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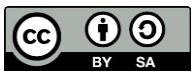

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Revealing Postgraduate Students' Experiences of Using Artificial Intelligence (AI) for Academic Purposes

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Abstract

The increasing usage of artificial intelligence technology has resulted in an increasing variety of uses in the area of education, especially language learning. This research aims to investigate postgraduate students' experiences when using AI for academic purposes. The study reveals that postgraduate students use AI for academic purposes, including interpreting complex vocabulary and verifying their translations. In addition, this research showed that they have cognitive, affective, and behavioral attitudes toward AI but also express concerns about cheating, grammatical errors, and dependency. Furthermore, postgraduate students vocalized the quality of their translations to machines, stating they were similar but had grammatical errors and were relevant to the topic but sometimes not appropriate with the context.

Keywords: *Academic Purposes; Artificial Intelligence; Attitudes; Experiences*

Introduction

Technological innovations in the 21st century have influenced how we live, work, and interact with the world around us. Artificial Intelligence (AI) is at the forefront of this digital development as it is an innovative trend that has affected every aspect of our daily lives. The 21st century is associated with innovation, and AI has become the "key" to this technological advancement. AI is the term used to describe the capacity of machines to execute tasks that typically require human intelligence (Allen, 2020). With the rapid development of AI, it has been used widely in our surroundings, including in education.

The rise of AI technology has led to an increasing number of applications in the field of education. These applications are expected to give personalized learning experiences, enable dynamic assessments, and facilitate meaningful

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interactions between learners and educational content. Emerging technologies have been revolutionizing the methods of teaching and learning (Zhang & Aslan, 2021). AI has been integrated into administration, instructional methods, and learning (Chassignol et al., 2018).

The development of AI has influenced the application of information and communication technology in language learning, particularly as a subset of computer-assisted language learning (CALL). Machine Translation (MT) has emerged as an alternative tool for understanding foreign languages. According to Sofer (2006), machine translation is a part of artificial intelligence, a specialized branch of computer science that focuses on utilizing computers to simulate human cognitive processes. Thus, AI integration in education encompasses administration, instructional methods, and language learning, where machine translation offers an alternative to understanding foreign languages.

Machine translation is an automated translation of text or speech from one language to another through the application of AI and computational linguistics techniques. According to Hutchins and Somers (1992), machine translation, which operates as an automated process, entails using computer software to convert text from one natural language to another. The use of MT is used to enhance communication and comprehension among individuals who speak different languages by offering instantaneous translations.

Machine translation represents the advancement of computer hardware and software intended to generate more accurate and higher-quality translated texts (Carl & Way, 2003). It can be concluded that MT is an automated translation of text or speech from one natural language to another that aims to enhance communication and comprehension. Machine Translation can have a significant impact on the field of language teaching (Groves & Mundt, 2015).

Machine translation can be incorporated into formal learning contexts, such as language teaching and learning. MT in language learning means using automated translation systems or tools to aid learners in comprehending and producing content in their target language. Over the past decade, machine translation has emerged as an important subject of study among researchers across various disciplines, including its application in teaching and learning (Lee, 2020; Shahriar, 2023). In addition, previous studies related to MT in language learning have been conducted by many researchers, such as Raído and Torrón (2020); Saputra, Atmowardoyo, and Salija (2022).

For instance, research carried out by Raído and Torrón (2020) showed that students use MT to improve their writing quality and as a learning resource, especially for writing assignments. Furthermore, the findings of the study done by (Saputra et al., 2022) indicate that participants in the research utilized machine translation as a reading tool in various ways while reading the scholarly paper. Thus, recent studies have shown that machine translation benefits language learning. It helps improve writing quality, enhances beginners' communication

skills, and is a valuable reading tool for scholarly papers.

Indeed, machine translation proves its usefulness across various language skills. The utilization of MT also helps students in their academic purposes. A number of studies about the use of MT have been carried out by Danping (2023); Kol, Schcolnik, and Spector-Cohen (2018); Okita and Kurokawa (2023) revealed that students utilize machine translators to complete assignments, even if their field of study does not necessitate competence in English. The other result found that machine translation gives important assistance to them. Machine translation is particularly popular among postgraduate students, even if their field of study does not require English proficiency.

