

Language Instructors' Beliefs and Coping Mechanisms on the Use of Machine Translation: Cautions and Concerns

Ya Ling Lew

Academy of Language Studies, Universiti Teknologi MARA Perlis Branch, Malaysia

Naginder Kaur*

Academy of Language Studies, Universiti Teknologi MARA Perlis Branch, Malaysia

Huzaifah A Hamid

Academy of Language Studies, Universiti Teknologi MARA Perlis Branch, Malaysia

Foo Terng Hoe

Academy of Language Studies, Universiti Teknologi MARA Penang Branch, Malaysia

Abstract—Machine translation (MT) is widely used in second or foreign language learning and is one of the most used language learning applications among tertiary learners. However, problems arise when learners are unable to utilise machine translation effectively, necessitating important instructor guidance. The present study aimed to explore university instructors' beliefs about learners' use of machine translation in second or foreign language writing tasks and assessments and to investigate the extent to which teaching strategies and assessments are adapted in view of its widespread use. Quantitative and qualitative data were collected from 127 instructors at an institution of higher learning via questionnaire and semi-structured interview. Findings revealed that instructors concur with the use of machine translation as a useful auxiliary learning tool, as long as it is used with care and caution within clear guidelines and framework. Although the instructors have also made some adjustments to their teaching, their coping mechanisms are not sustainable owing to lack of clear guidelines on the use of machine translation in language learning. It is suggested that learner guidance and clear institutional guidelines be provided for optimal use of machine translation in language learning.

Index Terms—instructor beliefs, machine translation, machine translation literacy, plagiarism, institutions of higher learning

I. INTRODUCTION

In recent years, in the process of language learning, human-machine cooperation (Ahmad, 2019) has been encouraged to fully meet the talent demand of the society in the era of artificial intelligence. In current times, the emergent trend in second or foreign language learning at higher education is the pervasive use of technology, with heavy reliance placed on it, especially in the area of machine translation (MT) (Clifford et al., 2013; O'Neill, 2019a). Research shows that it is not uncommon for language learners to use MT when learning a second or foreign language. Specifically, it has become the go-to source of assistance for translation of words, sentences, and even paragraphs (Fibriana et al., 2021). Hence, MT is now being widely used in language learning and is one of the most used language learning applications among tertiary students (Chan & Ang, 2017). It has evolved as the preferred option to not only complete coursework assignments, but also course assessments, consequently impacting the learning style as well as instructional strategies and assessment methods as a whole.

At the present stage and in the immediate future, MT provides learners with only semi-done translations (Akbari Motlaq & Tengku Mahadi, 2020). Even the recently released ChatGPT with strong translation ability still requires effective prompts for its translation ability (Peng et al., 2023), therefore it is not possible to exclude manual editing from MT. The most recent and most advanced Neural MT still requires human correction even with simple tasks (Nguyen & Chiang, 2018), requiring learners to equip themselves with the ability to translate, modify and improve, when necessary. Some are of the view that translation is the fifth full-scale aptitude to supplement the other four language skills of listening, speaking, reading, and writing (Campbell, 2002). In addressing the current context of widespread use of MT, it is necessary to incorporate MT in the classroom as one of the pedagogical tools to guide learners to use it effectively and efficiently (Akbari Motlaq & Tengku Mahadi, 2020).

The effective use of machine translation (MT) as an auxiliary tool in second language or foreign language learning is

* Corresponding Author

now an emerging issue that requires attention. Despite its potential benefits, learners often struggle to use MT effectively, leading to the need for close instructor guidance (Lam, 2021; Lee, 2020). However, there is limited understanding on how instructors view MT as an auxiliary tool and whether they are prepared to guide learners in using it (see Ata & Debreli, 2021; Niño, 2009). This raises questions about how instructors view the use of MT in the learning process, including evaluation tasks, and whether they agree with learners' use of MT. If they do, how do they determine the extent to which learners can use MT, and how do they adjust their teaching methods and evaluation tasks accordingly? In addition, research suggests that instructors themselves need training in the use of MT (Bowker, 2020). Given the lack of training provided by many higher education institutions, it is crucial to explore how instructors view MT as an auxiliary tool in second or foreign language learning to ensure effective 'human-machine collaboration'.

In addition, with the increasing use of MT in various disciplines around the world, the entry of MT into higher education institutions has also introduced a new level, particularly in relation to issues of heightened academic misconduct and plagiarism (Mundt & Groves, 2016). It is necessary to consider necessary revisions of second or foreign language writing assignments and assessments. At present, academic circles are also studying and discussing plagiarism and misconduct caused by MT (Mundt & Groves, 2016), hopeful of focusing at education policy level. Based on the increased adoption of MT, it is of concern to know whether the current traditional mode language writing and assessment work used in universities will still be relevant for use at this stage and whether adjustments have been made, and if so, to what extent.

