "what if" scenario analysis, remain challenging due to limited linguistic resources, difficulties in organising ideas, and low confidence in expressing complex causal relationships. As universities increasingly emphasise analytical and critical thinking outcomes, these difficulties pose a growing concern for both students and educators.

At the same time, generative artificial intelligence (AI) tools are now widely accessible and actively used by university students to support academic tasks, including idea generation and writing. In many classrooms, AI use has already become a reality rather than a future possibility. While AI is often viewed with concern due to issues of over-reliance and academic integrity, its rapid adoption has outpaced empirical research examining how such tools influence students' thinking processes. As a result, educators are required to make immediate instructional decisions in the absence of clear evidence.

This lack of timely research is especially problematic in ESL contexts, where students may already struggle to engage in the multi-level causal reasoning required for "what if" analysis tasks. Without empirical evidence on whether AI meaningfully enhances or hinders analytical reasoning, teachers risk either discouraging potentially beneficial tools or permitting unstructured AI use that may undermine learning. This situation highlights an urgent need to examine not merely the presence of AI in learning environments, but its actual effectiveness in supporting analytical thinking.

Therefore, this study investigates the influence of AI support on the quality of "what if" scenario analysis among university ESL students, focusing on aspects such as causal depth, structural coherence, thematic complexity, and student confidence. By comparing AI-supported and independent student work, this study aims to provide practical insights into the effectiveness of guided AI use in enhancing analytical reasoning, positioning AI as a learning support tool rather than a substitute for thinking.

The findings of this study are expected to benefit ESL teachers by informing immediate classroom practice and task design, students by supporting the development of analytical writing skills in AI-mediated learning environments, and institutions by contributing timely, evidence-based perspectives on ethical and pedagogically sound AI integration in higher education.

Research Problem

Despite the widespread adoption of AI tools among university students, there remains a lack of in-depth, systematic understanding of how AI support specifically influences the quality of students' creative analytical outcomes and their level of confidence and satisfaction with the resulting output. The core problem is to determine whether students who use AI genuinely produce superior work and feel more satisfied compared to those who adhere to independent work methods, and what learning experiences drive these differences.

Research Objectives
The primary objectives of this one-week pilot study are:
1. To determine the extent to which AI support influences students' ability to create high-quality 'what if' scenarios.
2. To investigate students' satisfaction with their presentations when using AI to complete their project.

Research Questions
This study aims to answer the following questions:
1. How does AI support influence students' ability to create high-quality 'what if' scenarios?
2. How satisfied are students with their presentations when using AI to complete their project?

Literature Review
The Integration of AI in Higher Education
The rapid advancement of generative AI has positioned it as a ubiquitous tool in the academic environment. This aligns with findings by Sumakul, Hamied, and Sukyadi (2022), who reported that AI technologies in EFL classrooms can support both teaching and learning by providing personalised feedback, facilitating language practice, and reducing teachers' instructional burden. Literature consistently points to AI's potential to revolutionize study habits, research assistance, and task efficiency (Hwang et al., 2023). This view is further supported by Nhan (2025), who found that artificial intelligence plays a significant role in enhancing personalised learning by adapting content to learners' needs, improving engagement, and supporting more efficient learning processes in higher education contexts. Songsiengchai (2024) found that ChatGPT supports English language learning by assisting students in generating ideas and organising their language output during academic tasks. Tools such as Large Language Models (LLMs) can rapidly process vast amounts of data and generate preliminary content, theoretically reducing the time students spend on foundational tasks and allowing them to focus on higher-order thinking (Chan & Wang, 2024). However, this integration is still nascent, leading to a significant gap in empirical research concerning its actual impact on specific learning outcomes, particularly in analytical and creative project work.

AI and Creative Analytical Output (Scenario Quality)
Analytical scenario creation, often termed 'What If' analysis, is a complex task requiring students to demonstrate critical thinking, information synthesis, and future projection skills. Previous studies on educational technology suggest that tools which automate parts of the cognitive load can free up working memory for more complex analysis (Sweller, 1988). Applied to AI, there is an expectation that AI support should correlate with an increase in the quality and complexity of student-produced scenarios like assisting with background research, structuring ideas, or generating initial concepts (OpenAI, 2023). Aini and Basthomi (2025) conceptualised AI as "a tool to enhance learning rather than replace human thinking". Conversely, other research warns of the "automation complacency" effect, where over-reliance on technology may lead to reduced effort, shallow processing, and ultimately, a decrease in the originality and depth of the final output (Parasuraman & Manzey, 2010). Thus, it is crucial to qualitatively explore how the process of using AI influences the quality of the scenarios.

