

An Investigation into the Effectiveness of Machine Translation Tools for Improving Reading Comprehension Skills Among English Language Learners.

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تحقيق حول فعالية أدوات الترجمة الآلية في تحسين مهارات فهم القراءة بين المتعلمين اللغة الإنجليزية.

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الملخص :

تبحث هذه الدراسة في فعالية أدوات الترجمة الآلية في تحسين مهارات الفهم القرائي لدى طلبة اللغة الإنجليزية. ومع تزايد توفر تقنيات الترجمة الرقمية، يعتمد الطلبة كثيراً على الترجمة الآلية لدعم فهمهم للنصوص الإنجليزية. يهدف هذا البحث إلى دراسة ما إذا كان استخدام مثل هذه الأدوات يؤثر إيجابياً على فهم الطلبة للقراءة وتجربتهم العامة في تعلم اللغة. وقد تم اعتماد منهجية بحث كمية، تضمنت اختبارات لفهم القرائي واستبيانات وُزعت على طلبة اللغة الإنجليزية. جرى تحليل البيانات الكمية لقياس التغيرات في أداء الفهم. وتشير النتائج إلى أن أدوات الترجمة الآلية يمكن أن تُعزز بشكل ملحوظ فهم الطلبة لأساسيات القراءة، خاصةً لدى ذوي التحصيل الدراسي المنخفض من خلال تسهيل التعرف على المفردات وتفسير النصوص. ومع ذلك، فإن الإفراط في الاعتماد على هذه الأدوات قد يحد من تطوير استراتيجيات القراءة المستقلة. تلخص الدراسة إلى أن أدوات الترجمة الآلية، عند استخدامها بشكل مناسب، يمكن أن تكون موارد مساندة فعّالة في تعلم اللغة الإنجليزية. كما تناقش الدراسة الآثار التربوية المترتبة على ذلك وتقدم توصيات حول دمج أدوات الترجمة الآلية في تعليم القراءة.

Abstract:

This study investigates the effectiveness of machine translation tools in improving reading comprehension skills among English language students. With the increasing availability of digital translation technologies students frequently rely on machine translation to support their understanding of English texts. This research aims to examine whether the use of such tools positively influences learners' reading comprehension and overall language

learning experience. A quantitative research approach was employed, involving reading comprehension tests and questionnaires administered to English language students. Quantitative data were analyzed to measure changes in comprehension performance. The findings indicate that machine translation tools can significantly enhance students' understanding of reading materials, particularly for lower-proficiency ones, by facilitating vocabulary recognition and text interpretation. However, overreliance on these tools may limit the development of independent reading strategies. The study concludes that when used appropriately, machine translation tools can serve as effective supplementary resources in English language learning. Implications for educators and recommendations for integrating machine translation tools into reading instruction are discussed. .

Key words: Reading Comprehension and Using AI Tools, Difficulties in Comprehending Complex Texts, The Impact of Machine Translation on Vocabulary.

INTRODUCTION:

In recent years, there has been a remarkable development in the field of artificial intelligence, which has contributed in different years, including in the education sector. Some studies have indicated the importance of developing students' reading comprehension skills. In this context, Artificial Intelligence appears as a promising tool to support learning skills, especially in the field of text translation (Smith and Johnson: 2022). Despite the great development in the field of Artificial Intelligence and its applications in education, there is a knowledge gap about the effectiveness of machine translation tools in improving reading comprehension skills among English language students, especially for the English learners. Therefore, this study seeks to bridge this gap by evaluating the impact one of these tools (Artificial Intelligence AI) on students' understanding of complex texts that contain new terms, concepts, forbidden words, technical words, etc.

Background of the Study

Reading comprehension is defined as the ability to grasp, interpret, make sense of written language, which is an essential skill for achieving success, particularly in personal and possibly professional communication, when acquiring English as a second language. Researchers such as Grabe (2009) and Perfetti (2007) have highlighted that reading comprehension is not

inherently difficult, but requires intentional interaction and thoughtful engagement with written material text.

Consequently, researcher has observed that a many of English language students —particularly non-native speakers and beginners often encounter persistent challenges in comprehending difficult texts. These obstacles stem from various factors, including limited linguistic competence, the complexity of vocabulary, and the intricacies of grammatical structures, in addition to the variety and diverse nature of textual content.

