

Ya Ling Lew

UiTM Perlis Branch, Perlis, Malaysia

Naginder Kaur

UiTM Perlis Branch, Perlis, Malaysia

Huzaifah A Hamid

UiTM Perlis Branch, Perlis, Malaysia

Foo Terng Hoe

UiTM Penang Branch, Pulau Pinang, Malaysia

GUIDING LEARNERS IN USING MACHINE TRANSLATION FOR SECOND AND FOREIGN LANGUAGE LEARNING: THE CASE AT MALAYSIAN HIGHER EDUCATION

Abstract. This study examines the instructional methods employed by university educators in Malaysia to facilitate learners' use of machine translation (MT) in acquiring second or foreign language. The research aimed to delineate the effective strategies and techniques employed by instructors to steer learning, while also finding out the challenges and obstacles encountered throughout the instructional process. The researchers used a case study approach involving observations and interviews with four university instructors who incorporated MT into their second and foreign language classes. They were observed three times for the duration of one semester (14 weeks). Teaching observations focused on how the instructors guided learners in using MT with different strategies and techniques. At the same time, learners' reactions were also recorded accordingly. It was found that instructors used several strategies and guidance methods such as drawing comparisons and parallels between MT and textbook output, carrying out whole class discussions and providing oral feedback on MT output. Additionally, direct instruction, oral guidelines, confidence building, and small group discussions were tapped upon for optimum intended learning outcomes. In implementing these strategies, instructors confronted several challenges, namely, learners' inability to use effective contextual translation and limited knowledge in discerning accuracy of MT output. Instructors also noted the learners' reckless use and sparse awareness of MT literacy. The study postulates the imperative need for both instructors and learners to enhance digital literacy. This will enable instructors to adeptly steer learners in leveraging MT for learning purposes, while empowering them to employ MT judiciously, to comprehend its constraints, and to integrate it synergistically with other language acquisition methodologies, thereby fostering enhanced learning outcomes. The study has implications for language educators and curriculum designers interested in incorporating technology into language teaching and learning.

Keywords: second language learning; foreign language learning; machine translation; teaching strategies; challenges.

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Background

The field of language technology has witnessed significant advancements, leading to the widespread use of tools such as machine translation (MT) in the learning process of second and foreign languages. Within higher education institutions, MT has become a common tool employed by foreign language learners. In today's globalized and modern world, it is both unrealistic and unacceptable to disregard the use of advanced writing assistive tools, given their widespread availability and integration (Hellmich & Vinall, 2021). As such, it is essential for instructors to recognize MT as a valuable teaching tool and embrace its use, instead of dismissing or prohibiting its application. Numerous studies emphasize the importance of integrating MT teaching in the classroom (see Hellmich & Vinall, 2021; Lee & Briggs, 2021; Lew & Kaur, 2021) and fostering MT literacy as a means for learners to engage with MT critically (Bowker, 2020). By cultivating MT literacy, learners gain the ability to utilize technology thoughtfully and discerningly, making it a valuable complement to their language learning toolkit.

However, a notable research gap remains on effective implementation of MT teaching in second and foreign language class. Hellmich and Vinall (2021) caution against over-promoting the use of Google Translate (GT) in the foreign language learning, highlighting the potential risk of fostering a reductionist perception of language among instructors and learners. This reductionist perspective views language to comprise unique codes fit for literal translation to another language (Ryu et al., 2022). It is imperative to ensure that these artificial intelligence (AI) writing tools do not distract learners from the communicative purpose of writing. Instead, their interaction with these tools should be seamlessly integrated into a comprehensive language program that equally values effective communication skills. Huang and Wilson (2021) argue that while AI can contribute to the development of learners' writing ability, it should assume a supporting (complementary) role rather than taking the lead.

Within the context of MT teaching, limited research exists regarding the effective strategies and techniques that instructors can employ in second or foreign language classrooms. Li (2021) highlights the under-researched area

of teachers' role in technology-enhanced classrooms, where more attention is often placed on the tools than instructors. Particularly, the use of a machine tool can significantly influence the learning and teaching process, necessitating an understanding individual differences and characteristics among teachers and learners. This raises important research questions: What teaching strategies and techniques do instructors employ to guide learners in using MT for second and foreign language learning? What challenges and obstacles do instructors encounter during this guiding process?

To address these research gaps and challenges, this study focuses on a comprehensive case study involving four second and foreign language instructors from a Malaysian higher education institution. By examining the perspectives and experiences of these instructors, this research aims to provide insights that will inform the effective integration of MT tools into language teaching methodologies. Understanding the challenges faced by instructors will contribute to the development of appropriate strategies and techniques that ensure successful MT teaching.

Research Objectives

1. To identify the type of teaching strategies and techniques used by university instructors to guide learners in using MT for second and foreign language learning.
2. To investigate the challenges and obstacles encountered by university instructors when guiding learners to use MT for second and foreign language learning.

Research Questions

1. What type of teaching strategies and techniques do university instructors use to guide learners in using MT for second and foreign language learning?
2. What challenges and obstacles do university instructors encounter when guiding learners to use MT for second and foreign language learning?

Literature Review

The digital transformation of language education in the 21st century aims at enhancing learners' efficiency using the latest digital tools (Cerdá Suárez et al., 2021), such as artificial intelligence (AI) and MT, which have been utilized in language teaching and learning (Kirov & Malamin, 2022; Lee, 2020). However, learners may encounter issues with these digital tools, including a lack of confidence and the accuracy of MT (Hellmich, 2021; Musk, 2022). Therefore, research has discussed effective ways for teachers to incorporate MT into the classroom.