Student Satisfaction, Self-Efficacy, and AI Use
Student satisfaction is a critical metric in educational research, often linked to perceived learning effectiveness and motivation. Consistent with this, Nhan (2025) reported that students who engaged with AI-supported learning environments demonstrated higher levels of motivation and perceived learning effectiveness, particularly when AI tools were used as supportive rather than substitutive learning aids. According to Songsiengchai (2024), students reported increased confidence and reduced difficulty in expressing their ideas when completing English language tasks with ChatGPT support. Satisfaction with the process and the final presentation is frequently tied to a student's self-efficacy, which is their belief in their own ability to succeed in a task (Bandura, 1977). Taskiran and Goksel (2022) found that regular feedback significantly improved students' academic writing achievement, and teacher feedback produced slightly higher score gains compared to automated software feedback, although both methods contributed to writing improvement.

Amani and Bisriyah (2025) demonstrated that AI-assisted writing tools supported students' self-regulated writing practices by facilitating planning, monitoring, and evaluation, particularly in grammar correction and feedback use. However, Ozfidan et al. (2024) also noted concerns related to over-reliance on AI tools, reliability of generated content, and ethical issues, indicating the need for guided and responsible use in academic contexts. In the context of AI, satisfaction may be influenced by several factors:

1. Efficiency: Students may feel higher satisfaction if AI significantly reduces workload or time commitment. Despite these benefits, Amani and Bisriyah (2025) emphasized that students still preferred human feedback for deeper understanding, highlighting the importance of balancing AI support with teacher guidance.
2. Confidence: Using AI to check facts or refine arguments might boost their confidence in the final presentation material.
3. Ethical Concerns: Conversely, anxiety over ethical usage or academic integrity might lower overall satisfaction and increase stress (Trevino & Nelson, 2017). Aini and Basthomi (2025) emphasised that the integration of AI in writing instruction requires clear ethical boundaries to avoid undermining learner autonomy.

Limited qualitative research has thoroughly captured the student's voice on their emotional and cognitive experience when preparing and presenting work heavily influenced by AI. Understanding the students' lived experiences is essential for interpreting the relationship between AI usage and the self-reported satisfaction with their complex project deliverables.

Role of Teachers in AI-Supported Language Classrooms
Moon, Chung and Randolph (2025) highlighted that ChatGPT supports teachers by generating learning materials, enabling personalised tasks, and freeing time for instruction, yet teachers remain irreplaceable because human-to-human emotional support and contextual decision-making cannot be automated. Their phenomenological case study showed that language teachers used ChatGPT heavily for brainstorming, paraphrasing, vocabulary checking and email writing, but still perceived ChatGPT as an assistant tool rather than a replacement.

Gap in the Literature
While existing literature highlights the capabilities and risks of AI in education, there is a distinct gap in empirical, qualitative studies that directly compare the learning experiences and outcomes (scenario quality and satisfaction) between students who actively use AI support and those who complete identical complex analytical tasks independently, particularly within the compressed timeframe of a pilot project. This study aims to bridge this gap by offering rich, descriptive data derived from student interviews and observations to provide contextual depth to the influence of AI on project output and student psychological disposition.

Methodology
Research Design
This pilot study will employ a Qualitative Research Design with a Quasi-Experimental approach. Although the design involves an intervention (AI use) and a comparison between two groups, the primary focus of this pilot study is to gain in-depth understanding and contextual data regarding student processes and perceptions, rather than statistical hypothesis testing. The qualitative approach (via interviews and observation) is justified to:
1. Explore the 'How' and 'Why': To understand how AI influences the quality of 'what if' scenarios and why students feel satisfied (or dissatisfied) with their output.
2. Rich Context: To capture the subjective learning experience and the ethical dilemmas encountered by students.
3. Instrument Refinement: The rich data will be used to review and refine the instruments (interview questions and observation rubrics) for a larger-scale study.