With these considerations, the present study aims to explore university instructors' beliefs about learners' use of MT in completing second or foreign language writing tasks and assessments and to investigate the extent to which teaching strategies and assessments are adapted in view of the widespread use of MT. Hence, this study seeks to answer the following research questions:

- (1) What are the beliefs of university instructors about learners' use of machine translation in completing second or foreign language writing tasks and assessments?
- (2) How do university instructors adapt their teaching strategies and assessments to the widespread use of machine translation?

This study probes the beliefs and dispositions of 127 instructors teaching second or foreign languages, namely, English, Mandarin, Japanese and Arabic at a public institution of higher learning through a mixed-methods mode of quantitative and qualitative means of data collection methods.

II. LITERATURE REVIEW

A. Instructor Beliefs

In recent years, a significant number of studies have investigated the beliefs of second or foreign language learners on the use of MT, while relatively few studies have explored instructors' perceptions on MT. There have been studies about MT that involve both students and instructors which highlight the importance of receiving training on this technology (for example, Jolley & Maimone, 2015) and detail out the benefit of MT literacy training in a collaborative way (Bowker, 2020). Rico and Pastor (2022) investigated the beliefs and perspectives of translation instructors on the introduction of MT in classrooms, focusing mainly on instructors in the field of professional translation and excluded opinions of general language instructors on the use of MT by learners.

Although Google Translate is one of the most widely used language learning applications among tertiary students (Chan & Ang, 2017), little is known about the perceptions of language instructors on the use of MT among learners. A recent study by Ata and Debreli (2021) investigated learners' and instructors' respective perceptions and attitudes towards MT. It was interestingly found that instructors often overestimate learners' use of MT tools, while learners in turn, underestimate instructors' interest in online MT tools (Ata & Debreli, 2021). Therefore, it is important to incorporate both viewpoints to improve MT experience in language classes.

Earlier, Niño (2009) also researched on the attitudes of learners and university language instructors about MT in foreign language learning. Both groups agreed that MT was a positive and innovative learning experience, but it was found that only a few instructors used MT in their teaching. Most instructors expressed interest in introducing this technology as they evolve in their career, hence, wait-and-see attitude was evident in fully adopting MT technology. However, moving forward over a decade, we can note the difference in instructors' attitude towards MT. Ata and Debreli (2021) conducted research on both learners and instructors and found instructors to carry a more positive view of the quality of MT compared to learners. Most instructors did not wholly object to the use of Google Translate as a learning tool, rather, they acknowledged its potential in enhancing language skills (Cancino & Panes, 2021). Stapleton and Leung (2019) also found that despite the perceived pitfalls in the output of MTs such as Google Translate and online dictionaries, instructors often allow learners to use these tools. Interestingly, as the output of MT becomes more accurate over time, instructors are unable to recognise or detect it (Stapleton & Leung, 2019).

B. Instructor Concerns

Despite its immense benefits, the use of MT in language teaching and learning remains controversial. Some instructors hold MT to a high regard, even to the extent of maintaining that its shortcomings are insufficient to outweigh its benefits in improving learners' understanding of the complexity of translation and language learning (Baker, 2020; Niño, 2009). On the flip side, others have reservations, worried that MT will serve as a crutch or as means of avoiding the use of target

language (Yi & Choi, 2015).

Some instructors also have reservations about the use of MT on grounds of academic integrity (Bowker, 2020; Correa, 2011). In Clifford et al.'s (2013) study, 43 instructors of Romance languages (namely, Spanish, French, Italian and Portuguese) were surveyed, with almost half believing that MT was equal to cheating. The study of Jolley and Maimone (2015) found that more than 85% of instructors considered the use of MT for reading texts longer than a single word to be unethical or equivalent to cheating. A significant number believed that ethical judgment depends on how students use these tools (Ata & Debreli, 2021). However, most instructors believe it is unethical to use MT for writing tasks, which is in contrast to the perspectives of students (Ata & Debreli, 2021). Previous studies have shown that the use of MT by learners may be considered cheating, but learners would continue to use MT regardless of instructors' attitude (Case, 2015; Clifford et al., 2013; Correa, 2011, 2014; Niño, 2009; O'Neill, 2019b; Zhang, 2020).

