Artificial Intelligence (AI) Use in Research Proposal Development: Insights from Students' Practices and Supervisors' Perspectives

استخدام الذكاء الاصطناعي في كتابة تصورات البحوث: بين ممارسات الطلبة و تطلعات الأساتذة المشرفين.

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Abstract *:*

This study investigates the extent to which English as a foreign language (EFL) students use Artificial Intelligence (AI) tools in developing their research proposals, particularly the specific areas of reliance, and the perceptions of both students and supervisors regarding the perceived benefits and drawbacks of such use. A mixed method approach is adopted using a questionnaire with 90 master two students and nine supervisors at Skikda university. The overall findings reveal widespread and regular AI integration among students, primarily used for title formulation, background of the study, methodology, formatting and references. Delving into supervisors' perspectives, they acknowledge their detection of AI use in students' proposals, and express concerns over overreliance, originality, plagiarism, and critical thinking. In spite of these, both teachers and students recognize the potential of AI in enhancing research proposals' quality and efficiency. Therefore, there is a call for ethical regulations and training to empower reflective AI use.

Keywords: *Artificial Intelligence, Critical thinking, Originality, Plagiarism, Research proposal*

الملخص :

تهدف هذه الدراسة إلى البحث في مدى استخدام طلبة اللغة الإنجليزية كلغة أجنبية للذكاء الاصطناعي في إعداد مشاريع بحوثهم. حيث تم التركيز على تحليل مراحل البحث التي يعتمدون فيها على هذه الأدوات. بالإضافة إلى آراء كل من الطلاب والمشرفين حول الفوائد والسلبيات المحتملة لهذا الاستخدام. وقد تم الدمج بين المنهج الكمي والنوعي من خلال استبيان شمل 90 طالب ماستر سنة ثانية وتسعة مشرفين بجامعة سكيكدة. بينت النتائج المحصل عليها عن استخدام واسع للذكاء الاصطناعي بشكل أساسي في صياغة العنوان، الجانب النظري، منهجية البحث، وكذا المراجع. ومن خلال استقراء آراء المشرفين، أقروا باكتشافهم لاستخدام الذكاء الاصطناعي في مقترحات مشاريع الطلبة، وعبروا عن مخاوفهم بشأن الإفراط في الاعتماد عليه مما يسبب الوقوع في السرقة العلمية، وضعف التفكير النقدي. ورغم هذه المخاوف، لا ينفي كل من الأساتذة والطلبة بإمكانات الذكاء الاصطناعي في تحسين جودة وكفاءة مقترحات مشاريع البحوث. وعليه، الدعوة لوضع ضوابط أخلاقية وتقديم تدريبات تمكن من استخدام واعٍ وتفكري للذكاء الاصطناعي أصبح أكثرمن ضرورة.

الكلمات المفتاحية: الذكاء الاصطناعي ، التفكير النقدي ، الاصلية في البحث ، السرقة العلمية ، مشروع البحث.

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Introduction

Artificial Intelligence (AI henceforth) integration into higher education has created noteworthy changes to students' academic writing practices. It has brought several innovations that reshape students' behaviours and reactions to academic writing tasks. The later have been proved to be challenging for many English as a foreign language (EFL) students for the difficulty of their structure, academic tone, and more topic-specific vocabulary. Therefore, for the release of unconditioned access to AI powered tools, namely ChatGPT, Grammarly, Gemini, QuillBot, many students perceive the easiness of the academic writing tasks, for the support those tools might provide.

Nevertheless, while an extensive body of research (Alberth, 2023; Burkhard, 2023; Malik et al., 2021; Santiago-Ruiz, 2023; Utami & Winarni, 2023; Zou & Huang, 2023)has been conducted to investigate the benefits and drawbacks of AI tools, as well as the general views about their integration in all academic fields, probing into their practical integration in academic productions, and research proposal is no exception, remains scarce. That is, what is not yet clear is empirical evidences and practices undertaken by students regarding their reliance on AI which might be extensive and improperly implemented in many cases. This study, consequently, seeks to explore how master two students actually use AI for their research proposals including their patterns and reasons of use, in addition to its perceived benefits and challenges as viewed by both students and their supervisors. In light of this, the following research questions are raised:

1. To what extent do students use AI tools in developing their research proposals?
2. For what specific aspects of the research proposal do students rely on AI?
3. How do teachers perceive the use of AI by students in developing research proposals?
4. What are the perceived benefits and drawbacks of AI use in students' proposal writing?

1. Literature Review

1.1. Artificial Intelligence in Education

As technology continues to advance, its role is expected to deepen, rapidly and significantly transforming education, providing innovative solutions to challenges encountered in language learning. Among these advancements, AI tools which provide more creative, dynamic, and personalized environments. Coppin (2004) defines AI as the capability of machines to adjust to unfamiliar situations, find solutions to problems, formulate plans, respond to inquiries, and execute tasks that normally require human-like intelligence. Similarly, Sharma et al. (2019) define AI as the capacity of machines to match human reasoning, enabling them to process information and make decisions in ways that resemble human cognitive functions. Consequently, AI integration has attracted widespread and substantial interest, with researchers exploring both its advantages and drawbacks.