Participants, Instruments, and Procedures
The target population for this study consists of university students enrolled in a course that requires analytical or critical thinking skills. A total of 53 students participated in the study and were divided into two groups. The control group comprised 27 students who completed the tasks independently without the use of AI support, while the experimental group consisted of 26 students who were allowed to use AI as part of their work process. Participants were selected through convenience sampling, as the study involved a readily available and willing class. In addition, purposive sampling was employed to select 10 students from both groups for in-depth interviews, ensuring that participants could provide rich and relevant insights into their learning experiences.

Instruments
Data for this study were collected using three qualitative instruments. First, a semi-structured interview protocol was employed, consisting of open-ended questions designed to explore students' experiences, their perceptions of the quality of their "what if" scenarios, levels of self-confidence, and overall satisfaction with their presentations. Second, a qualitative observation protocol was used, which included a checklist and systematic field notes to document student behaviour during group or individual work. This observation focused on aspects such as time spent searching for resources, interaction with AI tools, and emotional expressions during the preparation process, as well as behaviours displayed during the presentation. Third, a quality assessment rubric served as an output guide for the researcher to descriptively assess the quality of the final scenarios in terms of depth, originality, and

justification. This rubric was not used for scoring purposes but to support and enrich the interpretation of the interview findings.

Procedures
The study began with a consent and orientation phase in which informed consent was obtained from all 53 students. During this stage, students were briefed on the purpose of the study and informed about ethical guidelines related to the use of AI. Next, students were assigned to either the control group or the experimental group through simple randomization. Both groups were then given the same assignment, which required them to create a set of "what if" scenarios and prepare a presentation based on their work. While the control group completed the task independently, the experimental group was provided access to AI tools and encouraged to use them during the task. Throughout the preparation period, the researcher conducted systematic observations to document students' behaviours and engagement. Upon completion of the task, students delivered their final presentations. Finally, after the assignment was completed, five students from each group, making a total of ten participants, were selected for individual interviews to gain deeper insights into their experiences and levels of satisfaction.

Data Collection and Analysis Plan
Data collection for this study involved both primary and supporting sources. The primary data consisted of audio recordings and verbatim transcripts of the interviews, as well as field notes and records obtained from systematic classroom observations. In addition, supporting data were drawn from descriptive ratings based on the quality assessment rubric, which were used to enrich and triangulate the qualitative analysis rather than for evaluative or scoring purposes.

Data Analysis
Data analysis began with the full verbatim transcription of all interview recordings. This was followed by thematic analysis, which was conducted to identify, analyse, and report recurring patterns or themes emerging from the interview transcripts, including themes related to student satisfaction, AI dependency, and perceived quality of the "what if" scenarios. In addition, narrative analysis was employed to present students' experiences in a more holistic manner, highlighting the personal "stories" of how students used or deliberately avoided AI and the impact this had on their output and self-confidence. Finally, data triangulation was applied by comparing and enriching interview findings with evidence from classroom observations, field notes, and descriptive assessments from the quality rubric to enhance the credibility and depth of the analysis.

Ethical Considerations
Ethical considerations were carefully addressed throughout the study. All participants were fully informed about the purpose of the research, the procedures involved, and their right to withdraw from the study at any time without any penalty. Confidentiality and anonymity were strictly maintained, with all transcripts and collected data anonymised through the use of codes or pseudonyms. All audio recordings and research data were securely stored and used solely for the purposes of this pilot study. In addition, students in the experimental group were provided with clear ethical guidelines regarding the responsible use of AI, with explicit

emphasis on AI as a supportive tool rather than a substitute for authentic student work, in order to minimise risks related to cheating or plagiarism.

Findings

Overview of the Data

This study used numerous qualitative data sources to investigate the impact of AI support on students' capacity to create 'what if' scenarios and satisfaction with project presentations. The main dataset consisted of submitted by students papers, including written 'what if' scenario analysis created as part of a movie-related project. These materials were the final academic product of both the Experimental Group (AI-supported) and the Control Group (independent work) and served as the basis for investigating differences in scenario quality, depth of analysis, and reasoning.