C. Instructor Guidelines

Instead of disallowing the use of MT, studies tend to encourage educators to guide learners in using MT to ensure effective learning (Cancino & Panes, 2021; Lam, 2021; Yoon, 2016). First, educators need to explain to students the strengths and weaknesses of MT and how to use it as a viable language resource or tool (Lee, 2020). Secondly, educators need to demonstrate how MT incorporates various effective (or otherwise) applications or strategies, pointing out factors that may impact output quality (Jolley & Maimone, 2015; O'Neill, 2019a; Stapleton & Leung, 2019). Next, instructors should clarify to students the rules and consequences of using MT (Jolley & Maimone, 2015). Moreover, students should also be guided to develop necessary skills to effectively use MT as the technology still requires further manual intervention and editing, rather than fully accepting its output (Case, 2015; O'Neill, 2019a).

Research also encourages instructors to utilise MT in language learning classrooms. Ducar and Schocket (2018) urge language teachers to fully understand the capabilities of MT and incorporate it in the toolsets commonly used in language classrooms. This should be used as a pedagogical tool to guide students to correctly use this technology both inside and outside the classroom (Lam, 2021). By strategically introducing MT in language learning classrooms, teachers expose learners to the diverse media and tools available to them (McDougall et al., 2018), thereby effectively serving learners' needs and future use (Lee & Briggs, 2021). All these suggestions are constructive, thus, necessary to find out how far instructors today have gone in this field, how language instructors talk about MT with their students and how they themselves interact with this technology (Case, 2015; Clifford et al., 2013; Correa, 2011, 2014; Garcia & Pena, 2011; Lee, 2020; Niño, 2009; O'Neill, 2019b; Zhang, 2020).

III. METHODOLOGY

This study used quantitative and qualitative methods of data collection. The participants were a group of 127 instructors teaching second or foreign languages in a public higher education institution in Malaysia. Table 1 shows participant details.

TABLE 1
DEMOGRAPHIC PROFILE OF PARTICIPANTS

| Demographic Variables & Categories | Frequency | Percentage |
|------------------------------------|----------------|------------|
| Age | Below 31 years | 3.9 |
| | 31-40 years | 35.4 |
| | 41-50 years | 32.3 |
| | 51-60 years | 28.3 |
| Gender | Male | 27.6 |
| | Female | 72.4 |
| Language taught | English | 31.5 |
| | Mandarin | 26.8 |
| | Japanese | 23.6 |
| Teaching experience | Arab | 18.1 |
| | 4-10 years | 25.2 |
| | 11-15 years | 24.4 |
| | 16-20 years | 11.8 |
| | above 20 years | 38.6 |

The majority were in the age range of 31-40 years, which represents 35.4% of the total population, followed by the range of 41-50 years (32.3%), 51-60 years (28.3%) and below 31 years (3.9%). Respondents of the study were primarily females (72.4%) while males made up the remaining 27.6%. The majority (31.5%) teach English, while more than a quarter (26.8%) teach Mandarin, 23.6% teach Japanese and 18.1% teach Arabic. About 38.6% have more than 20 years of teaching experience, followed by teaching experience of 4-10 years (25.2%), 11-15 years (24.4%) and 16-20 years (11.8%).

The instrument used was a questionnaire developed by the researchers, where participants were required to fill in the 25-item Likert scale instrument. The questionnaire contained three parts: the first part was to elicit demographic details of the respondents; the second part was related to instructors' beliefs about learners' use of MT in completing language tasks and assessments while the third part was related to adaptations in instructors' teaching strategies and assessments in the widespread use of MT. A total of 127 questionnaires were returned in complete, yielding a response rate of 100%. Each statement elicited instructors' level of agreement on a 5-point scale (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 =

Disagree, 5 = Strongly disagree). A higher score demonstrated a more positive attitude toward the item(s) and a lower score was indicative of a more negative attitude. The data were analysed using PASW Statistics software (SPSS) version 28 for descriptive statistics. The Cronbach's alpha reliability score was 0.832, greater than 0.7, hence, indicating a reliable level. Descriptive statistical analysis was utilised based on research questions, to obtain the mean (M) and standard deviation (SD) scores to determine instructors' views and beliefs about learners' use of machine translation. In order to report the average score of responses to each case (range 1-5), the measurement method provided by Hanson et al. (2005) was adopted. This method suggests an average score of 1.00 to 2.33 to be considered low, an average score of 2.34 to 3.67 as medium, and an average score of 3.68 to 5.00 as high.

Semi-structured Interview

Based on the results of the questionnaire, 15 instructors who demonstrated a more positive view of the use of MT were selected for a semi-structured interview. Table 2 shows the instructors' details.