1.1.1. Artificial Intelligent in EFL Context: Potentials and Pitfalls

The integration of AI into EFL classrooms has a pivotal role on enhancing the quality of the teaching and learning process. AI has revolutionized the educational environment by providing resilient tools and technology that enhance teaching and learning processes. In studies conducted by Chan and Hu (2023) and Kumar's et al. (2024), AI tools were proved to be effective in maximizing learners' opportunities to learn, facilitating the process of academic research, revolutionizing teaching methodologies, and optimizing learning experiences. Along similar lines, Chen et al. (2020) and Nhi (2023) reported that, beyond language learning, AI empowers teachers with insights that help them boost learning outcomes and teaching methods, adding that AI-driven gamification and simulations have improved the effectiveness and engagement of skill development.

That is, AI integration into education signifies a sea change, bringing about a renaissance in conventional methods of instruction while presenting novel opportunities for both teachers and students. According to Duarte et al. (2023), AI technologies support adaptive learning systems that cater to individual students' needs, delivering specialized materials and real-time feedback. This shift is obvious in different applications to establish new connections, access numerous information sources, and adjust to changing circumstances, rendering learning a dynamic and continuous process. AI

enhances these connections and collaborations, providing a personalized and engaging educational environment.

While the potential of AI in education is substantial, it is correspondingly important to explore the limitations that accompany its integration. It is, therefore, crucial to understanding issues related to data privacy, academic honesty, integrity, and human mind criticality and creativity with AI use to guarantee its beneficial and ethical use in academic settings. To illustrate, Haleem et al. (2022) and Rizkiani et al. (2024) concluded that overdependence on AI tools may result in limited critical thinking and problem-solving abilities. With AI assisted tools, students may neglect deeper cognitive activities like reasoning, analysing, synthesizing, and assessing content, which might therefore result in limited creativity. Subsequently, there is a need for teaching practices that encourage critical examination and interaction with AI input, with careful consideration of human supervision.

1.2. AI Tools for Academic Writing

Several attempts have been made to explore the role of AI in academic writing proficiency. In their study, Adiguzel's et al. (2023) reported that AI tools (ChatGPT in particular) play a pivotal role in enhancing students' academic writing efficiency. By providing more opportunities for students to leverage their writing ability, their motivation, interest and positive views about writing. This finding aligns with Farhi's et al. (2023) and Nguyen's (2023) study in which they explained that AI plays a crucial role in increasing students' motivation and engagement by providing personalized learning, videos and pictures, real-time feedback, and creative games, which facilitate and attract learners. In accordance with the above-mentioned studies Elbechir and Amara (2025) reported enhanced writing proficiency with the assistance of AI tools. Students viewed AI tools as a support to improve their writing skill by helping them understand their mistakes, providing suggestions that align with academic standards, and encouraging creativity in writing. Although, a number of studies support the use of AI in academic writing, still issues related to originality, ethical use, and academic trust need to be acknowledged. In their study, Santiago-Ruiz's (2023) and Waltzer et al. (2023) found that teachers and students perceived the use of AI in academic writing differently. While teachers were pessimistic and held a more negative view, students were in favour of AI in their academic writing tasks. This discrepancy and divergent views might be

attributed to teachers' awareness of the tension AI tools might cause. Students' academic writing productions might be risked for their academic theft, lack of privacy and transparency, and limited originality; risks which students might not aware of in many cases.

1.2.1. AI in Research Proposal Development

There is a volume of published studies describing the role of AI in dissertation and thesis writing. As an illustration, Hiouani and Khiari (2024) conducted a qualitative study to explore reasons behind EFL students' use of AI in their master's dissertation as well as their views about its benefits. Findings revealed that because students were faced with language, time, experience, and guidance constraints, they heavily relied on AI tools as a support for their dissertation writing. Similarly, in their study, Zou and Huang (2023) investigated the use of AI tools by Chinese doctoral students who demonstrated a firm commitment towards AI tools as they are easy to access and use. Overall, while existing studies support the use of AI in dissertation and thesis writing, far too little attention has been paid to the impulsive integration of AI powered tools in research proposal writing among EFL students. Therefore, this study makes a major contribution to research on AI use in academic writing by demonstrating its potential in research proposal writing.

2. Methodology

2.1. Research Design and Materials

In order to answer the aforementioned research questions, data for the present study were primarily collected using a mixed-method approach. Quantitative and qualitative research designs were adopted with in-depth analysis of students' practices and teachers' perspectives on the use of AI tools in research proposal development. In particular, data were collected using a questionnaire (administered to students) and a semi-structured interview (conducted with supervisors). By triangulating data sources, this approach not only enhances the reliability of the results but also provides deeper interpretative insights about the phenomenon under investigation.

2.2. Population and Sampling

Ninety (90) participants for the present study were randomly selected from the population of master two Algerian EFL students at Skikda university during the academic year 2024-2025, majored in Linguistics and Applied Languages. Master two students were purposefully chosen because they were required to develop a research proposal to their supervisors before the initiation of their

actual research represented in a final dissertation for graduation. Nine (09) teachers (supervisors) also participated in the study to capture their perceptions of AI use in their supervisees' research proposals.

3. Results

3.1. Quantitative Findings of the Students Questionnaire

In order to provide insights about students' AI integration in their research proposals, as well as their views regarding its role in the quality of their writings, frequencies and percentages for each of the five sections of the questionnaire were generated. For the open-ended questions, they were analysed qualitatively by coding students' responses into different themes.

Section One: Students' Writing Proficiency

Item 1. How do you rate your overall proficiency in writing?