In addition, a study conducted by Utimadini (2023) revealed that students use machine translation for comprehending the material presented by the teacher, achieve higher scores in English class, and learning specific language competencies, such as vocabulary and grammar skills. In contrast, it also revealed that machine translation is used in a leisure context to understand favorite movies, music, novels, and interactions in social media. Overall, students use MT more for reading, writing tasks, improving scores, oral communication, and listening.

Moreover, it is necessary to address the students' attitude towards utilizing technology, namely Machine Translation. Teachers can proficiently integrate machine translation into language learning practices by comprehending student attitudes. They can deal with any possible opposition or concerns and develop strategies that optimize machine translation advantages while considering students' preferences and comfort levels. According to Baker (1992), attitudes are a theoretical concept used to explain human behavior's direction and persistence. On the other hand, a negative attitude might result in less enthusiasm, disagreement, or a lack of dedication. Wenden (1991) proposed that the components included in attitude are cognitive, affective, and behavioral.

Cognition focuses on a thought or belief, affect focuses on a feeling, and behavior focuses on an action. Previous studies about learners' attitudes toward the use of machine translation have been conducted by Briggs (2018); Li (2023); Mulyani and Afina (2021); Saharudin, Harsyah, and Abrar (2024); Zhang (2023). For example, research carried out by Briggs (2018) found that students have limited trust in the accuracy of Machine Translation outputs. However, there are disparities in their dependency and perceived value of the tools. In addition, students struggled with critically analyzing the output of two popular WBMT (Web Based Machine Translation) tools.

Afterward, Mulyani and Afina (2021) found that students often use GT (Google Translate) for translation, checking word meanings and sentence translations. However, few consider GT to be ethically acceptable, as it aids language learning. In terms of affective attitude, students generally find GT to be helpful and easy to use. Some students even feel that GT assists them in their language-learning process. This positive affective attitude reflects the convenience

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and support that students perceive GT to provide.

In addition, Saharudin et al. (2024) discovered that pupils who maintain a positive outlook toward artificial intelligence can enhance their English proficiency. Overall, students' perception revealed that GT is a useful tool in translation, depending on its usage. In summary, students' perception of GT as a useful tool in translation depends on its usage. While limitations on accuracy and ethical concerns exist, the overall perception suggests that students value GT for its convenience and assistance in language-related tasks.

The machine translation result might vary in quality due to several reasons. Machine translation has made significant progress, enhancing overall quality by achieving higher accuracy and producing more natural-sounding translations. Nevertheless, machine translation is prone to errors, mainly when dealing with complex or unclear linguistic constructions, idiomatic phrases, or cultural sensitivities. Hutchins and Somers (1992) identify accuracy, clarity, and style as the primary criteria for evaluating the quality of a translation. Several previous studies related to the quality of machine translation output have been carried out by Hasibuan (2020); Maučec and Donaj (2019); Nasution (2022).

For example, a study carried out by Nasution (2022) revealed that MT translations are categorized into two quality levels: less readable and readable, due to their inability to adapt to Indonesian stylistic forms, failure to implement adaptation strategies, and sometimes following the original text's sentence structure.

The studies above exploring machine translation in language learning, students' perception, and comparing writing quality suggest that there are still gaps that need to be discussed, such as exploring the students' experience in using machine translation for academic purposes, specifically among postgraduate pupils who are typically engaged in advanced academic tasks to contribute new insights. Thus, the purpose of this research is to explore postgraduate students' experiences of using machine translation for academic purposes. The present study proposed the following research questions: (1) In what context do postgraduate students use MT for academic purposes? ; (2) What are postgraduate students' attitudes towards the use of machine translation for academic purposes? ; (3) How close is the quality postgraduate students' translation result to the machine?