Strategies and Techniques for Guiding MT Use

To effectively integrate MT into language courses, Deng and Yu (2022) suggest that teachers establish integration procedures, starting with an introduction, followed by demonstration and task assignment, and ending with reflection. This process includes introducing learners to the tool and its role, highlighting ethical considerations, and its advantages and disadvantages (Rowe, 2022; Xu, 2020), demonstrating and guiding learners in using MT (Ross et al., 2021), and incorporating MT use into classroom activities to encourage peer interaction (Rowe, 2022).

Instructors can adopt a variety of teaching strategies when incorporating MT, namely, highlighting the strengths and pitfalls of MT tools by varying the types of translation activities, providing sufficient training in utilizing these tools and making learners acquainted with other online resources (Hellmich, 2021). These suggestions also aim to make MT an integral learning tool widely used by learners. It is therefore necessary to increase its accuracy and allow its use in the language learning classroom. Understanding how learners engage with MT could lead to the development of more tailored pedagogical strategies that reflect specific learner practices (Hellmich, 2021).

Challenges and Obstacles in Implementing MT in Language Education

Language instructors face multiple challenges and obstacles when integrating MT in language learning. One key predicament is that machines are often unable to accommodate language learners with low proficiency levels. Beginner-level learners may heavily rely on MT, neglecting their own language development. While previous studies have highlighted the numerous benefits of MT, including enhanced accuracy (O'Neill, 2016; Tsai, 2019), increased meta-linguistic awareness (Enkin & Mejias-Bikani, 2016), and reduced anxiety (Bahri & Mahadi, 2016), most studies have shown that these benefits are mainly derived by advanced learners compared to low language ability learners (Larson-Guenette, 2013).

Research conducted by Kol et al. (2018) on MT output awareness and correction tasks reveals that advanced learners are more adept at identifying and correcting mistakes than intermediate learners. Similarly, Niño (2020) found that learners with high language proficiency are more aware of their own language capacities and the strengths and weaknesses of MT than those at the intermediate and low levels in oral and written comprehension tasks. Therefore, instructors need to make learners aware of the limitations of MT and teach them how to evaluate MT and edit its output accordingly.

In addition to addressing the challenges related to learner proficiency, instructors must also consider the ethical implications of using MT. While there is growing interest in incorporating MT into language teaching approaches, teachers need to ensure that learners use this technology responsibly. An exploratory study by Stapleton and Leung (2019) found that avoiding the use of Google Translate in foreign language learning is essentially no longer possible, yet, tapping on it results in a dip in motivation in foreign language reading and writing due to easy availability and access to translation output. Similarly, Hellmich's (2021) study on novice learners of French as a foreign language revealed that teachers expressed concerns about learners using MT to cheat or overly rely on it for writing. Therefore, instructors should teach learners how to cite and reference translated text properly to help them

understand the potential consequences of using MT inappropriately, resulting in unethical academic conduct like committing plagiarism or copyright infringement.

Digital Literacy: Attitudes Towards MT in Language Education

Beyond MT, language teachers and learners need to possess digital literacy to navigate the rapidly changing landscape of information and communication technologies. According to Dudeney and Hockly (2016), digital literacy is “the ability of people to know how to operate these technologies, and to use them safely, wisely and productively” (p. 115). Digital literacy encompasses more than just technical skills. It also requires the ability to adapt to one's purpose and involves the mastery of ideas, not mere use of technology, as noted by Tang and Chaw (2016).

MT literacy, as a form of digital literacy is primarily a cognitive concern rather than a technical one. To be digitally literate, learners must not only know how to search for information online but also have the ability to comprehend and collect information from various print or digital sources (Tang & Chaw, 2016). Digital literacy encompasses more than technical know-how; it requires the ability to adapt to one's purpose. Tang and Chaw (2016) note that digital literacy is distinct from technological skills and involves the mastery of ideas, and not only the use of technology. Therefore, the ability to effectively use MT for learning – for professional and personal development is a form of literacy, as highlighted by Dudeney and Hockly's (2016) example of Facebook.

Over the past two decades, digital literacy has received extensive attention in language education research, with focus on the level and perception of digital literacy, the use of digital literacy to enhance language competencies, and the development of strategies to improve digital literacy skills. For instance, Iskandar et al. (2022) highlight the integration of digital literacy in real academic digital practices of English language teaching through five stages:

First, identify the components of digital literacies and the authentic academic digital practices and products. Second, analyse

the descriptors of digital literacies components pertaining to authentic academic digital practices and products. Third, integrate the descriptors of digital literacies into learning outcomes. Fourth, embed digital literacies into academic products. Fifth, employ authentic academic digital practices in the learning process, and assess digital literacies as cross-curricular competencies (p. 84).

Moreover, language learners must develop digital and participatory literacy skills too, not only to develop linguistic and pragmatic knowledge but also to critically engage with the culturally coded connections among forms, contexts, meanings, and ideologies across various material mediums (Chun et al., 2016). However, despite the increasing importance of digital literacy in language education, there are still significant barriers that prevent learners from fully utilizing this skill owing to lack of digital literacy experiences among young learners and instructors of English as a Foreign Language (EFL), and different levels of comprehension among different learner profiles. These, in turn lead to hindrance in effectively utilizing digital tools (Mudra, 2020). In enhancing the quality of digital literacy in the English language teaching (ELT) curriculum, several approaches have been postulated through more structured participation in preferred online spaces, embedding digital literacy in the language curriculum, introducing digital multimodal composing projects, and tele-collaboration or virtual exchange projects (Hafner, 2019). The instrumental role of instructors at higher education is also pivotal in promoting digital literacy, whilst developing technology infrastructure, technology pedagogy of instructors, with more attention and focus from policymakers alike (Akayoğlu et al., 2020).