Table 1. Students' Overall Proficiency in Writing

Proficiency Level	Number of Students	Percentage
Excellent	1	1.1%
Good	10	11.1%
Average	12	13.3%
Poor	67	74.4%

As highlighted in Table 1 above, a large majority of students (74.4%) reported having poor writing proficiency, with just 1.1% rating themselves as excellent. This indicates that because of their limited writing abilities, students are likely driven towards using AI tools for their academic writing assignments' accomplishment.

Item 2. How often do you find academic writing tasks challenging?

Table 2. The Frequency of Students Finding Writing Tasks Challenging

Response Option	Number of Students	Percentage (%)
Always	32	35.6%
Often	23	25.6%
Sometimes	18	20.0%
Rarely	07	11.1%
Never	01	7.8%

While only one student reported that s/she never found writing difficult, over 60% of them found it always or often challenging. These challenges might be related to their limited English language proficiency, difficulty of the writing

process itself, or even lack of experience with academic writing tasks. This, therefore, justifies students' dependence on AI tools as a support for their academic writing tasks.

Item 3. What aspects do you find most challenging in academic writing? (Tick all that applies)

Table 3. Students' Challenging Aspects in Academic Writing.

Writing Challenge	Number of Students	Percentage (%)
Developing strong arguments	59	65.6%
Generating ideas	52	57.8%
Organizing logically	47	52.2%
Using academic vocabulary	61	67.8%
Checking grammar	44	48.9%
Analysing critically	50	55.6%
Paraphrasing & summarizing	38	42.2%
Finding reliable sources	33	36.7%

Using academic vocabulary was the most reported challenge with 67.8% of students struggling with formal vocabulary in their academic writing. Finding reliable sources was the least reported challenge representing (36.7%) of the participants. 65.6 % of the students commented that developing strong arguments was the most difficult task to do. Just over half of the participants claimed generating ideas, analysing critically, and organizing logically to be the hardest tasks for them representing 57.8%, 55.6%, and 52.2% respectively. Checking grammar and paraphrasing and summarizing abilities respectively were also difficult as reported by 48.9% and 42.2% of the participants. These findings indicate that EFL Master students face a number of challenges related to academic writing, namely those related to analytical skills, which explain their reliance on AI a supporting tool to generate ideas and improve their critical skills, yet, with formal guidance form their teachers.

Section Two: AI Use in Students' Academic Writing

Item 1. Are you familiar with AI tools (e.g., ChatGPT, Grammarly, QuillBot, etc.)?

Table 4. Students' Familiarity with AI Tools

Students' Familiarity with AI tools	Number of students	percentage
Yes	90	100%
No	00	100%

In response to the question 'Are you familiar with AI tools (e.g., ChatGPT, Grammarly, Quill Bot, etc.)', all the 90 participants reported their familiarity, suggesting a rapid widespread of AI tools which become an integral

part of their learning all academic activities. For their easy accessibility, AI aids are now common resources for students as part of their academic activities used to generate ideas, draft and edit their tasks, and most importantly save time for more learning outcomes growth.

Item 2. Which AI-powered tools do you use for academic writing?

Table 5. Students' Use of AI-Powered Tools in Academic Writing

AI Tool Category	Number of Students	Percentage (%)
Grammarly or grammar/spell checkers	68	75.6%
Paraphrasing tools (e.g., QuillBot)	52	57.8%
AI assistants (e.g., Chatgpt, Gemini)	60	66.7%
Summarization tools	39	43.3%

Data presented in Table 3 above reflects the types of AI tools frequently used by students to support their academic writing. A large majority of students (75.6%) use grammar and spelling checkers like Grammarly to revise their writing and reduce errors for more language accuracy. 66.7 % representing more than two-thirds of the students used AI assisted tools like Chatgpt and Gemini as to brainstorm, draft and edit their writing. While over half of the students (57.8%) relied on paraphrasing tools such as QuillBot to rewrite in their own words information provided by AI tools, only 43.3% (less than half) used summarization tools. The overall results suggest that students' heavy dependence on different types of AI assisted tools may enhance their writing efficiency and overcome their weaknesses when used appropriately and responsibly.

Item 4. For what purposes do you primarily use AI-powered tools in your academic writing? (Check all that apply)

Table 6. The Purpose of Master 2 Students Using AI-Powered tools in Their Academic Writing

Purpose	Number of Students	Percentage (%)
Checking grammar	10	11.1%
Improving structure	54	60.0%
Paraphrasing sources	58	64.4%
Generating ideas	72	80%
Summarizing texts	45	50.0%
Overcoming writer's block	81	90%

The vast majority of students reported that they use AI for overcoming writer's block and generating ideas representing 90% and 80% respectively. Moreover, while more than half of the participants used AI for reasons like

paraphrasing sources (64.4%) and improving structure (60%), exactly half (50%) of them relied on AI for summarizing texts. This highlights that AI is used more for idea generation and cognitive writer's block, and less for grammar reflecting EFL students' real academic writing struggles. Therefore, clear guidance about paraphrasing, organizing, and summarizing content abilities should be provided to decrease students' over-dependence on AI tools, and improve their academic writing skills accordingly.

Section Three: AI use in Research Proposal Development

Item 1: Have you ever relied on AI in developing your research proposal?

Table 7. Students' Reliance on AI in Their Research Proposal

Reliance on AI in developing research proposal	Number of students	percentage
Yes	88	97.8%
No	02	2.2%

Approximately all the participants (88) relied on AI tools in developing their research proposals. This indicates the usefulness of AI as a supporting tool for EFL students to overcome their academic writing weaknesses. Students may face challenges with both the structure and the content of their research proposals making them less productive and creative. They may feel a need for a support from external sources, primarily AI powered tools to boost their academic writing experience and confidence.