TABLE 2
INTERVIEW RESPONDENT DETAILS

| Respondents | Gender | Language Taught |
|-------------|--------|-----------------|
| R1 | Male | Japanese |
| R2 | Female | Japanese |
| R3 | Female | Japanese |
| R4 | Female | Japanese |
| R5 | Male | Japanese |
| R6 | Female | Japanese |
| R7 | Female | Mandarin |
| R8 | Male | Mandarin |
| R9 | Female | Mandarin |
| R10 | Male | Mandarin |
| R11 | Female | English |
| R12 | Female | English |
| R13 | Female | English |
| R14 | Female | Arab |
| R15 | Female | Arab |

The researchers employed semi-structured interviews as the main method of eliciting the views among university instructors. Semi-structured interviews allowed participants to share their experiences and insights with researchers (Blee & Taylor, 2002), who in turn, recorded and transcribed the interviews. It was ascertained that rapport was established to ensure quality data. The interviews were conducted in Malay, English or Mandarin and participants were allowed to respond in any language. They were also free to code-switch to ensure clarity in their responses as the flexibility of code-switching enabled participants to share their perspectives without inhibitions.

Interview questions explored instructors' observations and views on learners' use of MT in completing language tasks and to find out the adjustments made in the face of this phenomenon. Some sample questions are:

(1) Have you ever discovered your learners using machine translation in the process of completing writing tasks or assessments for learning a second or foreign language?

(2) In the widespread use of machine translation, how do you adjust your teaching methods and assessment methods?

To proceed with the coding protocol, data were analysed following three levels: (i) Open coding, (ii) Axial coding, and (iii) Selective coding (Strauss & Corbin, 2008). The first step involved reading the manuscript of the interviewees to obtain a general idea of the content. After understanding the main points expressed by the participants, we started coding from the text to capture data related to the research questions. Next, we compared the data to create different categories. The second level explored the relationship between categories as after open coding and piecing together the data, there was connection between categories to form a more accurate and complete explanation. The final level involved simplifying codes into themes by finding common elements and generating a set of theoretical propositions by connecting categories, thus establishing a set of research results.

IV. RESULTS AND DISCUSSION

A. University Instructors' Beliefs on the Use of Machine Translation in Completing Writing Tasks and Assessments

TABLE 3
INSTRUCTORS' BELIEFS ABOUT THE USE OF MT LANGUAGE WRITING

| | N | | Mean | Median | Std. Deviation |
|--|-------|---------|------|--------|----------------|
| | Valid | Missing | | | |
| Is a useful auxiliary tool | 127 | 0 | 3.71 | 4.00 | 1.010 |
| Is an important auxiliary tool | 127 | 0 | 3.67 | 4.00 | .976 |
| Is an unavoidable auxiliary tool | 127 | 0 | 3.79 | 4.00 | .896 |
| Is an auxiliary tool for checking vocabulary | 127 | 0 | 3.53 | 4.00 | 1.207 |
| Is an auxiliary tool for sentence construction | 127 | 0 | 3.99 | 4.00 | .877 |
| Is an auxiliary tool for paragraph translation | 126 | 1 | 3.68 | 4.00 | 1.048 |
| Have less anxiety when using MT | 127 | 0 | 3.69 | 4.00 | .972 |
| Have more confidence when using MT | 127 | 0 | 3.64 | 4.00 | 1.029 |
| Do not rely on MT as an auxiliary tool | 127 | 0 | 2.65 | 3.00 | 1.158 |
| Use MT in language writing tasks | 127 | 0 | 3.75 | 4.00 | 1.023 |
| Use MT as an auxiliary tool in language assessment | 127 | 0 | 3.57 | 4.00 | 1.059 |
| Is acceptable to use MT to complete writing tasks | 127 | 0 | 3.35 | 4.00 | 1.088 |
| Is acceptable to use MT to complete language assessments | 127 | 0 | 2.97 | 3.00 | 1.161 |

Most instructors agree that MT is a useful auxiliary learning tool in language writing (3.71). They are also in agreement on the inevitable role of MT as an assistive tool in language writing (3.79). To prove this, only a few concur that learners do not rely on MT (2.65), which confirms that the majority are aware of learners' dependence on MT. This result confirms results of several previous studies which have shown that the majority of language learners rely on MT (Delorme Benites et al., 2021; Dorst et al., 2022; Looock & Léchauguette, 2021; Resende & Way, 2021).

Most instructors believe that learners most frequently translate sentences (3.99), followed by paragraphs (3.68), and vocabulary (3.53). Through the interviews, they agreed on its advantage in assisting learners in completing writing tasks, including helping to correctly construct sentences (R14), learn vocabulary (R1, R7), or as a stepping stone in learning the language (R10). Other uses include its ability as a reference tool (R3, R9, R11, R15), to reduce anxiety (3.69) and to boost confidence (3.64).