Finally, while young learners may have the ability to manipulate digital technology, there is little evidence that they possess the skills to transform its practical and social uses into more rigorous, pedagogical ones (Dudeney & Hockly, 2016). Therefore, users need training to effectively, reflectively, and critically use new media in online learning spaces (Hampel, 2014). Despite the challenges, integrating digital literacy as a cross-curricular ability into language teaching curricula remains essential (Iskandar et al., 2022).

Methods

The aim of this research is to investigate the teaching strategies and techniques as well as challenges and obstacles associated with guiding learners to use MT for second and foreign language learning at higher education in Malaysia. To achieve this, the researchers used a mixed-methods approach involving case studies, observations and interviews.

Respondent Details

The sample for this research consisted of 127 instructors from an institution of higher learning in Malaysia who participated in a questionnaire survey. The survey aimed to obtain information about the view and strategies related to guiding learners in using MT for learning. Based on the survey responses, four instructors who revealed more positive responses were purposefully selected for in-depth observation (see Table 1).

Table 1

The Four Selected Respondents

Instructor	Gender	Age	Teaching experience	Language taught	Learners' level	Number of learners
R1	Male	41	10 years	Mandarin	Beginners	18
R2	Female	34	6 years	Mandarin	Beginners	15
R3	Female	40	15 years	English	Intermediate	35
R4	Female	50	30 years	English	Advance	32

The four instructors were required to select a class and integrate MT content into their teaching for the duration of the full semester. The research team observed each instructor three times and recorded their teaching strategies, guidelines used, and their learners' reactions. The lessons were video-recorded and field notes were taken. Relevant data, including course documents, handouts, writing tasks, and assessments were also collected.

Research Procedure

The observation process consisted of three parts. Firstly, a writing assignment was given to learners in order to gauge their predisposition towards using MT. The instructors did not specifically relate this task to MT and learners were allowed to complete the assignment in their own way. After submission, the instructors checked the extent of MT use (if any). This phase aimed to gauge learners' inclination towards MT use and understand their initial approach in completing writing tasks. Subsequently, at the following class, MT was integrated in the teaching process, and researchers observed how instructors discussed MT with learners. We focused on understanding the challenges and obstacles faced by both the learners and instructors during this integration. Teaching strategies employed by instructors were documented and field notes were taken on how they addressed potential issues arising from the use of MT. Finally, learners were tasked with an assignment involving the use of MT. The researchers observed how these instructors designed and assessed the tasks. The goal was to identify effective strategies for guiding learners in using MT for learning.

After observation process, individual post-observation interviews were conducted with each instructor to identify the challenges and obstacles they faced during the guiding process. The observation data and interview data were analyzed using thematic coding with Nvivo. In a qualitative study, content analysis is a spiral, iterative and explanatory process (Creswell, 2013). Thematic coding was employed to analyze observation data and the interview transcripts in our research. This qualitative data analysis approach aimed to identify challenges, obstacles, and teaching strategies related to guiding learners in using MT for writing. Braun and Clarke's (2021, as cited in Kaur & Chowdhury, 2022, p. 135) principles for reflexive thematic analysis were adopted which captured patterns in qualitative data via six iterative and recursive stages namely, data familiarization, data coding, generating initial themes, developing and reviewing themes, refining, defining, and labelling themes, and writing the report.

Initially, our team thoroughly reviewed the data, gaining a comprehensive understanding of its content. Descriptive labels or codes were

then assigned to segments that captured central ideas, concepts, and patterns aligned with our research objectives. The codes represented themes, namely, instructor strategies, instructor challenges, and MT integration. Once coding was complete, we explored the data to identify recurring themes, patterns, and significant findings. Relationships between codes were examined, comparisons were made across different instructors, ensuring that interpretations were aligned with the research objectives. Using NVivo for thematic coding facilitated efficient data organization, analysis, and visualization. The software helped in data management, code application and retrieval of specific segments for further analysis or comparison.