For students in the Experimental Group, AI interaction records were collected in the form of AI chat histories used during task preparation. These records provided insight into how students engaged with AI tools, the nature of prompts used, and the extent to which AI contributed to idea generation, structuring, and language refinement. The AI chat histories were analysed as process data to complement the analysis of students' final written outputs. In addition, systematic field notes were gathered through classroom and presentation observations conducted throughout the project. These observations documented students' working behaviours, engagement patterns, reliance on AI or other resources, and visible confidence during presentations. Field notes were used to contextualise students' written work and AI interaction data, supporting triangulation across data sources.

To further enrich the dataset, semi-structured interviews were conducted with ten selected participants, comprising five students from each group. Interview data captured students' reflections on their learning processes, perceived quality of their scenarios, and levels of satisfaction with their presentations.

All data sources were analysed using a qualitative approach combining thematic analysis and narrative analysis. Student documents and AI chat histories were first examined to identify patterns in analytical depth, originality, and structural coherence. Interview transcripts and field notes were then analysed to explore students' experiences and perceptions, allowing findings to be triangulated across artefacts, process data, and participant accounts. The findings presented in this chapter are organised in relation to the study's research questions and reflect converging and contrasting patterns observed across the different data sources.

Findings from Experimental Group 'What If' Scenario Documents

This section reports findings derived from the analysis of the Experimental Group's final 'what if' scenario documents. The documents were examined to identify patterns in structural organisation, analytical depth, causal reasoning, and narrative expansion in response to the altered pivot points within the selected movies. Across the four analysed projects, several recurring themes emerged that illustrate how students constructed alternative storylines and explored their consequences.

Clear Identification of Pivot Points and Narrative Catalysts
All analysed documents demonstrated a clear and explicit identification of a single pivotal change to the original movie narrative. Students consistently articulated this change early in their work, often labelling it directly as a "pivot point" or "catalyst," before elaborating on its consequences. For example, in the Frozen scenario, the alteration of Elsa's ice powers to fire powers was positioned as the core catalyst that reshaped her emotional development, family relationships, and the fate of Arendelle. Similarly, the Barbie scenario established Ken's absence from the journey to the real world as the decisive turning point that prevented the emergence of Kendom and its ideological consequences. This consistent framing suggests that students were able to isolate a meaningful narrative variable and recognise its significance in driving broader story outcomes.

Multi-Level Butterfly Effects and Causal Chains
A prominent pattern across the documents was the development of multi-level butterfly effects, where a single narrative change produced cascading consequences across characters, social structures, and thematic meanings. Rather than limiting their analysis to immediate plot outcomes, students frequently extended their reasoning to secondary and tertiary effects.

In the Ratatouille scenario, the absence of Remy's entry into the human world was traced through its impact on individual characters (Remy and Linguini), institutional outcomes (the decline of Gusteau's restaurant), and broader cultural implications for Parisian cuisine and creativity. Likewise, the Inside Out scenario extended the loss of Joy beyond emotional imbalance, depicting long-term psychological consequences reflected in Riley's social behaviour, belief system, and eventual high-functioning depression. These extended causal chains indicate a sustained engagement with analytical reasoning rather than isolated speculation.

Integration of Psychological and Social Reasoning
Another recurring theme was the integration of emotional, psychological, and social reasoning within the alternative narratives. Students frequently connected internal character states to external outcomes, demonstrating an awareness of how emotional changes could reshape behaviour and social environments.

For instance, in the Frozen and Inside Out scenarios, emotional instability was positioned as a driving force behind destructive or maladaptive outcomes, such as Elsa's escalating isolation and Riley's anxiety-dominated worldview . In contrast, the Barbie and Ratatouille scenarios emphasised systemic stagnation, portraying societies that remained outwardly stable but internally hollow due to the absence of challenge, growth, or self-discovery.
This pattern suggests that students moved beyond surface-level plot changes and engaged with abstract themes such as identity, agency, emotional regulation, and societal norms.

Narrative Coherence and Structured Progression
Across the experimental group documents, scenarios were generally organised in a coherent and progressive structure. Most projects followed a similar sequence: introduction of the pivot point, explanation of the catalyst, elaboration of butterfly effects, and a concluding

resolution or thematic ending. This structure was evident in all four analysed works, despite differences in genre and tone.