The value of this current study lies in identifying and understanding these comprehension barriers and proposing appropriate strategies to enhance translation skills among students of English. Language, the difficulties faced by students in this area underscore the urgent necessity to implement modern approaches that facilitate both understanding and accurate translation of written texts. The researcher's academic background indicates the fundamental role of reading comprehension and effective translation play in language acquisition.

Statement of the Problem

The ineffective nature of conventional translation methods in facilitating reading comprehension poses a significant issue, as it can obstruct the advancement of students' reading abilities. While AI translation presents a promising alternative, there is a distinct necessity to assess its educational effectiveness (Heil, 2023), especially for students in the second and fourth semesters of the English Department. Analyzing the quality of AI translations and their influence on reading is also vital, given concerns over accuracy, underscoring the importance of responsible AI translation in education. Therefore, the fundamental challenge lies in comprehending how to incorporate AI translation to enhance, rather than replace, the reading comprehension process for English language students.

Research Questions

- 1-Does the use of AI-translated texts enhance reading comprehension for first and third-semester students in English Department?
- 2-How can AI translation be utilized effectively by students to improve their reading comprehension?

Objectives of the Study

The research aims to investigate how AI translation can assist English Department students in second and fourth semesters as they try to comprehend English texts. The study seeks to examine how AI-translated materials influence students' comprehension compared to human translations, while also considering their opinions on the effectiveness of these AI tools for learning. A primary objective is to identify the types of reading materials that AI translates, enabling students to utilize them more efficiently in the classroom. This research contributes to a discussion how AI can be better support of students 'language , focusing on their unique need and experiences.

Significance of the Study

This study aims to tackle the difficulties encountered by English language students in second and fourth semesters when it comes to understanding complex texts. By examining the potential of AI translation as a tool to enhance comprehension, the research provides practical insights for these students in the English Department, offering a more accessible and effective means to engage with English texts. It explores how to leverage this technology to bolster their reading skills. The findings of this study will contribute by emphasizing students' perspectives in developing effective comprehension and teaching strategies, equipping them with innovative tools that facilitate a deeper understanding of English texts. This approach aims to bridge gaps in their academic subjects and open up new opportunities within the realm of language learning.

Literature Review

This research serves as a crucial foundation, underscoring the expanding influence of Artificial Intelligence (AI) in the educational field, particularly in enhancing reading and comprehension abilities among English language learners. It stresses the vital significance of these skills for students' effective communication and academic achievement, while also addressing the obstacles they encounter—especially non-native English speakers and beginners—when grappling with intricate texts laden with new vocabulary, technical terms, and varied linguistic structures.

The study also emphasizes the pressing need to investigate the effectiveness of machine translation tools in improving these skills and to explore how to

integrate them effectively into the educational framework for English language learners, particularly those in second and fourth semesters. Additionally, it seeks to delve into prior research that has explored, either directly or indirectly, the impact of AI on text translation and its connection to reading comprehension.

One of the most notable applications of AI is in the field of translation, where AI-based translation tools now have the capacity to translate texts with remarkable accuracy and speed. This technological advancement raises critical questions regarding its effects on learners' reading and comprehension skills. This paper aims to find the relationship between AI as a machine translation tool and reading comprehension skills, examining how these tools influence learners' understanding of translated materials and their overall language proficiency.

Reading comprehension is a multifaceted cognitive process that entails deriving meaning from written texts. For second language learners, this process often presents greater challenges compared to native speakers (Grabe, 2009). Many factors affect reading comprehension, such as proficiency in the target language, prior knowledge of the subject matter, and familiarity with text structure. The capacity to comprehend a text in a foreign language relies on a complex interplay of these elements, necessitating not just the ability to decode words, but also to grasp the meaning conveyed by larger discourse units. Researchers have observed that “students often struggle with text comprehension, which hampers their performance in reading courses. However, upon discovering AI translation tools, our experience transformed; these tools provided accurate and swift translations, clarifying difficult vocabulary and thereby enhancing our comprehension.” Difficulties in reading comprehension can lead to frustration and hinder information retention, ultimately obstructing language acquisition. As researcher, this limited understanding of AI prompted me to adopt this project title.