Figure 1

Sources for Answering RQ1 and RQ2

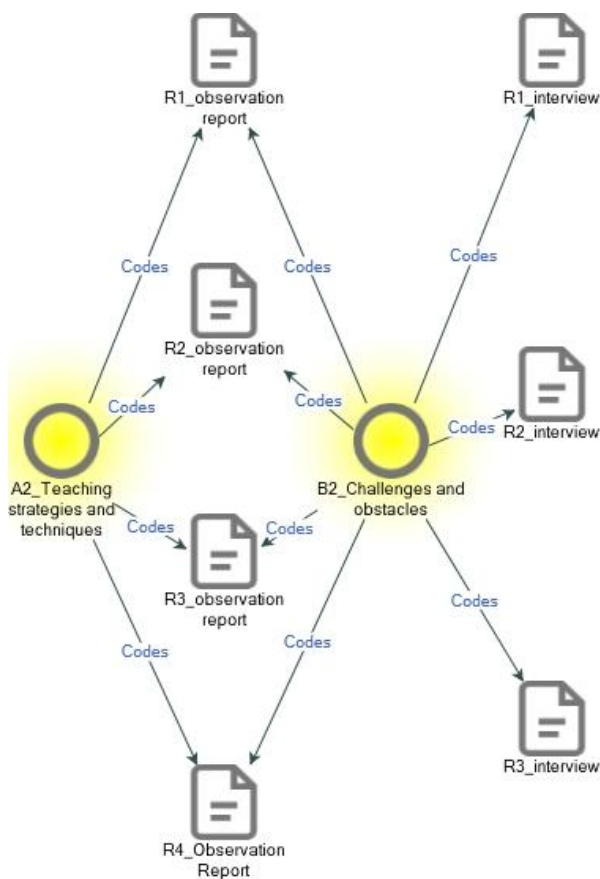
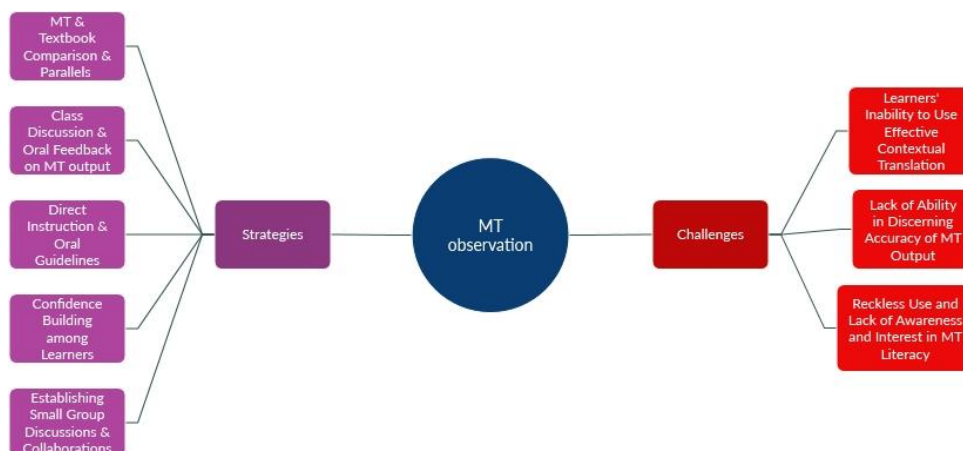


Figure 2

Results of Answering RQ1 and RQ2



Results

In the following section, the two research questions and objectives of the study are presented based on the salient themes that emerged from the data. It was found that instructors employ several key strategies in guiding learners in using MT. The challenges encountered are also broadly categorized into three broad themes.

RQ1: Instructional Strategies and Techniques for Guiding Learners to Use MT

Based on the observations, it is evident that the four instructors used several teaching strategies and guidance methods in the classroom to help learners use MT effectively in their language learning process.

MT and Textbook Output Comparisons and Parallels

For foreign language classes such as Mandarin, instructors tend to use parallels and comparative teaching strategies when teaching learners about

MT. The two Mandarin instructors compared MT output with sentences from the textbook. R1 carried out an activity of writing samples with MT. Learners were required to find similar sentences from their textbook for comparisons with MT. The intended objective was to enable learners to detect MT errors with suitable justification(s). Similarly, R2 assigned a similar task of getting learners to translate five instructor-selected sentences to Malay (L1). These translations were subsequently translated to Mandarin with MT. The objective was to raise learner awareness about similarities and differences in the original sentence(s), and pitfalls of double translation approach, allowing learners to see different presentations of textbooks and MT.

Class Discussion and Oral Feedback on MT Output

Compared to second language (English) instructors, Mandarin instructors detected more MT errors through classroom discussion. The instructors shared that classroom discussion and feedback is preferred as it deepens learner understanding and enables instructors to gauge this. During class discussions, the instructors gave examples to help learners understand the importance of correct input methods when using MT and to consider MT output before using it.

R2 shared an example in class: *Saya tinggal di perak*, which was translated by MT as *Wǒ zhù zài yín* (I live in silver), sparking a dose of humour in the lesson. The instructor further explained, "MT doesn't know that Perak is the name of a state in Malaysia. Of course, it also has the meaning of metal/silver ... Why did MT give the wrong translation?" The instructor further reminded learners to be mindful of feeding sentences by paying attention to uppercase, lowercase and punctuation. Since MT is case-sensitive, if 'p' is not capitalized, the outcome is distorted. The instructor further debriefed and reassured the learners, "I have tried, if your 'P' is capitalised, it can give you the correct translation which is *Wǒ zhù zài pīlì* (I live in Perak)."

In another example, when feeding the sentence *Kampung saya di Kangar*, (My hometown is Kangar), MT would yield *kampung* into *cūnzhuāng* (village). R2 explained that the textbook meaning of *kampung* is as mentioned

by learner A – *jiā* (home), or learner B – *lǎojiā* (hometown). Learners were made aware that *kampung* in Malay means both village and hometown, which should be translated as *lǎojiā* (hometown). R2 further explained, "Machine translation is a machine, and it can only give you one choice. There is nothing wrong with its translation, but it is not what you want."

The discussion seemed effective in creating awareness on the limitations of MT. However, R1 cautioned that learners had varying reactions to his guidance methods – some responded positively to the questions and explanations, while others remained ambivalent. This suggests that in turn, instructors also need to be aware of various learning styles and language proficiency levels of learners.