Item 2: Which AI tools do you use?

Table 8. AI Tools Used in Research Proposal Development

AI tools used	Number of students	percentage
Chatgpt	88	97.8%
Gemini	00	00
Grammarly	05	5.6%
QuillBot	02	2.2%
DeepSeek	80	88.9%
All the above	10	11.1%

In contrast to Chatgpt which was the most widely used AI tool among students, with 97.8% of the students relying on it, followed by DeepSeek at 88.9%, a minority of participants used Grammarly (5.6%) and QuillBot (2.2%). Moreover, 11.1.% showed a diversified reliance on AI- writing tools including Chatgpt, DeepSeek, Gemini, Grammarly, and QuillBot. Overall, the heavy reliance on Chatgpt and DeepSeek rather than Grammarly suggest that checking grammar is less emphasized either for students' proficiency or its integration

with the other tools which provide more support for the content of their research proposals.

Item 3. How frequently do you use AI tools in your research proposal writing?

Table 9. Students' Frequent Use of AI tools in Their Research Proposals

Frequency of AI Use	Number of Students	Percentage
Daily	25	27.8%
Weekly	30	33.3%
Occasionally	20	22.2%
Rarely	10	11.1%
Never	5	5.6%

Data summarized in the table above shows that the majority of students use AI tools regularly in writing their research proposals, with 33.3% using them on a weekly basis ,27.8% using them daily, and 22.2% occasionally. Only a small number of students rarely (11.1%) or never (5.6%) used AI. This indicates that AI tools have become an important element of academic practices for its worth in students' academic writing efficiency and growth.

Item 4. For which parts of the research proposal do you rely on AI?

Table 10. Research Proposal Parts Developed by AI

Parts of research proposal developed by AI	Number of students	percentage
Title	80	96.7
Background of the study	80	96.7%
Statement of the problem	27	44.4%
Research questions	20	22.2%
Research objectives	07	2.2%
Literature review	15	16.7%
Methodology	80	96.7%
Grammar	05	5.7%
Academic writing style	02	2.2%
Formatting and structure	77	85.6
References and citations	54	60

As shown in the table above, AI tools were commonly used for the title, and sections of the background of the study and the methodology representing 96.7% of students for each, followed by formatting and structure (85.6%). Additionally, there was a moderate reliance on references and citations (60%), with fewer students using AI respectively for generating the statement of 0the

problem (44.4%) and formulating research questions (22.2%). Interestingly, the minority of participants reported the usefulness of AI for grammar (5.7%) and academic writing style (2.2%). This suggests that as most students might struggle with the initial phases of their research proposals, they seek assistance from AI tools for more elaboration, clarity, coherence, and effective organization. Students also relied on AI that might provide in text citations and list of references that align with more academic conventions. Less focus on AI for grammar and academic writing style indicates that students might be skilful in these areas or they might not be aware of AI assisted tool which help with grammar and style.

Item 5. Do you usually edit or revise the content produced by AI tools?

Table 11. Students' Frequent Edition of AI-Generated Content in Their Research Proposals

Frequency of editing AI content	Number of students	Percentage
Always	50	55.6%
Sometimes	25	27.8%
Rarely	10	11.1%
Never	5	5.5%

Over half of the respondents (55.6%) indicated that they always edit the content generated by AI tools, demonstrating a clear understanding and awareness of the need to critically evaluate AI content before using it. Of the study sample, a smaller portion of the respondents (27.8%) and (11.1%) respectively expressed the view that they either sometimes or rarely edit the AI content, with only 5.5% commented that they never edited. These findings suggest that while the majority of students are aware of the risks of overwhelming reliance on AI generated content such as bias and plagiarism, the minority might not be aware of them.

Section Four: Perceived Benefits and Pitfalls of AI Use in Research Proposal Development

Item 1. Please indicate how much you agree with the following statements (1 = Strongly agree to 5 = Strongly disagree): SA: Strongly agree/A: Agree/D: Disagree/SD: Strongly disagree.

Table 12. Students' Perceptions of AI Benefits in Research Proposal Development

Aspects	SA	A	N	D	SD
AI tools help me improve my academic writing skills.	36	47	0	7	0
AI helps me with an effective structure of my research proposal	26	58	00	6	0
Using AI saves me time when writing and editing my proposal.	45	45	0	0	0
AI helps me generate better research ideas and questions.	16	54	0	16	4
AI helps me overcome language-related difficulties in writing academic content.	68	22	0	0	0
I feel more autonomous in my writing with the help of AI	27	61	00	0	2
AI helps me generate clear and logical flow of ideas	10	80	00	00	00
AI allows me to access information at anytime and anywhere	70	20	0	0	0
I am aware of the ethical use of AI tools in academic writing	12	78	00	00	0
Relying on AI may reduce my critical thinking skills	27	52	0	11	0
I can come up with my original ideas after checking the content provided by AI	7	20	00	63	0
Even with the assistance of AI I can avoid plagiarism in my writing	48	36	00	02	04