Challenges in Comprehending Complex Texts for English Language Learners and the Role of Machine Translation

English language learners encounter significant hurdles in understanding complex texts, which may stem from linguistic challenges such as unfamiliar vocabulary, difficult grammatical structures, and specialized

terminology (Nation, 2001), Bernhardt, 1991 added that there are some difficulties in text formation related to length, dense ideas, and cultural references. These challenges impede students' ability to comprehend effectively and cultivate independent reading skills (Grabe, 2009).

In this context, machine translation tools emerge as a viable solution to facilitate comprehension. These tools offer rapid translations of difficult vocabulary and structures, conserving students' time and effort. They can also aid in understanding texts that contain specialized terminology or even taboo expressions by providing a foundational understanding.

This study aims to assess the difficulties faced by English language learners when engaging with complex texts and analyze the potential role AI can play in helping them overcome these challenges. This review will establish a theoretical basis for understanding and evaluating the impact of AI-enhanced translation on reading and comprehension skills among English language students.

The Impact of Machine Translation on Writing Performance of EFL Learners

Beyond the influence of machine translation on reading comprehension, this area increasingly impacts the development of writing skills among EFL learners. Many students struggle to articulate their thoughts clearly and concisely in English, often resorting to machine translation tools as a temporary technique. However, the usage of these tools raises questions regarding their effect on writing quality and long-term skill development.

In this context, researcher can refer to the study by Laish, Nimush & Cahiers (2023) which examined the effect of Google Translate on the writing performance of EFL learners at Badji Mokhtar University. The findings indicated a slight enhancement in students' writing performance, evidenced by increased vocabulary variety, fewer spelling mistakes, improved organization of ideas, and longer sentence structures. These results suggest that machine translation tools can be beneficial for certain aspects of writing, such as vocabulary expansion and grammatical improvement. However, the study highlighted only a "slight" improvement, raising concerns about the comprehensive effectiveness of these tools in advancing writing skills.

It is similar to this study as both lies in the exploration of the impact of machine translation tools on students' English language skills. However, this research emphasizes reading comprehension. Comparing the outcomes of both studies can deepen understanding of machine translation's influence on various aspects of English language learning.

The Impact of Machine Translation on Understanding and Correcting Linguistic Errors in Academic Writing

In the study titled *The Effect of Using Machine Translation in Mediating the Academic Writing Revision Process of Korean University Students* (2021), the error corrections made by 58 Korean university students were analyzed by comparing their original texts with machine-translated versions. Results indicated a clear reduction in errors in the revised texts, suggesting that machine translation facilitated students' understanding and correction of mistakes, revealed a positive correlation between the number of revisions and error reduction and confirming the role of machine translation in aiding the revision process. However, it was noted that students with higher language proficiency corrected a greater percentage of errors, raising questions about the support machine translation provides to those with lower proficiency.

This research investigates the role of machine translation in enhancing students' English language skills. Although it focuses on error correction in writing, it underscores the potential of machine translation as an effective tool for improving overall English comprehension.

The Impact of Machine Translation on Vocabulary Acquisition and Reading Comprehension in ESL Learners

A study by Abimbola (2023) explored the effects of machine translation on vocabulary acquisition and reading comprehension among ESL learners. Involving 60 university students, the study compared those who utilized machine translation with those who did not. Results indicated that students using machine translation performed better in vocabulary acquisition and text comprehension. However, furthermore that these students experienced higher cognitive load, indicating that while beneficial, machine translation should be used judiciously to avoid overwhelming learners.

This study is closely aligned with this research, as it directly examines how machine translation aids reading comprehension for English learners.

Abimbola's finding that reading comprehension improved significantly supports the objectives of this study. The observation regarding increased cognitive load is also an important consideration, fitting the researcher's aim to understand the responsible use of AI translation tools.

A recent study, that is strongly agree with the objective of this research, done by Wang's (2024) investigates the utility of AI translation and its influence on English reading comprehension. Acknowledging the irreplaceable role of human translation, the study explores the potential of artificial translation as a supportive tool.

Wang (2024) analyzed the relationship between various dimensions of translation by using artificial intelligence—such as accuracy, completeness, fluency, and consistency—and their effect on reading comprehension scores. A key finding revealed a significant positive correlation between these dimensions and comprehension goal, indicating that accurate and consistent AI translation can enhance reading comprehension. It suggested that improvements in human translation accuracy, linked to advancements in AI translation, significantly impact reading achievement. Wang's findings reinforce the hypothesis that AI can enhance English language learners' understanding of texts.