Theoretical Framework

Machine Translation for Academic Purposes

Machine translation is the process of using AI and machine learning tools to translate text or speech from one language to another automatically. According to Hutchins and Somers (1992) machine translation is the automated process of using computer software to transform text from one natural language to another. Machine translation refers to computer software that automatically translates a

text from one language to another without human intervention (Baker & Saldanha, 2019). So, Machine translation automates the process of translating text or speech between languages using computer software and artificial intelligence.

The use of machine translation for academic purposes such as writing English sentences and understanding tasks (Okita & Kurokawa, 2023), as a dictionary (Clifford et al. 2013; Okita & Kurokawa, 2023), an assignment such as a writing task (Jin & Deifell, 2013; Jolley & Maimone, 2015; Kol et al., 2018), translation task, and presentation (Jin & Deifell, 2013). For instance, research done by Jin and Deifell (2013) showed that most higher education students use online dictionaries for reading and writing tasks while also using FOMT (Free Online Machine Translation) for their assignments, such as writing tasks, translation assignments, and presentations (Jolley & Maimone, 2015).

Students' Attitude Towards Machine Translation

Students' attitudes encompass the cognitive, affective, and behavioral aspects that students demonstrate in response to their academic settings, studies, and learning encounters. Wenden (1991) defined attitudes as having three fundamental elements: cognitive, affective, and behavioral. The cognitive component covers the thoughts, ideas, or perceptions that are associated with the object of the attitude. Affective means the personal and emotional experience of having positive or negative sentiments towards something. The behavioral component deals with the observable behaviors or tendencies that arise from an individual's attitudes. In addition, Picken (2005), as cited in Mulyani and Afina (2021) stated that attitudes encompass a diverse combination of personality traits, beliefs, values, behaviors, and motivations. Thus, Students' attitudes refer to their cognitive, affective, and behavioral reactions to their academic environment and learning experiences.

Some researchers have conducted studies related to student's perception of the use of machine translation (Alhaisoni & Alhaysony, 2017; Briggs, 2018a; Li, 2023; Mulyani & Afina, 2021; J. Zhang, 2023). For example, Zhang (2023) revealed that machine translation is often used for language learning and translation rather than as a straightforward tool. Students were willing to experiment with MT but doubted its classroom implementation. Despite this, they agreed that MT improved their translation speed and confidence.

Machine Translation Evaluation

Machine translation quality covers the accuracy, clarity, consistency, and fluency of translations produced by machine translation. The process includes evaluating the accuracy of the translation to the original text, the appropriateness of language usage, consistency in vocabulary, and many others. The key criteria for assessing the quality of a translation are accuracy, clarity, and style (Hutchins & Somers, 1992). Accuracy refers to the translation output of the same information as the original. Clarity focuses on the level of simplicity with which a reader may comprehend the translation. Style refers to the extent to which a translation uses

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language suitable for its subject and purpose.

Previous studies on machine translation quality have been conducted by (Hasibuan, 2020; Maučec & Donaj, 2019; Nasution, 2022). These studies focus on comparing machine translation with human translation. For example, a study by Hasibuan (2020) indicates that human translation is more effective and understandable than machine translation, which focuses on literal sentences or words without considering the intended target language's intent and purpose. Machine translation's semantic meanings are far from the truth compared to human translations.

Method

Research Design

This present research is typically designed as a qualitative study. Moleong (2005) qualitative research enables researchers to comprehensively understand the meaning behind research phenomena, such as behavior, perception, and motivation. This is achieved through a descriptive technique that uses words to describe and analyze the studied topic. The purpose of this study is to investigate postgraduate students' experiences and attitudes toward the use of MT for academic purposes. The research findings are then presented through written descriptions in words and sentences. Thus, qualitative design is appropriate for the aims of the study.