Direct Instruction and Oral Guidelines

As an alternative to discussion, direct instruction is another intermittent strategy, but to a lesser effect. The instructors had to constantly remind learners to become independent language learners, and that MT is not a perfect tool by showing examples of MT errors. In an attempt at direct instruction, R1 and R3 explicitly demonstrated the different ways to construct sentences, with or without MT. The explanation of the pros and cons of using MT further helped to improve learners' understanding of using the language. The instructors emphasized the original work and detected parts of the script containing plagiarism of online materials in order to discourage learners from sole MT dependence. The instructors highlighted specific MT errors in learners' role-play scripts to identify common mistakes and misconceptions learners may have. In a translation exercise assigned by R3, specific erroneous translations were highlighted with feedback on the range of inaccuracies in MT output. She further provided oral guidelines for language translation when learners needed to translate text from English to Malay and also compared learner output with MT output, hence, allowing learners the opportunity to practise and develop their translation skills. The learners were able to identify common MT mistakes, such as inaccuracies in semantic meaning and function, and were able to apply instructor guidelines to improve their translations. Thus, learners were able to

develop reading comprehension skills and ability to translate text from target language to their native language (Malay). The instructor highlighted the usefulness of MT for translating individual words or phrases instead of the whole essay and emphasized the need to ensure MT output has similar meaning as original content.

R3 stressed the importance of drawing learners' attention to the shortcomings of using a translator, even before learners begin using it. Although many think that "translators are all things and can't go wrong", the instructor lamented about receiving learner scripts with many inappropriate words and unnatural sentences. R2 made a conscious effort of recording the reasons for mistakes and explaining these one by one to make learners understand why MT sentences are inaccurate. She demonstrated this with examples and solutions, so learners can understand the benefits of translators for Mandarin learning, at the same time "become aware of the inadequacies of translators" (R2). She shared that although some learners were passive and quiet, they understood why MT should not be relied upon completely, given the interest shown in MT errors.

Confidence Building Among Learners

Second language instructors emphasized the need to enhance learner confidence when guiding them to use MT. For example, R3 made learners aware that their translations are sometimes better than MT. R4 believes that learners need to know they can employ various reading techniques to manage MT with own ability, such as guessing meanings from context, cross-checking translation(s) with a dictionary, and, considering other synonyms, to make output as effective as possible, so they can use MT with a discerning eye and mind. Additionally, R4 taught learners the importance of using chunking techniques to manage their work effectively and select appropriate words for translation. Learners' confidence was evidently heightened when R3 asked, "do you think your answer is better than this? ", and learners answered with a thumping "yes!" in unison.

Both R3 and R4 indicated that an important instructional strategy employed was to instill the importance of self-belief and self-confidence in their

own ability when using MT. This is because learners often opt for MT meaning as a quick option and, in the process, their self-belief on their own ability in managing academic texts gets eroded. Hence, learners need to know that they can manage MT by using various self-help tools as iterated by R3 and R4.

Establishing Small Group Discussions and Collaborations

This strategy was also employed by all the instructors, for example, R1 and R2 assigned group role play bilingual scripts – Malay and *pinyin* (romanization system for Mandarin) or English and *pinyin*. Learners were highly encouraged to practise their language skills and work collaboratively with peers.

Group work was also established for other tasks. For second language classes, R3 assigned learners to groups of three or four to translate a Malay transcript to English. In the final task, learners were reassigned to groups of three or four and were required to translate a text from English to Malay. The observation of all three tasks was recorded after obtaining consent from learners and instructors. Evidently, group work was emphasized in the spirit of peer learning, peer support and collaborative engagements for optimal learning outcomes.

In group discussions, learners were found to be more willing to reveal their thoughts than in the whole class instruction. For example, through conversations with R1, we learned about learners' understanding and knowledge of MT. In small groups, learners try to discern the output and are unsure as to whether MT output is appropriate or not. R1 gave an example:

Keluarga saya ada lima orang ahli keluarga. (There are five members in my family.)

Google translation: *Wǒjiā yǒu wǔ gè jiātíng chéngyuán* (There are five members in my family.)

Textbook translation: *Wǒjiā yǒu wǔ gèrén* (There are five members in my family.)

R1 queried the learners, "Does the output of Google Translation (GT) match what is presented in the textbook?" The learners responded, "No, it doesn't." R1 then probed further, "Is the output by Google Translation accurate?" This question was posed to five different groups, none of whom could affirm its accuracy. Nevertheless, learners actively engaged in the discourse, offering explanations such as, "The content isn't covered in our syllabus or textbooks," or "It differs from our prior learning, or we haven't encountered it yet." A small number of learners posited the disparity arises because GT renders written language, which may not always align with spoken language in conversational contexts.

Through back and forth questioning and debriefing with the groups, learners were guided to understand that MT output, although literally correct, may at times be contextually inappropriate due to cultural or contextual use. Small group discussions certainly helped learners in providing more forthcoming responses, avoiding shielding in cocoons.

RQ2: Challenges in Guiding Learners on MT

Inability to Use Effective Contextual Translation

Although MT is generally concurred to be useful in helping learners cope with writing tasks, many face difficulty in using MT for effective and precise contextual use, causing concern among instructors. The narration below is aptly shared by R2, which fully reflects her concern and perspective on incorrect use of MT:

I think learners can use the translator to search for new words, then understand whether the new words are suitable for the required scene, and then create sentences that match their level according to the sentence structure taught by the instructor. But the challenges are, first, the translator cannot select suitable words according to the real situation. For example, the use of polysemous words, different semantic expressions, and the understanding of the contextual

meaning of words will affect the accuracy of the translated sentences, so learners often use words incorrectly.

Additionally, learners also tend to commit syntactical errors by wrongly placing the translated word in the sentence, resulting from lack of familiarity or knowledge of the Mandarin structure, making the entire sentence incorrect. If learners continue to use MT all the time, the instructors fear they may be unable to truly grasp Mandarin structures, and further form irreversible dependency.