Although the majority agree on the positive role of MT in writing tasks (3.75) and assessments (3.57), only a few condone it in completing writing tasks (3.35), or assessments (2.97). Whilst MT is generally accepted to replace the work of professional translators (O'Brien & Ehrensberger-Dow, 2020), and has its merits, instructors indicated that learners must be aware of its flaws or fallacies when translating. Bowker (2019) astutely points out the two sides of MT where the benefits are precisely its drawbacks, hence, the effortlessness with which we employ this tool also means that it is easy to use it in an unthinking or non-critical way. In this regard, Kenny (2022) found a similar problem about Neural Machine Translation (NMT) output, which can be fluent but inaccurate. When a translation looks and sounds good, people may neglect to check its compatibility with the source text (Kenny, 2022).

Moreover, many expressed concern about learners' over-reliance on MT (R1, R5, R7, R11). They iterated that learners should avoid relying solely on MT and ought to use it at word level only. R9 said she would accept the use of MT at phrase level but paragraph and full-text level translation would be unacceptable. This echoes findings of many previous studies which show instructors to hold a negative impression of MT, mainly because they believe learners would rely on it and become overconfident in MT output (Ata & Debreli, 2021; Rico & Pastor, 2022; Yi & Choi, 2015). Instructors primarily caution against relying solely on MT as it can compromise sentence accuracy and deviate from intended meaning due to various factors, including cultural connotations and contextual situations (R1, R7, R12).

The concept of MT literacy has been introduced by Bowker (2019) based on digital translation literacy. MT literacy is primarily a cognitive issue, not a technical procedural one. Using MT is easy; using it critically requires some thought. Therefore, in addressing this learners' degree of MT literacy is particularly important, when pertaining to problems such as reliance on MT, or inappropriate use of MT. It will allow learners to be cautious in using it as a learning tool, not just a tool for completing assignments.

In terms of the ethicality of MT at full text level, varied responses were recorded. Some instructors deem students' output to be unethical or equivalent to cheating (R9, R10, R14, R15) as it is inappropriate (R8) and interferes with the process of language learning (R11), while some do not equate the use of the tool as tantamount to cheating (R6, R4, R5, R7). As R7 explained, a script created in English or Malay does not qualify as plagiarism if it is run through MT as it is a mere tool of translation. R4 explained this further: 'I don't prefer if they just copy the whole thing and don't even understand when they read it without MT.' R6 also shared similar sentiments: 'My basic rule with MT is if you are going

to use it, you must know what it is saying. If you understand, then I won't consider it cheating.' This is indicative of inconsistent views on whether MT is considered unethical or equal to cheating as instructors' individual stance is often based on conditions and circumstances.

Ali et al. (2012) found that many students have a vague understanding of plagiarism. Kim and LaBianca (2018) discovered that both students and instructors lack consistency in their ethical considerations when using MT for sentence and discourse-level help, which depends on specific contexts and expectations. Similarly, Jolley and Maimone's (2015) study revealed that instructors' opinions on the ethicality of MT are situational (82.05%). Gullifer and Tyson (2010) also argued that traditional university approaches to defining plagiarism are insufficient in the era of widespread use of MT. As a result, researchers have called on institutions and instructors to provide clear guidelines, such as documented manuals or guidelines, to help students navigate the ethical use of MT (Kim & LaBianca, 2018; Pecorari, 2015; Pecorari & Shaw, 2012).

B. Adapting Teaching and Assessments Within Widespread Use of Machine Translation

TABLE 4
ANALYSIS OF INSTRUCTORS' COPING MECHANISMS

| | Valid | Mean | Std. Deviation |
|---|-------|------|----------------|
| Able to detect when learners use MT as an auxiliary tool in writing tasks | 127 | 4.28 | .833 |
| Able to detect when learners use MT as an auxiliary tool in writing assessments | 127 | 4.20 | .836 |
| Allow and consent to the use of MT as an auxiliary tool in completing writing tasks | 127 | 2.98 | 1.069 |
| Allow and consent to the use of MT as an auxiliary tool in completing writing assessments | 127 | 2.49 | 1.167 |
| Always remind learners to use MT as an auxiliary tool with caution | 127 | 3.28 | 1.401 |
| Frequently discuss with learners the advantages of using MT as an auxiliary tool | 126 | 2.77 | 1.208 |
| Frequently discuss with learners the limitations of using MT as an auxiliary tool | 127 | 3.57 | 1.138 |
| Frequently discuss with learners the specific errors made by MT as an auxiliary tool | 127 | 3.57 | 1.110 |
| Often encourage learners to use MT as an auxiliary tool | 127 | 2.45 | 1.044 |
| Often guide learners on how to use MT as an auxiliary tool | 127 | 2.68 | 1.154 |
| Often use MT as an auxiliary tool in language instruction | 127 | 2.38 | 1.054 |
| Include hands-on practice on MT as an auxiliary tool | 127 | 2.13 | .946 |