Participants

This research subjects were 10 (ten) postgraduate students, consisting of 5 (five) males and 5 (five) females. Random sampling is used to collect the participants because each person has an equal opportunity to be included. According to Gay & Airasian (2000) as cited in Putri et al. (2021), random sampling is the method of selecting a sample to ensure every individual in the specified population has an equal and independent opportunity to be chosen for the sample. Thus, the subjects were randomly chosen from the first semester of postgraduate students in one of the state universities in Surabaya. Their ages ranged from 23-40 years old. All participant were actively enrolled in postgraduate programs and had experience using machine translation tools for their academic purposes.

Data Collection Technique and Instrument

The data for all three research questions were collected using an open-ended questionnaire as the instrument and gathered around December 2023. Postgraduate students' voices related to their experience using machine translation for academic purposes were collected to answer the first research question. The data for the second research question were collected from postgraduate students' voices about their attitudes toward using machine translation for academic purposes. In the third research question, researchers reported the postgraduate students' voices regarding the result of the machine

translation output.

The instrument used in this study was adapted from Mulyani and Afina (2021); Okita and Kurokawa (2023); Zhang (2023). It consists of 3 (three) questions: question number 1 (one) was used to collect data for postgraduate students' experience (RQ1), question number 2 (two) was used to collect the data for postgraduate students' attitude (RQ2), and question number 3 (three) was used to collect postgraduate students' voices related to the quality of translation (RQ3). In addition, this study also collects the participants' demographic segmentation.

To reduce the risk of researcher bias, the researchers took several strategies, such as asking the participants to check their responses to confirm that their voices were correctly understood and written down. Regarding the ethical issues, the participants were given clear information about the research before taking part. To ensure anonymity, participants' real names were not mentioned, and each person was given a code name such as S1, S2, S3, S4, S5, and so on. This helped to protect their identity and privacy in all reports.

Data Analysis

The data analysis was conducted using the Miles, Huberman, and Saldaña (2019) flow analysis methodologies. The analysis process consists of three consecutive steps: data condensation, data display, and concluding/verification (Miles et al., 2019). Data condensation covers the process of selecting, centralizing, simplifying, abstracting, and/or transforming data. Data display refers to the presentation of organized and concise information that enables the derivation of conclusions and the implementation of actions. Drawing a conclusion involves drawing and confirming the conclusion.

Results

Postgraduate students' experience in using machine translation for Academic Purposes

The researcher displays and evaluates the questionnaire's findings to answer the first research question. The postgraduate students' experiences using machine translation for academic purposes can be classified into three major categories: translating, writing tasks, and verifying their translation.

a. Translating

Most postgraduate students utilize machine translation for their academic purposes in translation. As stated by student 3, 7, and 8, as follows:

"To translate L1 word to L2 word" (S3)

"I use translation machine to translate a new vocabulary" (S7)

"Translating the unfamiliar and difficult vocabularies in an articles, book, or other publications so I can understand the content of those publications" (S8)

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They use machine translation to translate unfamiliar and difficult vocabulary found in articles, books, and publications. Other students also use machine translation to translate their sentences or paragraphs, and translate first into a second language.

b. Writing Tasks

Postgraduate students also use machine translation for their writing. As stated by student 9 and 10 as following:

"I use it (MT) for my writing assignment when I got difficulties in writing my words using English" (S9)

"Usually using translation machine when I have lot of writing task because it helps me finish my writing" (S10)

When students get any writing assignments and can't write their sentences in English, they use machine translation to help them.

c. Verifying Translation

Students also use machine translation for academic purposes to verify their own translation. As stated by student 1, as follows:

"I use it (MT) when I'm feeling not sure about my translation" (S1)

Students use machine translation to verify their translation. So, after they write their translation, they go to machine translation to check whether their translation result is correct.

To sum up, postgraduate students use machine translation for academic purposes in various ways, such as translating unfamiliar words, difficult words, phrases, vocabularies, and sentences, writing tasks, and verifying their own translation.