The Use of Artificial Intelligence in Teaching a Course on Translating Specialized Texts into English

Yang (2024) explored the application of AI in teaching a course on translating specialized texts into English. It examined the opportunities and challenges presented by AI, highlighting its potential to enhance the learning experience. The study evaluated AI-powered translation tools like Chat GPT and Google Translate, analyzing student feedback and translation quality. This research is relevant to this project as it investigates how AI can aid comprehension of complex or specialized English texts. Yang's findings support the notion that AI can significantly improve the learning process; AI translation positively influences reading comprehension for English language learners. The methodology of evaluating student feedback resonates with the approach, further strengthening the findings.

The impact of machine translation on English language skills—focusing on reading comprehension, academic writing, and the overall learning process—demonstrates that machine translation has substantial potential as

a supportive tool for English language learners. The studies reviewed indicate that machine translation can enhance reading comprehension by facilitating access to complex texts and clarifying challenging vocabulary. Additionally, it can aid in developing writing skills by expanding vocabulary, improving grammatical accuracy, and correcting errors. However, some studies noted only slight improvements in certain areas of language learning, suggesting that learners with higher proficiency benefit more from these tools. Further research is needed to effectively integrate machine translation into educational settings and to devise suitable teaching strategies. It is crucial to utilize this tool responsibly, considering individual differences among students and specific learning objectives.

Research Methodology

This study employed a quantitative research approach to gather numerical data concerning students' experiences and perceptions of utilizing AI-powered translation tools for English reading comprehension. The primary objective of this approach was to quantify the frequency of specific behaviors, the extent of agreement with particular statements, and the perceived utility and accuracy of AI translation tools among the target student population.

questionnaire was implemented for this research. This design was deemed appropriate as it facilitates the collection of data from a sample of participants at a single point in time, allowing for a description of the sample's characteristics, attitudes, and self-reported behaviors related to AI translation use. This method is efficient for amassing data from a relatively large group and for identifying prevailing patterns and trends within the collected responses.

1-Participants

The target population for this study consisted of undergraduate students enrolled in the English Department at the University of Zintan, Faculty of Education Yefren. A total of 32 students voluntarily participated by completing the online questionnaire.

•**53.1% (n=17) students in the second Semester.**

•**46.9% (n=15) students in the fourth Semester**

Participants were recruited using a convenience sampling method. An electronic link to the survey instrument was disseminated via the official

WhatsApp group for English Department students. Participation was entirely voluntary and anonymous. The data collection period spanned approximately two weeks, from April 27, 2024 to May 10, 2024.

Upon closure of the data collection period, responses from the online questionnaire were compiled. The quantitative data were analyzed using descriptive statistics. Initial data processing, including the generation of frequencies and percentages for all categorical data (demographics, frequency scales, multiple-choice questions), was conducted using the analytical features of Google Forms..

Participants were asked to indicate their current semester of enrolment within the English Department. Of the 32 respondents:

53.1% (n=17) reported being in the Second Semester.

46.9% (n=15) reported being in the Fourth Semester.

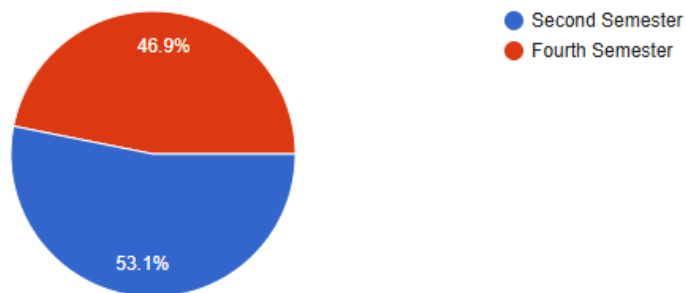


Figure 1: Distribution of participation by current semester

2-Reading Habits and Frequency of AI Tool Usage

2-1Frequency of Encountering Difficult English Reading Passages

Participants were asked how often they encounter English reading passages (for coursework, research, or personal interest) that they find difficult to understand fully on their own. Their responses (N=32) were as follows:

- **Very Often (Almost every time I read):** 21.9% (n=7)
- **Often (Several times a week):** 0% (n=0)
- **Sometimes (Once or twice a week):** 50% (n=16)
- **Rarely (Once or twice a month):** 25% (n=8)

- **Never:** 3.1% (n=1)

2-2Frequency of Using AI Translation Tools for Difficult Passages

When asked how often they use AI translation tools to help understand parts of English texts they find difficult during their studies, participants (N=32) responded as follows:

- **Very Often:** 15.6% (n=5)
- **Often:** 9.4% (n=3)
- **Sometimes:** 43.8% (n=14)
- **Rarely:** 31.3% (n=10)
- **Never:** 0% (n=0)
-

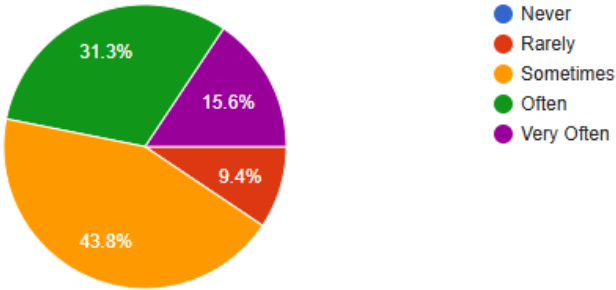


Figure2.2: Frequency of Using AI Translation Tools for Difficult Passages

3-Perceptions of AI Translation for Difficult Passages

Participants rated their agreement with several statements regarding the use of AI translation for difficult passages on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The results (N=32)

Table 3-1 Agreement with Statements on AI Translation Benefits

Statement	Rating 1 (Strongly Disagree) n (%)	Rating 2 (Disagree) n (%)	Rating 3 (Neutral) n (%)	Rating 4 (Agree) n (%)	Rating 5 (Strongly Agree) n (%)
A. Using AI translation helps me get a better overall understanding of the English text more	1 (3.1%)	9 (28.1%)	4 (12.5%)	9 (28.1%)	9 (28.1%)

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Statement	Rating 1 (Strongly Disagree) n (%)	Rating 2 (Disagree) n (%)	Rating 3 (Neutral) n (%)	Rating 4 (Agree) n (%)	Rating 5 (Strongly Agree) n (%)
accurately than trying on my own.					
B. Using AI translation helps me understand complex vocabulary in text faster and prevents misinterpretation of the main points of difficult passages.	3 (9.4%)	4 (12.5%)	9 (28.1%)	8 (25.0%)	8 (25.0%)
C. Using AI translation reduces my confusion or uncertainty about the meaning of specific parts of the text.	3 (9.4%)	2 (6.3%)	6 (18.8%)	12 (37.5%)	9 (28.1%)
D. Using AI translation makes me feel more confident about my comprehension of the English text.	2 (6.3%)	1 (3.1%)	6 (18.8%)	12 (37.5%)	11 (34.4%)

4-How AI Translation is Used

4-1 Typical Content Translated
Participants were asked what they typically translate when using AI translation while reading an English text. Their responses (N=32) were as follows:

- **Short paragraphs to get the main idea:** 40.6% (n=13)
- **Full sentences that are confusing:** 21.9% (n=7)
- **Specific phrases or idioms:** 18.8% (n=6)
- **Individual words I don't know:** 18.8% (n=6)

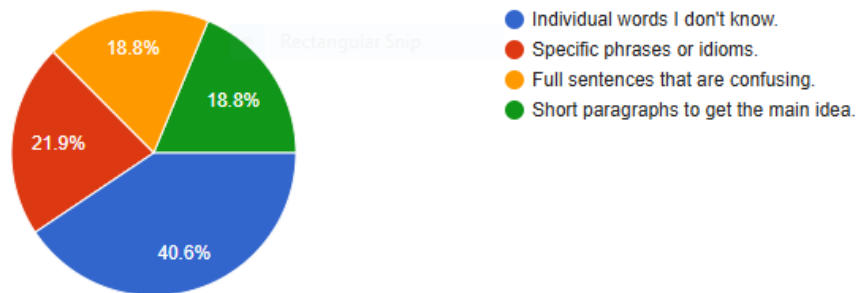


Figure 4.1: Typical Content Translated using AI

4-2 Reasons for Using AI Translation for Specific Parts of Text

Participants (N=32) indicated their typical reasons for deciding to use AI translation for a specific part of the text as follows:

- **I want a quick confirmation that my understanding is correct:** 31.3% (n=10)
- **The sentence structure is too complex:** 21.9% (n=7)
- **I don't know the meaning of a keyword:** 18.8% (n=6)
- **I understand the words but not the overall meaning of the sentence/phrase:** 12.5% (n=4)
- **I suspect there might be a different meaning or nuance I'm missing:** 9.4% (n=3)
- **I want to get the basic idea of a difficult section quickly before reading it carefully in English:** 6.3% (n=2)

Participants rated the helpfulness of AI translation for specific tasks while reading English on a 5-point Likert scale (1 = Not at all Helpful, 5 = Very Helpful). The results (N=32)



Figure 4.2: 2Reasons for Using AI Translation for Specific Parts of Text
Table 4-3 Perceived Helpfulness of AI Translation for Specific Tasks

Participants rated the helpfulness of AI translation for specific tasks while reading English on a 5-point Likert scale (1 = Not at all Helpful, 5 = Very Helpful). The results (N=32).

Task	Rating 1 (Not at all Helpful) n (%)	Rating 2 (Slightl y Helpful) n (%)	Rating 3 (Moderate ly Helpful) n (%)	Rating 4 (Helpfu l) n (%)	Rating 5 (Very Helpfu l) n (%)
A. Clarifying the meaning of unknown vocabulary in context.	5 (15.6%)	3 (9.4%)	6(18.8%)	10(31.3%)	8 (25.0%)
B. Understandi ng complex grammatical structures or long sentences.	0 (0.0%)	4 (12.5%)	5 (15.6%)	15 46.9%	8 (25.0%)

C. Getting a quick "first pass" understanding of a difficult passage's main idea.	1 (3.1%)	1 (3.1%)	12 (37.5%)	13 40.6%	5 (15.6%)
D. Checking or verifying my own initial interpretation of a passage.	2 (6.3%)	11 (34.4%)	9 (28.1%)	8 (25.0%)	2 (6.3%)
E. Seeing alternative possible meaning or interpretations I hadn't considered ,preventing me from making incorrect interpretations of key ideas	7(21.19 %)	4(12.5 %)	10(31.3%)	9(28.1 %)	2(6.3%)

5- Post-Translation Behavior and Perceived Effectiveness

5-1Comparing AI Translation with Original English Text

Participants were asked if they go back and re-read the AI translation to compare it with the original English text after their first understanding. Responses (N=32) indicated:

- **Sometimes:** 37.5% (n=12)
- **Rarely:** 28.1% (n=9)

- **Often:** 15.6% (n=5)
- **Very Often:** 12.5% (n=4)
- **Never:** 6.3% (n=2)

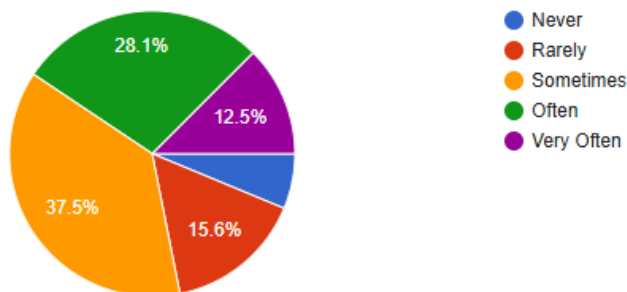


Figure 5.1: frequency of 1Comparing AI Translation with Original English Text

5-2 Perceived Accuracy of AI Translations

When asked how accurate they generally find the translations provided by AI tools for the types of English texts they read for their studies, participants (N=32) responded:

- **Mostly Accurate:** 43.8% (n=14)
- **Neutral / Sometimes Accurate, Sometimes Not:** 18.8% (n=6)
- **Very Accurate:** 15.6% (n=5)
- **Mostly Inaccurate:** 15.6% (n=5)
- **Very Inaccurate:** 6.3% (n=2)