Instructors have also had to make adjustments to varying degrees. The majority contend to have high confidence in their ability to detect learners' use of MT for writing tasks (4.28) and assessments (4.20). When asked whether they were able to detect learners' use of MT, 14 out of 15 said they had detected and had found learners to use MT in completing writing tasks or assessments, diagnosed through choice of words and sentences in assignments. If beginner level learners use vocabulary not learned in class, it means that they have used MT. For example, a comment in one of the learners' assessment assignments (see Figure 1) is: 'The grammar used in first 2 pages are basic/reflective of what we had learned in our class. *This section is clearly an MT. Difficult kanji & complex sentence we have not learned' (R6).

一トは Teluk Baru Jetty から しゅつぱつ します。アイランドホッピ
 ングの にんきの 場所は Pulau Dayang Bunting と Pulau Beras Basah
 と Pulau Singa Besar です。Pulau Singa Besar は ゆめいな わしの ふる
 さとです。 *the grammar used in first 2
 pages are basic/reflective of
 what we ha learned in
 our lessons.

* This section is clearly
 an MT. Difficult kanji &
 complex sentence we have not learned

Figure 1. Instructor's Detection and Comments of MT in Learners' Work (Sample 1)

R7, who teaches Mandarin, said that when she found the awkward and unnatural translation, she knew it was from MT. From the information shared, it was found that she would revise the incorrect translations (see Figure 2). For example, she edited written words: “Shì a, kěnéng zhōngguó xīnnián qīngzhū jiérì kuài dào le” to conversational words: “Shì a, kěnéng huárén xīnnián kuài dào le!” (Yeah, perhaps Chinese New Year is coming soon). Basically, correction was also based on the Mandarin textbook. From here, we see that learners rather copy the results of MT than to refer to the textbook.

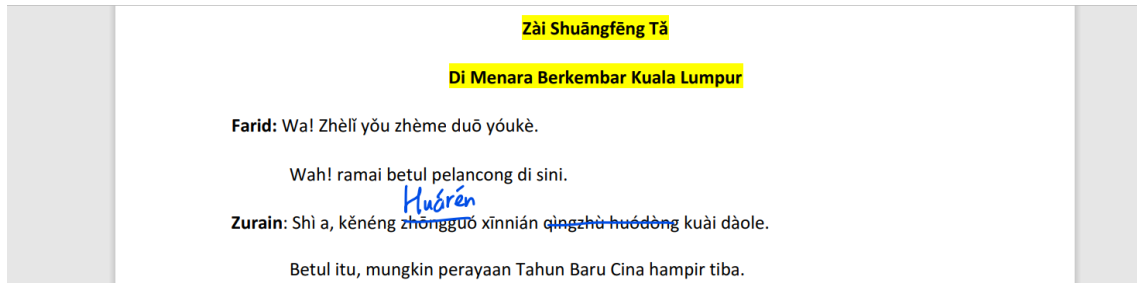


Figure 2. Instructor's Detection and Comments of MT in Learners' Work (Sample 2)

R8, who also teaches Mandarin, took a screenshot of the answers of learners' online assessment. The question shows the pinyin of the word “bómǔ” (aunt, dad's brother's wife), but the learner's answer is replaced with the pinyin of the word “gūgū” (aunt, dad's sister) (see Figure 3). Obviously, the learner did not understand that MT is unable to translate Malay words due to the complex kinship relationship in Chinese. The learner did not understand the meaning of the vocabulary, hence, accepted the output of the MT.



Figure 3. Instructor's Detection and Comments of MT in Learners' Work (Sample 3)

In Bowker (2020), language trainers cited academic integrity related to the use of MT as an important issue to be addressed. Although documented evidence is available on instructors discerning MT use, this may primarily occur among low proficiency learners as substantial evidence from advanced learners is lacking, albeit instructors' strong beliefs pertaining to this. It can be speculated that some instructors may have overestimated their ability, as previous studies showed that instructors are actually unable to effectively detect learners' use of MT (Henshaw & O'Neill, 2021; Stapleton & Leung, 2019).

In mitigating the widespread use of machine translation, most instructors do remind learners to utilise MT with caution (3.28), communicate limitations to their learners (3.57), or highlight specific errors (3.57) of MT to learners.