Postgraduate Students' Attitude in Using Machine Translation for Academic Purposes

This study presents and analyzes the findings obtained from the questionnaire to address the second research question. The student's attitude can be categorized into three components. The most dominant attitude shown in the result is cognitive attitude (related to thoughts or beliefs), followed by affective attitude (related to feelings) and behavioral attitude (related to actions). This study will provide further explanation of these components.

a. *Cognitive Attitude*

Considering the postgraduate students' voices in using machine translation for academic purposes, the learners' attitudes regarding machine translation and its advantages and disadvantages can be seen ethically. First, the result of

postgraduate students' attitudes on the ethics of machine translation revealed that most of the students agreed that machine translation is ethically acceptable regarding how it is used, as stated by student 3:

"The use of machine translation is ethically acceptable regardless of how it is used" (S3)

So, most postgraduate students believe machine translation is acceptable for academic purposes, such as being helpful in the language learning process. However, others agreed that machine translation is considered cheating depending on its use, such as using MT for tests when it is not allowed, etc.

"The use of machine translation is considered as cheating regardless of how it is used" (S6)

The second is the postgraduate students' attitude on the advantages and disadvantages of using machine translation for academic purposes. The result showed that most of them stated that machine translation has advantages in helping them translate.

"It's helpful in translating word" (S5)

Postgraduate students perceive that machine translation gives advantages in helping them to translate difficult words, phrases, and sentences that they find while reading, listening, and writing. In addition, they also stated that machine translation is beneficial for avoiding plagiarism, as indicated by student 7:

"The options to choose synonymous word. When we type the word and the result comes out, we can scroll down to see other words of same meaning (synonym) and choose the other suitable words. We can also use this technique to avoid plagiarism (the same exact word)" (S7)

One of the tools available in machine translation is word suggestion, so the students can easily choose synonyms for the words to avoid plagiarism. Furthermore, other students believe that machine translation gives them benefit in understanding the meaning based on context, as stated by student 6:

"In my opinion, machine translation is a tool to make better people translating word or sentence. It means when people often open the machine translation to understand the meaning on context" (S6)

Machine translation enhances comprehension by considering context, helping the students understand the context of their needs. To sum up, some advantages of machine translation for academic purposes are helping to translate, choosing synonymous words to avoid plagiarism, and understanding the meaning based on context. However, the result of postgraduate students' voices also showed that machine translation has its constraints. The disadvantages are grammatical errors and affecting laziness, as stated by student 1 and 4:

"The grammar does not support in the translator machine, so we need to check it again especially in Google Translate many grammatical errors" (S1)

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"In my opinion, machine translation has a weakness and it is a making people be lazy to understand context if they don't want to understand word by word" (S4)

In addition, other students also found that machine translation has its constraints, such as dependency, as stated by student 10. The example of the statements is shown below:

"It can risk of dependency which can hinder deeper language learning" (S10)

In conclusion, the disadvantages of machine translation for postgraduate students are grammatical errors and dependency.

b. Affective Attitude

Postgraduate students' affective attitude toward the use of machine translation for academic purposes is related to their feelings. They could choose more than one suggested option and write down their feelings if it's not listed. The result showed that most postgraduate students felt enjoyment, as stated by student 1:

"I enjoy to use it because it helps me to do my work" (S1)

They enjoyed it because machine translation helped them do their work efficiently and effectively, and they could do the task independently. One student also felt enjoyed, but he had a different reason. He is flexible to use machine translation whenever and wherever, as stated by student 9:

"I feel like enjoy to translate as it is flexible to use wherever, whenever, I am" (S9)

As machine translation can be accessed anytime and anywhere, students enjoy it because they can use it flexibly. In addition, some students felt so-so when using machine translation because, somehow, it's helpful for them, but their background knowledge is essential. The examples of the statements are shown below:

"Mmm so so, ya somehow helpful but our background knowledge is important too" (S3)

Furthermore, one student felt confident when using machine translation. The accuracy of the result of machine translation gave the students a feeling of confidence with their writing, as stated by student 7:

"I feel confident because I know that the result of accuracy of translation is very high" (S7)

Conversely, one student stated she felt dependent on machine translation. The student believes that machine translation could help her, but she also has the feeling that she should always use it. It's stated by student 4:

"I feel like it can help me, but also have feeling to always use it" (S4)

In conclusion, the affective attitude of postgraduate students toward machine translation shows that they enjoy, are confident, and are dependent.

c. Behavioral Attitude

In the behavioral attitude, postgraduate students showed their action or behavioral intentions toward the use of machine translation for academic purposes, such as using machine translation to check collocation, as stated by student 5:

"(I) use MT to check collocations, synonyms, vocab, etc." (S5)

These students use machine translation to analyze and verify the correct word combinations in a specific context. Ensuring the accuracy and precision in comprehending the complex interconnections among words in academic texts.