The use of headings, numbered consequences, and chronological sequencing supported clarity and readability, allowing the logical flow of events to be easily traced from the initial change to the final outcome. While stylistic variation was present, the overall narrative coherence remained consistent across projects.

Darker Endings and Thematic Risk-Taking
A notable characteristic of the experimental group's work was a willingness to diverge from conventional or optimistic endings. Several scenarios concluded with unresolved loss, guilt, or emotional imbalance rather than restoration of harmony. Elsa's death in the Frozen scenario and Riley's unresolved depression in the Inside Out narrative illustrate a tendency toward darker, more psychologically complex resolutions. This thematic risk-taking suggests that students felt able to explore uncomfortable or non-traditional outcomes when reimagining familiar stories, contributing to greater narrative depth and analytical complexity.

Summary of Scenario Construction Patterns
Overall, the Experimental Group's 'what if' scenario documents demonstrated consistent identification of meaningful pivot points, extended causal reasoning through butterfly effects, and integration of psychological and social dimensions. The scenarios were generally well-structured, analytically layered, and thematically ambitious, with students frequently exploring long-term and non-ideal consequences of narrative change. These patterns provide a descriptive account of scenario quality within the AI-supported group and form the basis for subsequent analysis of students' processes and experiences in the following section.

Findings from Control Group 'What If' Scenario Documents
This section reports findings from the analysis of the Control Group's handwritten documents, which included scenarios for movies such as *Toy Story*, *Cars*, *Spider-Man: No Way Home*, and a satirical take on *John Wick*. In contrast to the Experimental Group, these documents revealed different patterns in narrative development, causal complexity, and structural consistency.

Linear Causal Reasoning and Direct Outcomes
A primary pattern observed in the Control Group was a tendency toward linear causal reasoning. While the Experimental Group frequently explored multi-level "butterfly effects", the Control Group typically focused on immediate, direct consequences of the narrative change. For example, in the *Cars* scenario, the pivot point (Lightning McQueen not falling from the transport truck) led directly to him winning the race without learning humility. The chain of events focused on the immediate plot resolution rather than systemic or long-term social changes.

Structural Variability and Narrative Flow
The documents demonstrated considerable variability in structural organisation. While some students followed the suggested headings, such as Pivot Point, Catalyst, and Butterfly Effect, others relied on a continuous narrative format that included numerous manual corrections

and strikethroughs. For example, the Toy Story project adopted a purely narrative approach, placing emphasis on the emotional escalation of the protagonist rather than on clearly segmented analytical stages. In contrast, the Spider-Man and Cars projects made partial use of the provided framework but frequently merged the "Catalyst" and "Butterfly Effect" into a single sequence of events. This pattern suggests that in the absence of AI-supported structural scaffolding, students tended to depend more heavily on their existing writing habits and spontaneous creative impulses rather than on a systematically organised analytical structure.

Conventional vs. Humorous Thematic Resolutions
The thematic endings produced by the Control Group differed noticeably from the darker and more thematically ambitious resolutions observed in the Experimental Group. In general, the Control Group's narratives tended to fall into two broad patterns. Some scenarios concluded with conventional happy endings, as seen in the Spider-Man scenario, which resolved the narrative through a traditional restoration of harmony involving personal success, stable relationships, and academic achievement. Other scenarios adopted a satirical or ironic tone, such as the John Wick narrative, which reimagined key plot elements in a humorous manner by replacing violence with absurd alternatives, or the Toy Story scenario, which ended in a sudden tragic accident. These narrative choices suggest that when working independently, students often rely on familiar storytelling tropes or humor to resolve narrative tension, rather than engaging with more psychologically complex or challenging outcomes that were more commonly explored by students supported by AI.

Language Use and Vocabulary Breadth
The language used in the Control Group documents was generally functional but lacked the advanced academic vocabulary (e.g., "maladaptive," "systemic stagnation," "thematic resolution") identified in the AI-supported work. Sentences were often shorter and more repetitive. For instance, the *Toy Story* document frequently repeated the protagonist's name and simple emotional states ("Andy became angry," "Andy became very scared"). This supports the observation that AI support may act as a catalyst for integrating more sophisticated English terminology during the drafting process.