Similarly, R4 constantly encounters learners' lack of knowledge in finding contextual meaning when using MT for English language learning. MT is referred to for literal translations, which can lead to errors in writing output, hence, constant errors in learners' translations.

Although MT is useful as a complementary and supplementary tool in learning, learners need to be aware of its limitation in providing literal translation, often devoid of nuances and humanised values in literacy. Therefore, when applying translated words or phrases, learners are sometimes unable to select or reject the words offered by MT. As the selection of correct diction and vocabulary lies with the user, indiscriminate dependence on MT can pose a problem or added challenge (R4).

Inability in Discerning Accuracy of MT Output

In teaching MT, the challenge is how to guide learners to identify inaccurate translations. If learners cannot identify inaccurate translations and just do verbatim copy of MT output, it is counterproductive. The problem is compounded by the fact that learners are generally unable to establish the accuracy of translation if the word is unavailable in the textbook, hence limited to restricted textbook knowledge. For example, in one of the classes, R1 asked if the MT output was correct as what had been taught. None of the groups could provide an affirmative response, most remained uncertain, with responses like, "Because they are not in the syllabus/textbooks; It's different from what we learned/we haven't learned it yet." In eliciting responses for the next vocabulary item, the instructor probed whether *huáyǔ*

or *pǔtōnghuà* was similar or correct. Again, learners were unsure, as in the previous case, but more of them were inclined towards *huáyǔ*, only because the word is found in the textbook. The same was experienced by R2, when explaining that some translations are acceptable although they may be different from what is available in the textbook. R2 requested learners to translate a sentence from the textbook to Malay and then used MT to convert it back to Mandarin. The original sentence was "*kànlè diànyǐng, wǒ hé péngyǒu qù chīfàn*" (After watching the movie, I went to eat with my friend.), but the MT output was "*kàn wán diànyǐng, wǒ hé péngyǒu qù chī mífàn*" (After watching the movie, I went to eat rice with my friends). The learners were divided in their opinions on the accuracy of this translation. The instructor clarified that the first half of the sentence was indeed correct, demonstrating that certain alternative translations can still be considered valid, even if they differ from the textbook. However, the teacher also noted an error in the second half of the sentence. The use of "*mífàn*," referring to "white rice," was incorrect in this context. It differed from the intended meaning of "*chīfàn*" which means to eat a meal. However, learners often do struggle to discern discrepancies and errors within MT outputs, despite diligent attempts in doing so.

Another example is illustrated below from the excerpts shared by R3:

Original: Nuro is working towards an autonomous solution for last mile and local delivery services.

Translated learner output: Nuro was a company that solves autonomous problems by

An autonomous solution means a solution that is comprehensive and non-limiting. However, MT yielded results of autonomous problems which suggests that the "autonomous problems" are in need of a solution. When MT is employed indiscriminately, the resultant distortion of meaning impedes learners' ability to discern lexical / semantic accuracy.

As highlighted by R3, a significant challenge in MT education lies in facilitating learners' ability to recognize inaccuracies. Given that failure to identify such inaccuracies may lead learners to uncritically adopt machine-

translated content, this approach is unlikely to foster meaningful learning outcomes. However, it is undoubtedly a big challenge for instructors to improve beginning or novice learners' ability to recognize inaccuracies in MT output.

Reckless Use and Lack of Awareness and Interest in MT Literacy

In comparison to English language instructors, Mandarin instructors were found to be more ambivalent about using suitable teaching techniques, particularly in dealing with plagiarism among learners. For this reason, R1 insisted that all assignments be run for similarity index check to detect extent of plagiarism. To prevent learners from copying homework of their seniors, some instructors (R2, R3) also require learners to discuss the outline of role play scripts in class before reporting to the instructor. If the theme of final submission is different from what they had reported, a potential problem can be diagnosed.

The instructors believe that although learners are aware they should not depend fully on MT, some continue to use it without caution and adequate checking. For example, learners became overly dependent on MT, even when the instructor (R1) had not suggested it. Many used it to submit their writing tasks, even to the extent of translating full texts with MT. R1 and R2 shared that despite teaching and attempting to instill awareness on how to use MT, learners hold reckless or callous attitude towards it; they may not weigh the extent they would learn, or if they would learn anything, as long as homework is submitted accordingly. The biggest challenge is lack of self-awareness, which is a matter of concern, as many do not think twice about using a translator – little thought is given to the deep aspects of learning. R3 said, “There are always two sides of the coin, but learners may not be really aware of this, they just focus on the advantages of MT”, without considering its limitations. R3 observed that learners gravitate towards MT due to its inherent convenience. However, this reliance often stems from a disinclination to engage in critical thought, leading to indiscriminate usage without comprehensive understanding of the translated content. Reflecting on her teaching of MT, R3 suggests integrating dictionaries in the curriculum as a potential strategy for enhancing

learners' comprehension. By amalgamating dictionaries with MT tools, learners can access more comprehensive meanings and definitions currently unavailable solely through automated translation processes.

In another example, R2 related how her class atmosphere can become relatively quiet with a few learners providing responses to questions, but refraining from asking reciprocal questions. In discussing MT, learners seem interested in the role of MT but are quite ignorant about its overall scope and detriments. The whole process is mainly based on the instructor as the input provider – although learners respond to instructors' questions, they are unable to formulate opinions of their own. In view of this, the looming fear plaguing instructors is how academia would manage the future with widespread ChatGPT influence, as rightfully pointed out by R1 that instructors are now no longer checking mistakes in learners' work, but rather, ensuring whether the output is actually learners' original work. With MT, the original idea is derived from learners, to say the least, however, that is not the case with ChatGPT.