In addition, postgraduate students also use machine translation for academic purposes to translate part of the essay, as stated by student 6:

"In doing my essay, I sometimes use machine translation for translating the part of my essay, it can be one or two paragraphs" (S6)

The motivation behind this action comes from the need to overcome language barriers and ensure the precise communication of ideas. Through the utilization of machine translation tools, students can effectively translate parts of their writings into a language in which they may not be proficient, helping them communicate their academic work more effectively.

In conclusion, postgraduate students showed three elements of their attitudes, including cognitive attitudes, such as whether machine translation is ethically acceptable regarding how it is used, affective attitudes, such as the advantages and disadvantages of using machine translation for academic purposes, and behavioral attitudes, such as using machine translation to check collocations, synonyms, and vocabulary.

The quality of postgraduate students' translation results to the machine translation

In this part, the study was conducted using reported research based on postgraduate students' voices related to the quality or closeness of their translation results to machine translation. This research revealed that the quality of their translation results to machine translation is based on accuracy, clarity, and style. First, the accuracy refers to the result that has the same information as the original. So, the postgraduate students stated that their translation is quite close to the machine translation but conditional. It is stated by student 5:

"The quality is quite good, it's similar to my translation but I found long words not appropriate (S5)

The result of machine translation is quite similar to the students' translation, but they found some errors in the translation of long and complex sentences. In terms of clarity, it refers to the readability of the translation. In other words, it refers to how the reader can understand the result of the translation. Postgraduate

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students stated that the results of their translation and the machine translation were understandable. It means that both of the translation results are readable. It is explained by student 1 and 2:

"It contains understandable sentences as mine" (S1)

"Yes, it's understandable for me to work with English text that might have sentence or words that I need to know the meaning." (S2)

The machine translation (MT) output is commendable since it generates coherent sentences that may be compared to their own translations. The beneficial outcome indicates progress in machine translation technology, the ability to understand context, and the opportunity for users to personalize their experience. On the other hand, another postgraduate student stated that she sometimes found the output of machine translation provides wrong grammar, as indicated by student 3 and 5.

"Sometimes understandable, sometimes found grammatical errors" (S3)

"No, I don't, because sometimes those machines give wrong grammar" (S5)

Furthermore, style covers the degree to which the results of the translation apply language that is suitable for its topic and purpose. Postgraduate students stated that the style of the machine translation is good because it can provide the appropriate language based on the topic. It is commented by student 6 and 10:

"... The result of the translation gives the appropriate language" (S6)

"Ya... Because the quality of machine translation influences my writing results by providing suitable language that represents my intentions." (S10)

In contrast, other postgraduate students also stated that they sometimes find the output of machine translation inappropriate for the context, so it is not the same as their translation. Female student 4 stated this.

"... It can't choose the right language so it's out of (the) context" (S4)

In conclusion, the quality of postgraduate translation is quite similar to the machine-translation output. However, some errors are found in the machine translation output, such as grammatical errors and the inability to choose a suitable language based on the context.

Discussion

Postgraduate pupils' experience using machine translation for educational reasons

The result showed that postgraduate students use machine translation for academic purposes, such as translating unfamiliar words, difficult words, phrases, vocabularies, and sentences, writing tasks, and verifying their own translation. The results were consistent with the previous study, which analyzed data from students

and teachers regarding their usage of machine translation (MT). For instance, Jolley and Maimone (2015) found that the usage of machine translation (MT) among participants is 65.08% used for individual words.