Comparative Summary of Results
The following table summarizes the qualitative differences observed between the two groups:

Table 1
The qualitative differences observed between the two groups

| Feature	Experimental Group (AI-Supported)	Control Group (Independent)
Causal Depth	Multi-level, systemic butterfly effects.	Linear, direct character-driven outcomes.
Structural Coherence	High; consistent use of headings and logical flow.	Variable; mix of narrative and lists; frequent corrections.
Thematic Tone	Deep, often dark, and psychologically complex.	Conventional (Happy) or Humorous/Satirical.
Vocabulary	Advanced, academic, and descriptive English.	Functional, everyday English with some repetition.

Thematic Map of Qualitative Findings
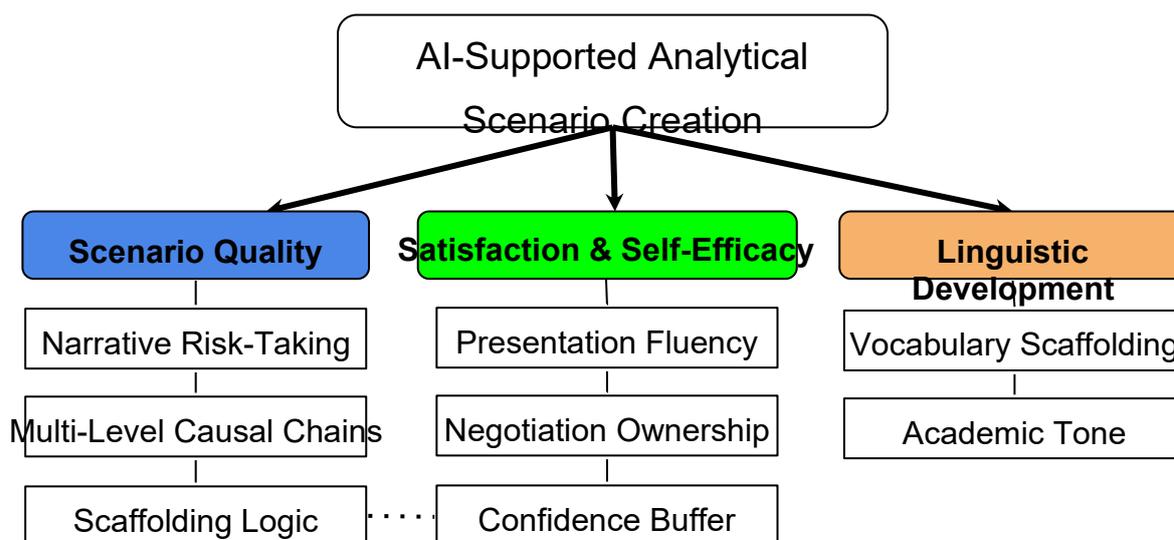
Figure 1: Thematic Map of the Relationship Between AI Scaffolding, Scenario Complexity, and Student Satisfaction.

Narrative Description of the Thematic Map
The thematic map illustrates the multifaceted influence of Artificial Intelligence (AI) support on the analytical and psychological dimensions of the student project. At the center of the map is the core phenomenon: AI-Supported Analytical Scenario Creation. From this hub, three primary thematic branches emerge, representing the structural, emotional, and linguistic shifts observed during the pilot study.

Analytical Complexity (The Structural Branch)
The first branch addresses Research Question 1 (Scenario Quality). It identifies "Scaffolding Logic" as a foundational element, where the AI provided a structural framework that enabled students to move beyond linear storytelling. This led to the sub-themes of "Multi-Level Causal Chains"—the ability to trace complex "butterfly effects"—and "Narrative Risk-Taking," where students moved away from conventional tropes toward more sophisticated, psychologically dark resolutions.

Psychological Outcomes (The Affective Branch)
The second branch addresses Research Question 2 (Satisfaction and Self-Efficacy). A significant finding is the "Confidence Buffer," represented by a strong connection to the structural branch. This indicates that the logical clarity provided by AI directly mitigated "blank-page anxiety," leading to higher "Presentation Fluency." However, this branch also captures the theme of "Negotiated Ownership," reflecting the internal dialogue students had regarding the boundary between their original ideas and the AI's generative assistance.