R6 highlights that learners struggle to use machine translation effectively as they often fail to appreciate the need for careful attention. Instead, they feed sentences without much thought and wait for the output. R6 advises breaking down complex sentences into shorter parts to improve translation, by providing an example: “this is important because it helps people” can be split into “this is important” and “it can help.” As a language instructor, R6 empathizes with the challenges faced by learners and recommends starting with simpler sentences before relying on machine translation.

Additionally, R2 warns students by citing errors in translation machine output. She indicated that small mistakes of the output can result in vastly different meanings, such as “chīfàn” (to eat) and “chī mǐfàn” (to eat rice), which may be beyond the understanding of beginners. R2 emphasizes the term “kekurangan” (shortcomings) in her PPT (see Figure 4) to underscore the limitations of machine translation.



Figure 4. Highlight Specific Error(s)

When asked about how they adjust their teaching methods, most said that they would advise students not to wholly rely on MT (R2, R10, R11, R15) and would also provide some guidelines, for example, limit the use of MT only for particular assignments (R2), or to limit its use within the scope of vocabulary (R6 & R11) and short sentences (R5). Some instructors would try to explain the benefits and pitfalls of MT to raise awareness on its effects (R1, R2, R7, R13) and its limited capacity for providing accurate translation (R7). For example, R8 would recheck the translated work while R10 said all the assignments would require plagiarism check setting. A number of respondents (R4, R6, R11, R14) would attempt to enhance learners' language skills by giving more notes, exercises, explanations and examples, so learners would be able to limit their dependence on MT.

Various other coping mechanisms were also shared. The instructors said they would recheck learners' work by using anti-plagiarism tools (R8, R10, R11, R12), or request learners to redo the work (R1, R2, R3, R9). As R1 explained:

I ask students to submit the assessment task two weeks earlier than the date set in the academic calendar so that I can check it. If I found there is a part that uses machine translation entirely, that part needs to be corrected.

Another coping method is by adjusting the marks (R6, R9): 'Paragraphs that have clearly used MT without any edits (just copy paste) will have marks deducted during writing assessments' (R6). R14 said she would adjust the assessments according to the situation: "Assignments given to students will change according to the current situation. For Arabic, the assignment given now is not only the script but the construction of a video that requires students to speak 100% in the language learned" while R5 request learners to submit the raw materials for their Japanese assignments.

However, in contrast, the advantages of using MT in language writing (2.77) are not regularly discussed with learners. Only a small number encourage learners to use MT in language writing (2.45) or do guide learners on how to use this tool to aid their learning (2.68). Very few instructors use MT in their own language instruction (2.38), or include hands-on practice on MT as an auxiliary tool (2.13). This shows that although instructors agree on the need for guidance in using MT, guidelines and skills are rarely incorporated into teaching. More often, they exercise either authoritative approach or display passive attitude in coping with learners' use of MT. For example, they would tell students the disadvantages of MT or simply limit its use, instead of providing guidance in using MT in a positive way, such as by including hands-on practice in class, or encouraging MT in autonomous learning and self-learning - a case synonymous with studies by Delorme Benites et al. (2021) and Loock et al. (2022). Delorme Benites et al. (2021) revealed that only 4% of instructors explain to their students how MT works and of its potential and risks, less than 10% of instructors and students claim that official guidelines, training or explicit instructions on MT exist at their institutions. Loock et al. (2022) liken such a situation to the elephant in the classroom, that is, students use it, and trainers know that the students utilise it, but do not conduct any specific training. The reasons behind this need to be investigated. The presumption is that instructors may not be literate in the use of MT; they relied on physical dictionary translation in their days of learning. Many studies have highlighted the need for guidance on MT, with particular emphasis on instructor guidance of learners in the classroom. As Bowker (2019) emphasises on MT literacy, what we need to teach is not the way to use MT, but the attitude with which it should be used, critically and professionally. Some worry that the adoption of new technologies could be disruptive or even threatening (Delorme Benites et al., 2021; Yamada, 2019).

The dilemma of lack of MT training is not limited to language instructors per se, but also to professional translation course instructors who do not receive MT training (Rico & Pastor, 2022). Therefore, instead of assigning instructors with teaching tasks, it is appropriate that the institution solves the problem first. Some institutions have worked with libraries to provide a way to reach and educate a wide range of MT users (Bowker, 2019). The study by Ata and Debreli (2021) indicated that language learning institutions should develop policies to guide students in the use of MT and to improve mutual understanding between students and instructors in terms of ethics. Other scholars have emphasised the need for machine translation literacy among learners (Bowker & Ciro, 2019) as well as instructors (Bowker, 2020).