In response to the statement 'AI tools help me improve my academic writing skills', 83 students agreed with the statement, compared to seven (07) students who did not agree. For the impact of AI use on the overall structure of the research proposal, 84 students agreed that it is helpful and effective. Similarly, 84 students agreed that they can avoid plagiarism in their writing even when relied on AI, and 88 students who agreed that AI tools make them feel more autonomous in their writing. Additionally, there were 70 students who agreed with the statement 'AI helps me generate better research ideas and questions' compared to only 20 students who disagreed with the statement. For the negative impact of AI, 79 students agreed that it negatively impacted their critical thinking abilities, with 63 students disagreeing that AI tools helped them to come up with their original ideas for their research proposals. Interestingly, all the respondents agreed that AI saved their time for writing and editing research proposals, helped with overcoming language related barriers, guided them through clear and logical flow of ideas, accessed information at anytime

and anywhere. In the same vein, students agreed that they were aware of the ethical use of AI tools in their academic writing for research proposal. Overall, these findings indicate students' positive perceptions of AI tools in their research proposal development. They held the view that AI is used as a support and a guide that assists with the content and the structure of their proposals for more clarity, coherence, and precision.

Item 2. How helpful is the use of AI in each area of your research proposal

Table 13. Effectiveness of AI Tools in Different Sections of the Research Proposal

Rate how helpful AI has been in the following areas (1 = Not helpful, 5 = Very helpful):

Section	1	2	3	4	5
Title formulation					
AI helps with creating more attractive and catchy titles	3	5	7	30	45
AI can suggest precise titles based on my proposed keywords	2	4	10	28	46
AI can help brainstorm research topics based on trends or gaps in literature	1	3	8	27	51
Background of the study					
AI can generate summaries of background information	2	6	7	29	46
It helps frame the research context	3	5	9	32	41
It precises my research scope	2	4	11	31	42
Statement of the problem					
It gives me insights about how to articulate the research problem clearly	4	7	12	30	37
AI assists in identifying inconsistencies or gaps in the literature	3	6	13	28	40
It helps me explain why it is necessary to address the proposed topic	5	8	12	28	37
Research Questions / Hypothesis					
AI can help frame questions or hypotheses based on the problem	3	5	10	27	45
It provides instructions about creating a more feasible and researchable topic	2	6	11	29	42
AI tools refine my drafted questions to sound more	1	3	9	31	46

relevant					
Research Objectives					
AI generates questions that are clear, measurable, and specific	2	4	11	28	45
It aligns my objective with the posed research questions and problem statement	3	6	10	29	42
It suggests a number of novel objectives to contribute to the broader area of my research	2	5	12	30	41
Literature Review					
AI can provide concise summaries of relevant and recent studies on my topic	2	4	10	27	47
It helps with synthesis of key information related to my study	3	5	9	30	43
It gives me insights about the different aspects to cover in my study	2	6	11	29	42
Methodology Description					
AI suggests suitable research approach, design, and tools that fit in my study	4	7	10	25	44
It outlines in detail data collection and data analysis procedures	6	9	15	33	27
AI outlines for me the methodology section in an effective way	5	6	12	30	37
Citations and Referencing					
It drafts in an accurate way all citations and references of my study	3	6	14	28	39
It checks consistency throughout the research paper	0	2	5	20	63
AI tools save time in generating citations and references	1	3	6	29	51
Grammar and Clarity					
AI assists with providing a more formal style	2	5	9	30	44
It identifies and corrects all the grammar errors	2	4	10	29	45
AI tools suggest clear sentence structures	1	3	8	32	46

The overall response to the question 'Rate how helpful AI has been in the following areas (1 = Not helpful, 5 = Very helpful)' was positive. Across all sections of their research proposal development, students expressed the view that AI tools are helpful and useful. The highest ratings were mainly of the title

formulation, brainstorming research topics based on trends or gaps in literature, correcting grammar errors, saving time for citations and references. To illustrate, 78 participants reported that AI is helpful (rating 4 or 5) in brainstorming research topics, and that it was helpful in improving sentence structure. Combining ratings of 4 and 5, a large number of students also rated AI as helpful in summarizing background information (75) and aligning objectives with research questions (71).

Item 3. What challenges do you face while using AI in your research proposal writing?

Table 14. AI Challenges in Research Proposal Development

Aspects	SA	A	N	D	SD
I am not skilful with the ethical use of AI in my writing.	12	38	2	30	8
AI leads me to plagiarism.	18	35	1	28	8
Having relied on AI, I cannot come up with my original ideas anymore.	25	30	2	25	8
I sometimes doubt the accuracy and the trustworthiness of the content generated by AI.	30	50	0	7	3
Merging AI-suggested structure with my own affects the overall coherence of the piece of writing.	22	45	2	18	3
I find difficulties when deciding whether AI-generated content needs to be revised.	20	48	2	17	3
AI diminishes the development of my academic writing skills.	23	31	2	26	8
No guidelines are provided by my supervisor or university about the appropriate use of AI.	28	52	0	7	3

In response to the questions 'What challenges have you faced while using AI in your research proposal writing?', a range of responses was elicited. A considerable number of students expressed their agreement or strong agreement with issues related to trustworthiness, accuracy of AI generated content, as well as missing instructions and guidelines about the ethical and responsible use of AI in academic writing. As an illustration, 50 ,53, 54, and 55 students respectively responded that they were not skilful with the ethical use of AI in their writing, AI led them to plagiarism, AI diminishes the development of their academic writing skills, and having relied on AI, they cannot come up with their original ideas. A significant number of participants also acknowledged that merging AI-suggested structure with their own structure affected the overall coherence of the piece of writing, and that they found difficulties when deciding whether AI-generated content needs to be revised and edited (67 and 68 students respectively). In the same vein, 80 students agreed with the two statements 'I sometimes doubt the accuracy and the trustworthiness of the content generated

by AI', and 'No guidelines are provided by my supervisor or university about the appropriate use of AI'. Subsequently, this combination of findings provides some support for providing formal training and clear guidance and instructions about the use of AI in academic writing for more critical engagement, ethical use, and valuable benefits.

