



MACHINE TRANSLATION IN ENGLISH LANGUAGE LEARNING: EXPLORING TEACHER AND STUDENT PERCEPTIONS IN INDONESIAN SECONDARY SCHOOLS

by

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Abstract:

The increasing presence of machine translation (MT) tools has caused both opportunities and challenges for English language education. This mixed-method case study examines teachers' and students' perceptions of machine translation (MT) use in a secondary school in Bandar Lampung, Indonesia. Data were gathered by a supervised Google Forms questionnaire combining closed items ($n = 76$; teachers $n = 4$; students $n = 72$) and open-ended responses. Descriptive analyses indicate that the major group of students ($\approx 91.6\%$) used MT sometimes or often, while teachers reported moderate confidence in guiding students' responsible use (mean = 3.25 on the reported scale). Thematic analysis of open responses generated five principal themes: (1) MT as scaffolding for comprehension and production; (2) time-saving and accessibility benefits; (3) accuracy and trustworthiness issues; (4) a tension between dependence and strategic engagement; and (5) assessment integrity and curricular guidance needs. Supervised administration improved data completeness but may have influenced some responses. Findings suggest MT is embedded in student practice and that teachers favor guided integration rather than prohibition. The study contributes context-sensitive evidence from a Southeast Asian secondary-school setting and provides recommendations for MT literacy instruction, assessment adaptations, and teacher professional development. Limitations are discussed, and directions for future research are proposed.

Keywords: EFL, machine translation (MT), secondary school, , translation

Abstrak:

Meningkatnya penggunaan perangkat penerjemahan berbasis mesin (MT) menghadirkan peluang sekaligus tantangan dalam pendidikan bahasa Inggris. Studi dengan pendekatan metode campuran ini menelaah persepsi guru dan siswa terhadap penggunaan MT di sebuah sekolah menengah di Bandar Lampung, Indonesia. Data dikumpulkan melalui kuesioner Google Forms yang disupervisi, yang melibatkan 76 responden, terdiri atas 4 guru dan 72 siswa, serta mencakup butir tertutup dan respons terbuka. Hasil analisis deskriptif menunjukkan bahwa mayoritas siswa (91,6%) menggunakan MT secara kadang-kadang atau sering, sementara para guru melaporkan tingkat kepercayaan diri yang moderat dalam membimbing penggunaan MT secara bertanggung jawab dalam pembelajaran bahasa Inggris. Analisis tematik terhadap respons terbuka menghasilkan lima tema utama, yaitu: (1) MT sebagai sarana scaffolding untuk pemahaman dan produksi bahasa; (2) manfaat penghematan waktu dan peningkatan aksesibilitas; (3) permasalahan akurasi dan keandalan hasil terjemahan; (4) ketegangan antara ketergantungan dan keterlibatan strategis; serta (5) isu

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integritas penilaian dan kebutuhan akan panduan kurikuler. Pelaksanaan pengumpulan data secara tersupervisi meningkatkan kelengkapan data, namun berpotensi memengaruhi sebagian respons peserta. Temuan penelitian menunjukkan bahwa MT telah terintegrasi dalam praktik belajar siswa dan bahwa guru cenderung mendukung pendekatan integrasi yang terarah dibandingkan pelarangan penggunaan MT. Studi ini memberikan kontribusi empiris yang peka terhadap konteks sekolah menengah di kawasan Asia Tenggara serta menawarkan rekomendasi bagi pengembangan literasi MT, penyesuaian praktik penilaian, dan penguatan pengembangan profesional guru.

Kata kunci: EFL, Mesin penerjemah (MT), sekolah menengah, terjemahan

INTRODUCTION

The rapid improvement of machine translation (MT) and artificial intelligence (AI) technologies has fundamentally changed the direction of English language education, from a contemporary to a more interactive, technology-mediated learning environment (Kohnke et al., 2023; Lee, 2019; Urlaub & Dessein, 2022). In the past ten years, tools of machine translation like Google Translate, DeepL, and AI-based language assistant platforms have become increasingly accessible, accurate, and integrated into students' daily learning practices (Lee, 2019; Mirzaeian & Oskoui, 2023). While initially allotted to professional translation environments or experimental research, MT has now moved to mobile devices, classrooms, and online learning environments worldwide (Urlaub & Dessein, 2022). The widespread presence of MT has transformed the way students access meaning, construct texts, and interact with foreign language input, particularly in the context of English as a Foreign Language (Sujarwo, 2020).

In educational contexts, machine translation (MT) goes beyond its role as not only a technical tool for understanding the unknown vocabularies, but also for learning resources that facilitates vocabulary development, paraphrasing practices, and critical linguistic reflection (Fathinah et al., 2025). Moreover, it functions as a socio-technical tool with implications for cognition, pedagogy, assessment, and classroom norms. Advances in machine translation have enabled MT systems to produce fluent and often idiomatic output, which can support learner comprehension, provide lexical alternatives, and assist in constructing written texts (Loock & Léchauguet, 2021; Yuasa & Takeuchi, 2025). For students, this capability offers a variety of benefits, such as immediate feedback and increased access to English-language materials that are beyond their proficiency level. Several studies have shown that MT can facilitate vocabulary acquisition, reduce cognitive load, and support

the early stages of text production when used strategically (Lee, 2019).