V. CONCLUSIONS AND RECOMMENDATIONS

This study has found that instructors condone MT as long as learners understand the content of the tasks they submit. Learners who lack MT literacy regard it as an object to complete their assignments rather than a learning tool. Kazemzadeh and Kashani's (2014) analogy on GPS for navigation is pertinent - MT can help you reach your destination but it does not train you how to move from one point to another autonomously. The biggest crisis is the language learner may lose the ability to think independently and autonomously as MT can either be a stepping stone for autonomous learning or it can become a stumbling block. MT's use in higher education has impacted language learners' learning styles, and instructors are encouraged to assist them. However, little is known about language instructors' perceptions and adaptations to this phenomenon. Thus, this study has focused on the beliefs of language instructors about learners' use of MT in second or foreign language writing tasks and assessments. The study has also investigated the extent to which teaching approaches and assessments are adapted in view of its widespread use. Quantitative and qualitative data were collected from 127 instructors at an institution of higher learning in Malaysia, via questionnaire and semi-structured interview. The results of this study lead us to four major conclusions. First, most second or foreign language instructors in higher education understand both the benefits and flaws of MT and worry about learners becoming too reliant on it. To prevent this, instructors should encourage learners to use MT as a stepping stone for learning foreign languages and developing autonomy. They should focus on stimulating motivation, improving critical thinking, and promoting the value of mastering multiple languages. Learners may not feel motivated to learn a language when MT is readily available, so instructors must highlight the benefits of multilingualism and multiculturalism. Second, it is common for instructors to adopt either an authoritative approach or a passive attitude when dealing with learners' use of machine translation (MT), despite recognizing the importance of guiding learners in its appropriate use. Most instructors do not include guidance on the appropriate or skillful use of MT in language courses, hence, they require training before they can better develop MT literacy amongst their learners. Thirdly, most instructors are also inconsistent and hold differing views on the extent to which the use of MT in writing tasks or assessments defines plagiarism. Therefore, guidance or manuals for MT use is necessary. Fourth, most instructors do not adjust their teaching strategies, writing tasks and assessments in response to the widespread use of MT. The future use of MT in assignments and assessments should be like the use of calculator in advanced mathematics, which is a tool, not a machine that gives answers, that is, assignments and assessments need to be more appropriately adapted so that even if learners use MT in the process, it is for the purpose of the assignment and assessment and not as cheating, as Correa (2011) suggested, while training and guiding learners, instructors also need to design cheating-proof assignments and guide students to avoid unintentional plagiarism. Assessment of student learning focus on the process of meaning making and learning using technology, rather than just a set of post-test scores (Chun et al., 2016). Instructors need to be trained and equipped with the cognitive skill of MT literacy (Bowker, 2020) to become more capable and confident in making adaptive adjustments in instructional design. Using MT is easy but using it critically requires some thought. When faced with free online MT, the important question is not how to use, but rather, when, and why to use the technology. Other follow-up studies on MT literacy have also shown an urgent need at this stage to include it into efforts of improving digital literacy among instructors and students (Delorme Benites et al., 2021; Looock & Léchauguette, 2021). Instructors could help learners use MT for learning by assisting each individual to pursue an autonomous, diverse and life-practice approach to language acquisition. However, relevant training is generally only provided in specialised translation training programmes, often not incorporated into foreign language teaching methods courses (Jolley & Maimone, 2015). It is hereby recommended that MT be incorporated into the language curriculum, and provide specific training based on use and needs. This study has limitations as it only offers an initial exploration of how instructors perceive and adapt to the use of machine translation in foreign language classrooms. The specific teaching strategies employed by instructors for this phenomenon are still being investigated. While we have analyzed a broad group of second or foreign language instructors, it's possible that their language, target audience, academic background, and teaching experience may influence their perceptions of MT in language learning. Further research is necessary to address these factors.

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Ya Ling, Lew is a senior lecturer at the Academy of Language Studies, UiTM Perlis Branch, Malaysia. Her research interests include teaching Chinese as a foreign language, Malaysian Chinese literature, and Chinese Buddhism literature.

Naginder Kaur is an associate professor at the Academy of Language Studies, UiTM Perlis Branch, Malaysia. Her research interests are on autonomous learning, vocabulary instruction and ESL Writing.

Huzaifah A Hamid is a lecturer at the Academy of Language Studies, Universiti Teknologi MARA Perlis Branch, Malaysia. She received her Master of Linguistics from University of Malaya, Kuala Lumpur in 2014. Her research interests include systemic functional linguistics and critical discourse analysis.

Foo Terng, Hoe obtained his PhD in Chinese Studies at Universiti Tunku Abdul Rahman, Malaysia and is an associate professor of Academy of Language Studies at UiTM Penang Branch, Malaysia. His field of study is teaching and learning of Mandarin as a second language. He is also interested in lexicography and Malaysian Chinese cultural studies.