Discussion

The findings indicate that the most frequently used strategies are highlighting comparisons and parallels between MT and textbook output, particularly in foreign language classrooms. Mandarin instructors tend to use comparative teaching strategies more frequently in teaching learners about MT. When the two Mandarin instructors compared MT output with sentences from the textbook, they helped to broaden learners' perspectives to see other sentences beyond the textbook with similar meaning. Instructors' use of the right strategy can train learners' critical thinking skills, as MT output does not invariably guarantee total accuracy. Using comparative teaching methods also enhances learners' ability to compare, review and distinguish different ways of expressions of a similar thought.

Compared to English instructors, Mandarin instructors presented more MT errors and examples, either through direct instruction or class discussions. Pertinent techniques such as leading general class discussion and offering oral feedback on MT output and/or providing direct instruction and oral guidelines are equally important integration procedures for instructors to create

awareness on MT and its (potential) setbacks, as highlighted by Deng and Yu (2022). It is necessary to highlight the advantages and disadvantages of MT (Rowe, 2022; Xu, 2020), and ensure learners are aware of potential MT errors. Compared to direct explanations, class discussions can be more effective in enhancing comprehension. The breadth and depth in which second and foreign language instructors engage in discussion with learners is commendable and has been found to be insightful and intended to be effective for learners to be aware of the limitations of MT. However, instructors need to be aware of learner differences, for example, language proficiency and learning styles.

The two English language instructors emphasized the importance of enhancing learner confidence in guiding them to use MT. For example, R3 made learners realize that their translations are sometimes better than MT. R4 believed that learners need to empower themselves by using various reading techniques instead of depending solely on MT output. It is crucial to instill awareness of MT as an AI tool which can be used to complement writing skills (Huang & Wilson, 2021) due to its pervasive nature (Hellmich & Vinall, 2021), but not as the ultimate means for completing tasks.

Additionally, instructors go a step beyond and demonstrate the techniques for using MT (Ross et al., 2021) as well. Similar to many other learning outcomes, group discussions and collaboration (Rowe, 2022) which encourage peer interactions are important means as learners are more willing to reveal their thoughts in groups, instead of speaking up when called upon in class. The less frequently used techniques are to i) encourage original or creative work (R2), ii) encourage combination use of MT with other tools (R1), and iii) use chunking technique (R4). Although Hellmich (2021) postulates the need to expose learners to additional online resources and training on the use of MT tools, these strategies are not widely exploited in this study.

The prime challenges in teaching MT in second and foreign language classes are learners' inability to use effective contextual translation, and inability to judge the accuracy of MT output, hence, reductionist perception (Hellmich & Vinall, 2021) of MT. Learners demonstrate evident lack of awareness and MT literacy as some of them show limited interest in MT tasks. Meanwhile, instructors highlight learners' limitations with various contentions, namely, learners do not choose the right MT tools (R2); they do not provide

accurate input (R2); they use MT more frequently in writing than reading (R3), and have over-reliance on MT for completing assignments (they would instinctively use MT when completing translation assignments even when not required by instructors) (R1, R3).

Our observation results indicate that instructors only focus on discussing the benefits and drawbacks of MT and probable mistakes learners may encounter. Few guidance methods, such as writing short sentences and writing in formal native language are offered. It was also found that none of the instructors mentioned the "pre-edit/post-edit" strategy (R1, R2, R3, R4). The instructor (R3) advised learners not to translate the full essay, as sentence level translation is preferred to paragraph level translation. However, she did not offer any further explanation or rationale for this. Instructors are also sometimes ambivalent about the proper teaching technique to be employed (R2) nor know viable solutions how to mitigate plagiarism (R1, R2). Digital literacy as a cognitive issue is evidently lacking, as it is regarded as mere technological literacy. As iterated by Chun et al. (2016), language learners must develop digital literacy skills by critically engaging with the cultural connections among forms, contexts, meanings, and ideologies across various material mediums. In this chain, instructors too require specific training on how to explore and acquire MT literacy (Lew et al., 2023), before they can impart this to learners.

Conclusions and Recommendations

The study highlighted various strategies and technologies employed by second and foreign language instructors in addressing the prevalent use of MT in language classes. The most salient strategies included drawing comparisons between MT and course materials, class discussion and oral feedback on MT output, direct instruction and oral guidelines, building confidence and small group discussions among learners. A number of teaching techniques were used to this end, namely, explaining the advantages and disadvantages of MT, errors, techniques, discussion and debriefing of MT output, strong persuasion for original work, as well as teaching chunking technique to avoid over-reliance on MT.

The research also sheds light on the challenges and obstacles faced by both learners and instructors in addressing the widespread use of MT in language classes. Learners encountered their own set of challenges and obstacles, which include inability to use effective contextual translation, inability to accurately judge the accuracy of MT output, and lack of self-awareness and MT literacy. Other challenges include disinterest in tasks directly involving MT, poor selection of suitable MT tools, failure to provide accurate input, over-reliance on MT for completing assignments, and tendency to use MT more extensively during writing tasks compared to reading tasks.