Section Five: Recommendations for Future AI Integration in Academic Writing

Section 1. In your opinion, what measures should be considered to improve the use of AI tools in academic writing?

According to students, in order to improve the effective and ethical use of AI tools in academic writing, several measures should be considered:

- ✓ Universities should set clear rules on when and how to use AI tools for more academic integrity.
- ✓ Training sessions, seminars and workshops should be organized to raise both students' and teachers' awareness about the ethical use of AI.
- ✓ Ethical academic concerns such as plagiarism, bias, and data privacy should be carefully considered by suggesting more formal ways to deal with them.
- ✓ Academic Writing and Research Methodology courses should broadly cover issues related to AI literacy and academic honesty.
- ✓ Supervisors should take the responsibility to discuss with their supervisees the potentials and the risks of using AI in their research.
- ✓ Students should accept the idea that AI is just a supportive tool used only when needed, but not as a replacement of their human mind used for creativity and critical thinking.

3.2. Qualitative Findings of the Teachers Interview

Analysis for the qualitative data gathered from the semi-structured interviews was run using thematic analysis, by first creating codes using words and short phrases. Next, after coding the data, the codes were then transformed into "longer-phrased themes…to draw out a code's truncated essence by elaborating on its meanings. (Saldaña, 2016, p.231). Different themes related to teachers' perspectives of AI use in students' research proposal development were created including benefits and limitations.

3.2.1. Supervisors' Awareness of Their Students' Use of AI in Proposal Writing

All supervisors admitted that they were aware of and easily detected the use of AI in their supervisees' research proposals. They commented that they, in many cases, noticed a use of more elaborate language that goes beyond students' actual linguistic ability, highly organized and efficient structure. In contrast to students' language and structure which may lack formality consistency, and precision, most of the submitted research proposals seemed to be generated by AI tools. As an illustration, one teacher put it *"Indeed! Having a quick look at my students' written productions, I can tell whether they're of their own or someone else's"*; *AI in most of the times"*.

Another teacher added "*A language that is precise, concise, formal, and efficient, beside a well organised and structured piece of writing inform me whether it is developed by my supervisees or generated by AI tools to support their research proposal*". Teachers also added that even encountered with challenges in fully detecting AI generated content because of the lack of more reliable software, they build their judgments on students' actual style with their generated productions. "*Well! It is hard to detect whether the content and the structure of the proposal are generated using AI because we do not really have such reliable software. What I do then is I compare the students' level of writing based on their exam papers and judge*".

3.2.2. Reasons for AI Use

In response to the question about students' reasons for relying on AI in developing their research proposals, the following responses were elicited:

✓ **Organization and Structure of the Research Proposal**

While students struggle with organizing their academic research proposals, they tend to use AI which can help with a *logical organization of ideas*, a *clear and well-formed outline*. AI provides guidelines and instructions for students to follow to clearly and quickly organize their research proposals to conform with standards of academic writing. This is exemplified in this excerpt: *"Most importantly, students prefer an outline generated by AI to quickly develop their research proposals. AI provides important hints for students to align their proposals with academic writing conventions"*.

✓ **Language and Academic Writing Constraints**

When writing their research proposals, many students face difficulties in using a clearer language and precise tone to impress the reader. They, therefore,

deviate towards using AI as an assistant tool to help with *overcoming spelling and grammar mistakes*, use *more academic and formal tone*, *paraphrasing*, and *reformulating vague sentences*. As one supervisor said "*AI assists with overcoming challenges in spelling and grammar, formality and academic tone. It also helps with writing less unclear and vague sentences".*

✓ **Time Pressure**

In order to speed up the process of drafting, writing, and editing their research proposals within a given timeline, most students prefer last-minute writing. They henceforth, use AI to avoid missing the deadline of submitting their research proposals and save time "*Some students when running out of time, they simply copy and past from AI and submit without any further editing*". Other reasons causing time pressure for students might be attributed to their lack of understanding of their topic of research "*Without considering their procrastination, students' may not fully understand their topics, so they takt time to read about it and draft their proposals*".

✓ **Writer's Block**

When students feel overwhelmed with drafting their research proposals, they use AI to help with brainstorming ideas, suggesting topics, and structuring the work "*AI helps students to move forward when they are stuck*". AI also guides students towards more creativity and inspiration in coming up with their unique and original topics "*Students are inspired by AI. It helps them to be more creative and original after synthesizing previous similar studies*".

3.2.3. AI Patterns Use in Proposal Parts

According to the interviewed supervisors, the literature review and background of the study are the main parts primarily developed using AI. As many students struggle with brainstorming and summarizing all the background-complex- information about their chosen topic, they feel a need for further AI assistance with less reliance on research questions, objectives, and methodology. To illustrate "*I find that my supervisees heavily relied on AI in the section of literature review and background of the study. This might be due to their difficulty as they require more skills in understanding, summarizing, comparing, and synthesizing*".