In addition, Saputra and Akib (2022) revealed that they employed MT to detect difficult words or to translate phrases, word-to-word translation, and sentence-to-sentence translation. Okita and Kurokawa (2023) demonstrated that students used machine translation to validate the accuracy of their writing in English by translating it into their mother language. Next, postgraduate students also shared that they use MT writing tasks. It aligns with Jin and Deifell (2013), who revealed that students studying foreign languages utilize online dictionaries for reading and writing tasks.

Besides, postgraduate students also use machine translation to verify their own translation. In line with this, Kol et al. (2018) also found that Google Translate (GT) can be a valuable resource for EAP students, provided that they can assess and correct the results it generates critically. Therefore, postgraduate learners indicated that they benefited from machine translation for academic purposes such as translating, verifying their own translation, etc.

Postgraduate pupils' attitudes about using machine translation for educational purposes

Postgraduate students' voices related to their attitude toward the use of machine translation for academic purposes. The study showed that postgraduate students can be seen from cognitive, affective, and behavioral attitudes (Wenden, 1991). The cognitive attitude showed that most of them perceive MT as ethically acceptable regarding how it is used, such as helpful in language learning. These findings, in line with the previous research done by Mulyani and Afina (2021), found that the cognitive attitude suggests that a few students believe that GT is morally acceptable regardless of its application due to its beneficial role in the language acquisition process. Some others concurred that machine translation can be perceived as cheating, depending on its usage, such as employing it for tests when it is prohibited. It is supported by Mulyani and Afina (2021), who found that MT is considered cheating if used for tests and graded assignments.

In addition, postgraduate students also shared their cognitive attitudes related to advantages and disadvantages. They revealed that machine translation offers several benefits for academic purposes, including help in translation and choosing synonymous terms to avoid plagiarism. The results were consistent with the previous study conducted by Sujarwo (2020), which revealed that students utilize machine translation (MT) to translate words, phrases, messages, and paragraphs. Still, they often need to review and reorganize the output to achieve an appropriate translation based on their understanding. Zhang (2023) indicated that MT was primarily utilized as a method to obtain language proficiency and improve translation ability rather than exclusively as a tool for direct translation.

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However, postgraduate students also revealed that machine translation has some constraints, such as grammatical errors and dependency. Postgraduate students believe that if they use MT, they could rely on MT and hinder the acquisition of more profound language skills. It is supported by Ardila (2021), according to students, the utilization of machine translation has resulted in negative outcomes related to dependency and laziness.

Afterward, postgraduate students revealed their affective attitudes towards the use of machine translation for academic purposes. They felt enjoyed because machine translation assisted them in completing tasks by enabling independent and efficient translation of any language, surpassing the quickness of traditional dictionaries, and being flexible to use it whenever and wherever. It aligns with Medvedev (2016), as cited in Susanto (2017), revealed that Google Translate offers convenience and can be used everywhere. Students also felt so so because it's helpful, but background knowledge is important.

They acknowledge its usefulness but also recognize the importance of having background knowledge for achieving correct and relevant results. Next, the postgraduate student felt confident due to the high level of accuracy of machine translation. The study found that a few participants had confidence in the accuracy of the results produced by WBMT tools for their English assignments (J. Zhang, 2023). However, they also felt dependent on it when completing their tasks. Students need to be aware of the limitations of this tool and utilize it as an alternative resource while concurrently enhancing their language proficiency. It relates to research by Ardila (2021) that found negative outcomes related to dependency.

Furthermore, regarding their behavioral attitude towards the use of machine translation for academic purposes, they utilize machine translation to verify collocations and translate particular parts of their essays. Google Translate was discovered to be more helpful in terms of supplying the most up-to-date technical terminology, phrases, and collocations when compared to a dictionary (Medvedev, 2016). Finally, postgraduate attitudes towards the use machine translation for academic purposes showed their cognitive attitudes such as ethics, affordances and constraints, affective attitudes, and behavioral attitudes on machine translation.