Among the challenges posed by instructors, several key points were identified. Firstly, instructors often failed to provide comprehensive explanations, leaving learners with limited understanding of MT usage. Secondly, they frequently omitted pre- and post-editing assistance, neglecting a crucial aspect of language learning and improvement. Additionally, many instructors displayed uncertainty regarding the most effective teaching strategies and techniques for incorporating MT in the classroom. Lastly, a significant hurdle was their lack of clarity regarding the appropriate approach to tackle plagiarism issues arising from the use of MT.

On the whole, the study has implications for language educators and curriculum designers interested in incorporating technology into language teaching and learning. The insights into instructional methods, challenges and the need for digital literacy in using MT for language learning offer valuable contributions to the development of sustainable multilingualism as well. By equipping both educators and learners with effective strategies such as drawing comparisons between MT and textbook outputs, whole-class and small-group discussions, and providing oral feedback, the research supports a nuanced approach to language acquisition. Furthermore, addressing challenges like learners' limited contextual translation skills and MT literacy enhances the potential for long-term multilingual competence. This comprehensive approach promotes enduring, adaptable and sustainable multilingualism by integrating technology with traditional language learning methods.

However, the present study has some limitations. The scope of the study is limited to a relatively small observed entity, which may only represent local occurrences and not provide a comprehensive picture of

the overall situation. Additionally, the research focused on the use of MT in English and Mandarin languages only, potentially limiting its generalizability to other language contexts.

Based on the findings, it is suggested that the next step in language instruction should revolve around integrating MT and artificial intelligence technologies into the classroom effectively. As these technologies are permeating and pervading the teaching and learning landscape, there is a pressing need for comprehensive guidelines to help language instructors incorporate these advancements into their teaching practices. By addressing the challenges identified in this research and leveraging the strategies and technologies, educators can better equip learners to navigate the evolving terrain of language learning in the digital age. Further, this research can be replicated with learners pursuing other foreign language courses, namely, Arabic, Japanese or Tamil language. It is noteworthy observation how different foreign languages present varied or parallel patterns of challenges and to know if the mitigating mechanisms are similar across different language domains at higher education in and beyond Malaysia.

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and Chinese Language Teaching*, 11(1), 1–18.

Ya Ling Lew

UiTM Perlis filialas, Perlis, Malaizija
yaling@uitm.edu.my

Naginder Kaur

UiTM Perlis filialas, Perlis, Malaizija
ninder@uitm.edu.my

Huzaifah A Hamid

UiTM Perlis filialas, Perlis, Malaizija
huzaifahhamid@uitm.edu.my

Foo Terng Hoe

UiTM Penang filialas, Pulau Pinangas, Malaizija
hoefo964@uitm.edu.my

**MOKYMAS, KAIP NAUDOTI MAŠININĮ VERTIMĄ MOKANTIS
ANTROSIOS IR UŽSIENIO KALBŲ: MALAIZIJOS AUKŠTOJO
MOKSLO ATVEJIS**

Anotacija. Šiame tyrime nagrinėjami Malaizijos universitetų dėstytojų taikomi mokymo metodai, kuriais siekiama palengvinti studentų naudojimąsi mašininio vertimo mokantis antrosios arba užsienio kalbos. Svarbu nustatyti veiksmingas strategijas ir metodus, kuriuos dėstytojai taiko mokymosi procesui valdyti, taip pat išsiaiškinti, su kokiais sunkumais ir kliūtimis susiduriama mokymo proceso metu. Taikytas atvejo tyrimo metodas apima stebėjimą ir interviu su keturiais universiteto dėstytojais, kurie įtraukė mašininį vertimą į savo antrosios ir užsienio kalbų pamokas. Tyrimo dalyviai buvo stebimi tris kartus per vieną semestrą (14 savaičių). Daugiausia dėmesio skirta tam, kaip dėstytojai, taikydami įvairias strategijas ir metodus, moko naudoti mašininį vertimą. Kartu buvo atitinkamai fiksuota ir studentų reakcija. Nustatyta, kad dėstytojai taikė kelias strategijas ir metodus, tokius kaip mašininio vertimo ir vadovėlio tekstų palyginimas ieškant skirtumų ir panašumų, klasės diskusijos ir žodinis grįžtamasis ryšys apie mašininio vertimo kokybę. Be to, siekiant optimalių numatytų mokymosi rezultatų, buvo taikomi tiesioginio mokymo metodai, žodinės rekomendacijos, pasitikėjimo ugdymas ir diskusijos mažose grupėse. Įgyvendindami šias strategijas, dėstytojai susidūrė su keliais iššūkiais: su studentų negebėjimu naudoti veiksmingą kontekstinį vertimą ir ribotomis žiniomis, kaip nustatyti mašininio vertimo produkcijos tikslumą. Dėstytojai apgailestavo, kad besimokantieji neapgalvotai naudojami mašininio vertimo ir menkai supranta jo raštingumą. Tyrime teigiama, kad tiek dėstytojai, tiek studentai privalo tobulinti savo skaitmeninį raštingumą. Tuomet dėstytojai gebėtų sumaniai vadovauti, kaip mokymosi tikslais panaudoti mašininį vertimą, ir kartu įgalintų studentus protingai naudoti mašininį vertimą, suvokti jo ribojimus ir sinergiškai integruoti jį į kitų kalbų mokymosi metodus; taip būtų galima pasiekti geresnių mokymosi rezultatų. Tyrimas reikšmingas kalbų mokytojams ir mokymo programų rengėjams, besidomintiems technologijų įtraukimu į kalbų mokymą ir mokymąsi.

Pagrindinės sąvokos: antrosios kalbos mokymasis; iššūkiai; mašininis vertimas; mokymo strategijos; užsienio kalbos mokymasis.