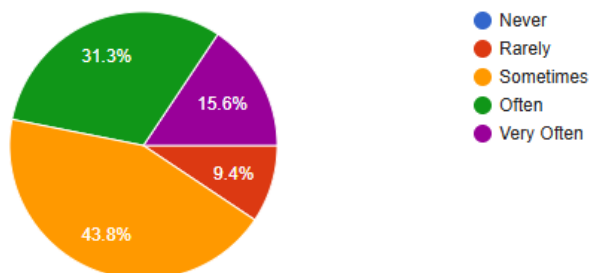


Figure 5.2: Perceived Accuracy of AI Translations

6-Biggest Challenges or Limitations When Using AI Translation

Participants (N=32) identified the biggest challenges or limitations they face when using AI translation for reading comprehension as follows:

- **The translation is sometimes inaccurate or misleading: 28.1% (n=9)**
- **It doesn't always understand the context correctly: 28.1% (n=9)**
- **The translation loses the nuance or specific tone of the original text: 18.8% (n=6)**
- **I might rely on it too much and not improve my English reading skills: 12.5% (n=4)**
- **It takes time to copy/paste text or the tool is cumbersome to use: 9.4% (n=3)** (Note: Analytics legend truncates this option)
- **I don't face any significant challenges: 3.1% (n=1)**
-



Figure 6 : Biggest Challenges or Limitations When Using AI Translation

Conclusion

This study employed a quantitative research methodology to investigate undergraduate students' experiences and perceptions of using AI-powered translation tools for English reading comprehension. Data were collected through an online questionnaire distributed to 32 students in the English Department at the University of Zintan, Faculty of Education Yefren, with participants drawn from the second and fourth semesters. The questionnaire,

conducted over two weeks, gathered information on students' reading habits, frequency of encountering difficult passages, and reliance on AI translation tools.

Descriptive statistics revealed that while many students frequently encounter challenging English texts, their use of AI translation tools varies from occasional to regular. The tools were perceived as helpful in clarifying vocabulary, understanding complex structures, and boosting confidence, though limitations such as inaccuracies, loss of nuance, and potential overreliance were also noted.

Overall, the methodology was effective in capturing measurable patterns of behavior and attitudes, providing a clear picture of how AI translation tools are integrated into students' reading practices. The findings establish a foundation for further analysis of the pedagogical implications and long-term impact of AI translation on language learning.

The discussion of the Findings

this study explored the perspectives of English Department students (**2nd semester and 4th semester**) at the University of Zintan, Faculty of Education Yafran, on the use of AI-translated passages for reading comprehension. The analysis connects these findings to the study's central aim: examining how AI translation tools support learners by clarifying ambiguities, providing initial comprehension, serving as a self-correction mechanism, offering alternative interpretations, and verifying understanding of specific linguistic features. The discussion culminates in a consolidated conclusion, followed by practical recommendations for students and educators, acknowledges the study's limitations and outlines directions for future research.

The results highlight that AI translation tools are widely used by English Department students when facing challenges in reading English texts. The following sections synthesize these findings in relation to the study's objectives.

1-Utility for Initial Comprehension and Confidence enhancement

Half of the students (50%, n=16) reported "Sometimes" encountering difficult English passages (Figure 2-1), while 43.8% (n=14) indicated "Sometimes" using AI translation for support (Figure 2.2). This establishes both the need and the frequency of usage.

AI translation was particularly valued for initial comprehension. For complex grammatical structures or lengthy sentences, 46.9% (n=15) rated it “Helpful” and 25.0% (n=8) “Very Helpful” (Table 4.3 Item B). Similarly, for gaining a preliminary understanding of a passage’s main idea, 40.6% (n=13) rated it “Helpful” and 37.5% (n=12) “Moderately Helpful” (Table 4.3, Item C). Students most often translated short paragraphs to grasp the main idea (40.6%, n=13) (Figure 4.1).

This initial support also enhanced confidence: 37.5% (n=12) agreed and 34.4% (n=11) strongly agreed that AI translation increased their confidence in comprehending English texts (Table 3.1, Item D). In an EFL context, this confidence boost is particularly significant, as it encourages engagement and persistence.

2-Role in Clarification and Targeted Problem-Solving

Students perceived AI translation as effective for resolving confusion and clarifying difficult text segments. A combined 65.6% (37.5%, n=12 agreed; 28.1%, n=9 strongly agreed) reported that AI translation reduced uncertainty about specific parts of a text (Table 3.1, Item C). This aligns with reported usage for translating confusing sentences (21.9%, n=7) and idiomatic phrases (18.8%, n=6) (Figure 4.1).