3.2.4. Perceived AI Benefits in Research Proposal Writing

While acknowledging the potential of AI, the majority of teachers emphasize the need for moderation, ethical use, and critical engagement with these tools. As a supervisor stated "*AI is a double-edged sword. Although it can help with writing their research proposals, students should be guided through its ethical and judicious use".*

Academic Writing and Language Assistance

Supervisors expressed the belief that AI is helpful for:

- ✓ Grammar correction by identifying misuse of tenses, word choice, and punctuation
- ✓ Writing style might sound more formal and academic by suggesting more precise and less ambiguous words.
- ✓ Expands vocabulary by introducing useful words for accurate use.
- ✓ Assists with paraphrasing and rewording sentences for clarity and precision
- ✓ Logical flow of ideas by effectively structuring sentences

Efficiency and Critical Thinking Abilities

- ✓ AI Makes it easy to find quick and relevant information for research.
- ✓ It Reduces the time spent researching by summarizing key concepts effectively.
- ✓ Conciseness and focused ideas can be easily generated using AI for more clarity and logical flow.
- ✓ Critical thinking skills can be empowered with AI use. It provides diverse perspectives on one particular idea about a topic by different scholars for students to think deeper.

Enhanced Access to Information

- ✓ Through AI, there is an easy access to information, especially for those who do not have good search skills.
- ✓ It sometimes gives you clearer information from better and varied sources.
- ✓ AI provides more personalized information based on your interest.
- ✓ Real-time and current knowledge updates from articles and books might be provided by AI tools.

Writing Autonomy

- ✓ Without heavy and entire dependence on their supervisors, AI might assist students with speeding up their writing process. They might not take time waiting for their supervisors' feedback as AI provides an immediate on-demand review for the work.

- ✓ It helps with both the content and the structure of the research proposal by providing guidelines on self-editing and revision.
- ✓ AI offers flexible timing for students to ask questions and write at anytime and anywhere.

3.2.5. Potential Drawback of AI Use in Research Proposal Writing

A common view amongst interviewees was students' limited problem-solving skills, ethical issues related to originality and plagiarism as the detrimental effect of AI on their students' research proposals writing.

Limited Problem-Solving Skills

- ✓ Overreliance on AI tools creates the habit of copying and pasting without being engaged deeply with their research.
- ✓ Students may take all the information provided by AI for granted and consider it as the most reliable source.
- ✓ Deeper cognitive abilities such as summarizing and analysing might be reduced with the use of AI.
- ✓ Students' independent thoughts and engagement in deciding their own topic, structure, and content might be limited.

Ethical Issues and Originality Loss

Teachers argued that AI writing aids improve EFL students' writing content and structure but cautioned against blindly accepting AI-generated ideas, emphasizing the need for authenticity and originality. AI assistance raises the ethical issue of authorship and plagiarism; some tools do not provide sources or sometimes provide fictional sources, which may cause unintentional plagiarism. AI tools can lead to diminished originality in academic writing, since they may create text that closely mimics current literature, raising the likelihood of plagiarism

3.2.6. Future Insights about AI Integration in Research Proposal Writing

Supervisors acknowledged the usefulness of AI in proposal writing if used reflectively. They suggested a number of guidelines for students to benefit from its use, naming:

- ✓ Integrate an AI ethics course into the curriculum to provide students with best practices to fully profit from AI tools.
- ✓ Design clear and strict policies on the use of AI critically. Under supervision, AI aids may maximize students' opportunities to craft an efficient piece of writing

- ✓ Organize seminars and workshops on AI use.
- ✓ Provide universities with AI content detectors to ban students' heavy reliance on AI and edit their productions before submission.

4.Discussion of the Main Findings

This study investigated the use of AI generated tools by mater's two students to develop their research proposals. Specifically, the extent to which AI tools were used by students to write their research proposals, its frequent use in each section or aspect of the proposal, as well as its perceived benefits and potential limitations. The methodological approach taken in this study was a mixed methodology based on both quantitative and qualitative modes of enquiry to provide an important opportunity to advance the understanding of the place and the future of AI in academic research proposal writing. The research data was drawn from two main sources: a questionnaire administered to 90 master two students and a semi-structured interview conducted with nine (09) of their supervisors. A summary of the main findings arisen from the study along with their discussion in relation to the research questions posed are provided this section.

For the first research question **(To what extent do students use AI tools to develop their research proposals?)**, the findings disclosed that generally EFL master two students at Skikda university were familiar with AI tools, thus they consistently relied on them for developing their research proposals (98%) on a daily or a weekly -basis (more than 60%). This finding aligns with that of Ben Merabet (2024), in which she found that EFL students were familiar with and extensively used AI tools in their academic dissertation writing for the positive view they hold about its effectiveness and value in academic research. While Chatgpt and DeepSeek were the most commonly used AI tools, students did not heavily rely on Grammarly (5.6%) and QuillBot (2.2%). A possible explanation for these results may be the low proficiency level of EFL students in academic writing, and the challenges they encounter when being engaged in writing for academic purposes, namely research proposals. 74.4 % of those surveyed rated that academic writing skills as poor and cited a number of obstacles related mainly to limited vocabulary (67.8%), difficulty in developing arguments (65.6%), generating ideas, analysing critically, and organizing logically (all over 50%). Students, therefore depended on AI tools as a supporting resource that might help with overcoming their challenges, and hence perceive academic writing positively. This view aligns with Adiguzel (2023) and

Farhi's et al. (2023) who claimed that Chatgpt has a prominent role in students' academic writing as it offers opportunities to enhance their skills for the support it provides to bridge the gap in their academic writing skills.