The quality of postgraduate pupils' translation output in machine translation

This study discussed the reported data based on postgraduate students' voices related to machine translation for academic purposes. The quality of the closeness of postgraduate students' translation result to the machine translation shown in the three categories: accuracy, clarity, and style (Hutchins & Somers, 1992). Regarding accuracy, several postgraduate students claimed that the result of their translation is quite similar to machine translation as it has a high level of accuracy. However, one of them claimed that it depends on the length of the words. It can be said that the accuracy of machine translation is good if the sentence being

translated isn't very long, but the result will be bad if the sentence being translated is very long. This finding correlates with the previous study by (Medvedev, 2016). Google Translate frequently lacks grammatical precision and accuracy when dealing with lengthy texts.

Next, clarity relates to the legibility of the translation. In short, it refers to the reader's comprehension of the translated result. Postgraduate students reported that both their translation and the machine translation produced comprehensible results. It means both translation outputs are understandable. However, other postgraduate students have expressed that she occasionally gets machine translation results exhibiting incorrect grammar. It is in line with the study by Medvedev (2016) that Google Translate often exhibits problems in grammatical clarity and accuracy while processing lengthy texts.

Furthermore, the style includes the extent to which the translated content employs appropriate language for its topic and purpose. Postgraduate students complimented the machine translation's style for accurately generating language relevant to the topic. On the other hand, other postgraduate students have expressed that they occasionally get machine translation results that do not align with the intended context. It is supported by Craciunescu, Gerding-Salas, and Stringer-O'Keeffe (2004), as cited in Abdulhaq (2016) that machine translation is limited in its ability to generate meaningful texts due to its reliance on the contexts, denotations, and connotations of words and combinations. This limitation is further compounded by users' inability to provide the full-text context.

In a nutshell, the quality of postgraduate student translation to the machine is quite close in accuracy. However, this cannot be valid for lengthy translations as the outcomes are unsatisfactory. The clarity of the translation result is understandable, but others stated that machine translation results exhibit incorrect grammar. The style of the translation output is good but sometimes does not correspond appropriately to the actual context.

Conclusion

In conclusion, the study analyzed the experiences voiced by postgraduate students about the utilization of machine translation for academic purposes. The findings highlighted that they use machine translation to translate the sentence for essays or paragraphs, unfamiliar or difficult words in articles, books, or publications, writing tasks, and verify their translation to check the credibility and accuracy. In addition, postgraduate students' voices related to their attitudes towards the use of machine translation for academic purposes revealed that they showed cognitive attitudes in terms of ethics, advantages and disadvantages, affective attitudes such as they enjoy using machine translation to complete the tasks and behavioral attitude such as translate particular parts of their essays.

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However, they also shared their attitudes towards the drawbacks of MT, such as cheating, grammatical errors, and dependency. Furthermore, postgraduate students shared their voices about the quality of their translations to the machine. They indicated that the machine translation output and their translation are quite similar, but it depends on the length of the text. Both outputs' clarity is understandable, but sometimes there are some grammatical errors. The style of both outputs is relevant to the topic by using appropriate language, but sometimes, it does not align with the context.

This study has several practical implications for both educators and students. Teachers should guide learners on how to use the machine translation tools carefully and critically. For students, the findings suggest that machine translation can be a helpful tool for translating, writing, comprehending new vocabulary, and so on, but it should not replace active learning. Students also need to review and edit the MT-generated output as these tools may produce errors or unnatural phrasing.

Although this current research gives valuable insights into postgraduate students' experiences with machine translation tools in academic settings, it has been limited by its small sample size, which hinders the generalization of its conclusions. In addition, the study focused on a single university, which may not represent the experiences of students from different regions, disciplines, or cultural contexts. Furthermore, the students' attitude towards the use of machine translation could change over time. Moreover, this study only reported the voices of postgraduate students regarding the quality of machine translation findings in relation to their writing. In future research, the large sample size might indicate the variety of the students' answers. In addition, comparing the translation document and the result from machine translation can provide a more accurate response from the students.

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