Reasons for use further emphasize targeted problem-solving: 21.9% (n=7) used AI when sentence structures were too complex, and 18.8% (n=6) when encountering unknown keywords (Figure 4.2). Although clarifying vocabulary yielded mixed ratings—15.6% (n=5) found it “Not at all helpful”—a majority (56.3%) rated it at least “Moderately Helpful” (Table 4.3, Item A). Thus, while vocabulary support is not flawless, AI translation remains a valuable clarificatory tool.

3-Self-Correction, Alternative Perspectives, and Critical Engagement

Evidence for AI’s role in self-correction and broadening perspectives was mixed. About one-third of students (31.3%, n=10) used AI to confirm their own understanding (Figure 4.2), yet ratings for verifying interpretations were modest: 34.4% (n=11) found it only “Slightly Helpful,” and 6.3% (n=2) “Not at all helpful” (Table 4.3, Item D).

Similarly, for exploring alternative meanings, 21.9% (n=7) rated AI “Not at all helpful” (Table 4.3, Item E). Moreover, many students compared AI translations with the original text only “Sometimes” (37.5%, n=12) or

“Rarely” (28.1%, n=9) (Figure 5.1). This limited engagement suggests that while AI provides immediate clarification, its potential for fostering deeper learning, critical analysis, and reflective comparison is not fully realized.

4-Awareness of Limitations and Challenges

Students demonstrated awareness of AI translation’s limitations. Nearly one-third (28.1%, n=9) acknowledged that translations can be inaccurate or misleading, and equally 28.1% (n=9) noted that AI sometimes fails to capture context (Figure 6). Additionally, 18.8% (n=6) observed that translations may lose nuance or tone.

Perceived accuracy was moderate: 43.8% (n=14) rated AI translations “Mostly Accurate,” while 18.8% (n=6) considered them “Neutral / Sometimes Accurate, Sometimes Not” (Figure 5.2). Concerns about over-reliance were also raised by 12.5% (n=4), who feared it might hinder their English reading development. This critical awareness reflects a responsible approach to tool usage.

Conclusion

This research has demonstrated the potential of machine translation tools to enhance reading comprehension skills among English language learners, particularly for those at lower proficiency levels. The quantitative approach employed in this study provided a comprehensive understanding of how these tools can assist learners in navigating complex texts, facilitating vocabulary acquisition, and thereby improving their overall language learning experience.

The quantitative data revealed significant improvements in comprehension performance among participants who utilized machine translation tools, highlighting their effectiveness as supplementary learning aids. Additionally, qualitative feedback from learners emphasized increased confidence and reduced frustration when engaging with challenging texts. Such insights underscore the positive impact that tailored technological interventions can have on language acquisition.

However, the findings also raised important considerations regarding the potential drawbacks of excessive reliance on machine translation. While these tools can serve as valuable resources, there is a risk that learners may neglect the development of independent reading strategies. It is crucial for educators to implement these tools thoughtfully, providing guidance on their

effective use while encouraging practices that foster critical reading and analytical skills.

In summary, this study advocates for the integration of machine translation tools into English language instruction, emphasizing their role as beneficial aids rather than replacements for traditional learning methods. Future research should explore long-term effects, best practices for implementation, and the experiences of a broader range of learners to fully realize the potential

of these technological advancements in education.

Recommendations

For Students

- 1-Employ AI translation for initial comprehension of complex grammar and main ideas, but avoid over-reliance.
- 2-Compare AI translations with the English source regularly to strengthen critical reading and language awareness.
- 3-Use AI translation to clarify confusion, but continue practicing independent reading to build long-term skills.
- 4-When AI translations provide unclear or inaccurate vocabulary, consult dictionaries or other reliable resources to confirm meaning.
- 5-Reflect on differences between AI output and the original text to foster deeper understanding and analytical skills.

For Educators

- 1-Encourage students to use AI tools as scaffolding for comprehension, while guiding them toward independent strategies.
- 2-Design activities where students evaluate AI translations against original texts, highlighting strengths and weaknesses.
- 3-Explicitly discuss issues of accuracy, context, and nuance so students learn to approach AI critically.
- 4-Leverage the confidence boost AI provides, but pair it with tasks that require independent interpretation and problem-solving.
- 5-Incorporate exercises where students explain why they used AI translation and how it affected their understanding, fostering metacognitive awareness

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