On the basis of the second research question (**For what specific aspects of the research proposal do students rely on AI?)**, it is apparent from the analysis of the questionnaire that students mostly relied on AI in the early and initial phases of their research proposals. 96.7 of the sample stated their dependence on AI for generating the title, background of the study, and the methodology section of their research proposals. Similarly, there was also an overwhelm use of AI respectively for formatting and structure, as well as references and citations as far over half of the participants commented (85.6% and 60%). As these sections go beyond simply generating ideas for the research proposal to more synthesis of the background information and complex understanding of the topic (Denscombe, 2012), structured in a clear and relevant way with an academic tone. These areas are challenging for may EFL students as they require more critical thinking and problem-solving abilities.

However, students reported their low reliance on AI for generating research questions and statement of the problem. These aspects of the proposal entail deep personal understanding of the topic under investigation, and originality in approaching it. Therefore, students might feel hesitant to use AI that might not generate novel ideas and perspectives, and hence they fall into the risk of academic integrity, research ethics and credibility. This is in agreement with Vieriu's and Petrea's (2025) findings which showed that AI might lead to academic dishonesty and data privacy risks, Surprisingly, despite their reported challenges in academic writing, only very few students based their use of grammar and academic style with the assistance of AI tools. This might be attributed to either students' limited awareness of AI tools that help with grammar and style, or their preference of content over structure and grammar.

Regarding the third research question **(How do teachers perceive the use of AI by students in developing research proposals?)**, supervisors stated their awareness of AI use in the research proposals submitted by their supervisees. For the lack of reliable and accurate AI detection tools, teacher' awareness arose from their judgments of students' academic productions such as exam papers. They, in many cases, found an unbalance between students' actual academic writing ability and the quality of the work produced (research proposal).

Therefore, teachers demonstrated a nuanced perspective about AI in research proposal writing. They expressed the belief that AI tools are helpful and useful for students when faced with mis-organization strategies, language barriers, time constraints, writer's block, and low level of self-confidence in academic writing. Nevertheless, they emphasized on formal training on AI use for students to use it more responsibly, reflectively, and ethically, and hence overcome the many concerns of overdependence, plagiarism, and lack of originality. In line with this, Montenegro-Rueda et al. (2023), and Hiouani and Khiari (2024) suggested that institutions should impose robust guidelines and regulations for AI to be of more assistance for students when used ethically in academic writing.

In terms of the fourth research question **(What are the perceived benefits and drawbacks of AI use in students' proposal writing?),** responses were elicited from both students and teachers. They believed that AI helps with improving academic writing quality including accurate grammar, precise vocabulary and appropriate academic tone. Interestingly, AI tools can save time with searching, paraphrasing, summarizing and improving sentence structure and flow, and hence becoming more autonomous and creative in their academic writing without dependence on their supervisors. For the pitfalls, AI tools were believed to negatively affect students' critical thinking skills, deep analysis and problem-solving abilities. Echoing this, Badi (2025, p.232) in her study on 'Artificial intelligence-based tools for problem solving abilities in the EFL classroom: Advantages and threats', states that "AI does not help with critical and analytical thinking, selecting the most appropriate solution, and suggesting more innovative and creative solutions". AI tool can also result in plagiarism, lack of trustworthiness, and less accurate content as supported by Burkhard (2023).

Conclusion

The aim of this study was to explore the use of AI-generated tools by master 2 students in developing their research proposals. In particular, the study was centred around how extensively and in what ways students use AI tools, the specific sections of the research proposal where these tools are applied, and the perceived advantages and disadvantages from both students' and supervisors' viewpoints. A combination of quantitative (students questionnaire) and qualitative approaches (teachers interview) was adopted to provide important insights about students' academic writing practices with the use of AI and their teachers' perspectives.

The overall findings revealed students' awareness, extensive integration and regular use of AI tools in their proposal writing as a support to overcome key challenges of limited size of academic vocabulary, poor organization, and week argumentation abilities in academic writing. They, therefore, draft and craft the initial steps of title formulation, background of the study, and the methodology section of their research proposals with AI guidance and support. They also tended to structure their proposals, citations and references with the help of AI tools, yet only a minimal use for grammar and style. In the same vein, supervisors also recognized the increasing use of AI in students' proposals, acknowledging both its supportive benefits and diminishing pitfalls.

While AI tools were claimed to be effective and beneficial for the structure, quality, and efficiency of the research proposal, both supervisors and supervisees cautioned about overdependence, academic theft (plagiarism), and originality erosion. These might result from less critical thinking skills and AI misuse in academic writing and research. Therefore, strategies to enhance the reflective use of AI tools might involve pedagogical training, robust guidelines for AI ethical use, and integrating AI ethics into academic writing and research methodology courses.

Overall, the present study makes several noteworthy contributions to the current literature on AI. First, the findings contribute significantly to the existing literature on the use of AI in academic writing by providing important insights into the perceived role of AI tools in the research proposal development. Additionally, while a growing body of literature has generally demonstrated the benefits of AI in enhancing academic writing efficiency, this study has gone some way towards enhancing understanding of students' AI use as a supportive

resource that assist with addressing key academic writing deficiencies, namely, limited vocabulary, weak argumentation, and poor organization. Furthermore, the present study provides additional evidence with respect to AI use for specific sections and areas of the research proposal, focusing closely on title formulation, background of the study, and methodology section. Supervisors' perspectives further call for more training sessions and firm guidelines surrounding AI ethical use for more critical and responsible engagement of students.

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