Linguistic Scaffolding (The TESL Branch)
The third branch focuses on the educational impact on English learning. It highlights how interaction with AI facilitated "Vocabulary Acquisition" by introducing academic and thematic terms (e.g., *catalyst, stagnation*). This linguistic support resulted in a shift toward a more "Academic Tone" in both the written reports and the oral presentations, bridging the gap between conversational fluency and formal analysis.

The map utilizes dotted lines to show critical relationships, most notably between **"Scaffolding Logic"** and the **"Confidence Buffer."** This visual link demonstrates that the improvement in output quality was not merely technical but had a direct positive impact on the students' psychological readiness and overall satisfaction with their learning performance.

Discussion and Conclusion
Summary and Discussion of Findings
The findings of this pilot study indicate that AI support significantly influences both the structural quality of analytical scenarios and the subjective experience of the students. Students in the Experimental Group demonstrated a high degree of narrative coherence and thematic risk-taking, often producing psychologically complex resolutions compared to standard movie tropes. These results suggest that AI acts as a "scaffolding" tool, allowing students to map out multi-level butterfly effects that span social and psychological dimensions. This aligns with Cognitive Load Theory, as the automation of initial brainstorming likely freed up mental resources for higher-order thinking and complex causal reasoning. However, the process data also highlights the risk of "automation complacency". Aini and Basthomi (2025) argued that the effectiveness of AI in writing classrooms depends largely on pedagogical guidance provided by teachers rather than the technology itself. While output quality was high, the heavy reliance on AI for structural organization suggests a shift where students may move from being primary creators to editors, which requires careful pedagogical management. However, Songsiengchai (2024) cautioned that uncritical reliance on AI-generated responses may lead to surface-level engagement when learners accept outputs without sufficient evaluation.

Student Satisfaction and Self-Efficacy
Regarding student satisfaction, the data suggests that AI integration correlates with increased confidence during presentations. This mirrors Bandura's (1977) theory of self-efficacy; by providing a solid structural foundation, the AI tool appears to have reduced the anxiety associated with complex analytical tasks in a second language, leading to a more positive self-reported learning experience. While satisfaction was high due to efficiency and improved fact-checking, the interviews revealed a nuanced sense of ownership. Students felt more capable of handling sophisticated English analysis but remained aware of the ethical boundary between their original ideas and AI-generated suggestions. This underscores the importance of the ethical guidelines implemented in the study to ensure that AI remains a support tool rather than a replacement for authentic student effort.

Implications for English Learning and Pedagogical Practice
In the context of Teaching English as a Second Language (TESL), this study highlights AI's potential to improve structural coherence and vocabulary acquisition. By interacting with AI, students were exposed to and utilized specific terminology—such as "catalyst," "cascading consequences," and "thematic resolution"—that they might not have employed independently. The "What If" analysis successfully encouraged students to move beyond surface-level comprehension toward deep, evaluative thinking in English. For educators, this suggests that AI can be a powerful tool for developing critical thinking, provided that assignments are designed to require human justification of the AI's logical outputs. This finding aligns with Nhan (2025), who emphasised that AI-assisted personalised learning environments can enhance learner engagement and language development when appropriately integrated into instructional design.

Limitations and Recommendations for Future Research
Despite the positive indicators, this pilot study had several limitations, primarily its short one-week duration and the specific nature of movie-based analysis. While the sample of 53 students provided a sufficient basis for a pilot, the results may not reflect long-term cognitive skill development or the potential for skill atrophy over an entire semester. Future research should employ a longitudinal design to observe if the quality of independent work improves after a period of AI-supported learning. Additionally, more rigorous comparative analysis between the 27 students in the Control Group and the 26 in the Experimental Group is needed to further isolate the "AI effect" from general collaborative learning benefits.

Conclusion
In conclusion, this pilot study demonstrates that AI support serves as a powerful facilitator in higher education by enhancing the complexity and structural quality of creative analytical tasks. While AI significantly boosts student confidence and presentation satisfaction, the shift toward AI-assisted creation requires a balanced approach to protect authentic student agency. This research provides a critical foundation for developing institutional policies and pedagogical frameworks that allow for the ethical and effective integration of AI tools into the university curriculum. By setting clear boundaries and focusing on AI as a partner in the analytical process, educators can leverage this technology to deepen student engagement and improve learning outcomes in English language teaching.

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