At the same time, however, the integration of MT into learning raises significant concerns. Despite improvements in surface accuracy, MT output still contains errors related to pragmatics, discourse coherence, and context-sensitive meaning, which can mislead students or obscure gaps in linguistic competence (Loock & Léchaugette, 2021; Yuasa & Takeuchi, 2025). Overreliance on MT risks encouraging surface processing, reducing opportunities for deliberate practice, and complicating teachers' efforts to assess students' authentic language abilities. These concerns are particularly pronounced in secondary school contexts, where basic language skills are still developing, and assessment practices are often more tightly regulated (Klimova, 2025).

Previous studies have examined machine translation from different perspectives, including learner attitudes, teacher perceptions, writing performance, MT literacy, and classroom integration. Table 1 summarizes key studies relevant to the present research and highlights several methodological and contextual limitations that motivate the current investigation. The complete summary of these previous studies is shown in the appendices ([Table 1. Summary of key studies](#)).

As shown in Table 1, previous studies have predominantly focused on higher education settings, frequently examined either teachers or students separately, and have rarely investigated MT use within Indonesian secondary-school contexts. Furthermore, while recent scholarship has increasingly emphasized MT literacy, limited research has explored how teachers' and students' perceptions interact within a shared instructional environment. These limitations suggest the need for further investigation into MT use in secondary EFL classrooms through a dual-perspective approach.

While many educators acknowledge MT's pedagogical potential to support learner understanding and autonomy, they unanimously express concerns about academic integrity, reduced student effort, and the difficulty of identifying or regulating MT use during assessment (Young, 2023). Studies indicate that many language teachers are ambivalent about technology use, supportive of its formative benefits but cautious about implications for assessment reliability (Mirzaeian & Oskoui, 2023). These findings underscore the pivotal role of teacher beliefs and institutional policies in shaping the implementation of MT in classroom practice. However, recent studies mostly examined teachers and students as different objects,

making it difficult to understand how their perceptions converge, diverge, and interact within the same instructional context. As a result, the relationship between student practices and teacher expectations about MT use remains less understood, particularly in secondary school EFL settings.

In response to these challenges, recent research advocates a shift from a prohibition-based approach to pedagogically grounded integration through the development of “MT literacy” (Loock & Léchaugnette, 2021). MT literacy refers to students' ability to understand how MT systems work, critically evaluate translation output, engage in post-editing, and make ethical decisions about MT use in various learning and assessment contexts. Rather than treating MT as a shortcut, MT literacy positions translation tools as objects of reflection and learning. Classroom-based studies have shown that purposeful MT use can improve students' vocabulary awareness, writing fluency, and confidence without compromising independent language processing, examples such as structured post-editing tasks, comparing multiple MT outputs, and metacognitive reflection (Lee, 2019; Mirzaeian & Oskoui, 2023). Beyond technical competence, MT literacy also involves ethical decision-making, critical evaluation of machine-generated outcomes, and the needs of proper usage of MT in different learning and assessment contexts. As a result, MT literacy is more widely positioned as an essential component of digital and AI literacy in contemporary language education (Kohnke et al., 2023; Loock & Léchaugnette, 2021).

Despite the growing research on MT in language learning, several important issues remain insufficiently explored. Many existing studies have focused primarily on higher education contexts and have often examined either teacher or student perspectives independently. Thus, limited attention has been given to how these perspectives interact within the same instructional setting, particularly in secondary school environments where students are still developing foundational language skills. Furthermore, although MT literacy has emerged as a promising framework for responsible technology use, there remains a lack of context-sensitive guidance regarding how MT can be integrated into teaching, learning, and assessment practices. These concerns are particularly relevant in Indonesia and other Southeast Asian contexts, where bilingual programs, varying levels of digital access, and assessment demands may shape MT use in distinctive ways (Fathinah et al., 2025; Klimova, 2025). In addition, many survey-based studies have concentrated on reporting usage

frequency without sufficiently examining the reasoning, negotiation, and classroom meanings underlying MT practices.

Against this background, the present study seeks to contribute to the growing discussion on MT in language education by focusing on Indonesian secondary EFL classrooms, a context that remains relatively underrepresented in existing research. In addition, the study brings together teacher and student perspectives within the same institutional setting, allowing a more comprehensive understanding of how MT is perceived, utilised, and negotiated in classroom practice. By examining these perspectives simultaneously, the study also contributes to ongoing discussions concerning MT literacy and the responsible integration of translation technologies into language learning and assessment.

Thus, the study addresses the following research questions: (1) How do teachers perceive the pedagogical opportunities and constraints of machine translation in secondary school English teaching? (2) How do students describe their use of and attitudes toward machine translation tools in English learning? and (3) What pedagogical implications emerge for the targeted integration of machine translation in the secondary school curriculum? To frame these questions more clearly, the study is guided by a technology-mediated language learning perspective, MT literacy, and a teacher–student perception lens, which together help explain how MT is used, interpreted, and negotiated in secondary EFL classrooms.

METHOD

Design

This study adopted a mixed-methods design, situated within an exploratory case study framework, to investigate teachers' and students' perceptions of the use of machine translation (MT) in English language learning at a secondary school in Bandar Lampung, Indonesia. The mixed-methods approach was chosen to capture both the prevalence and patterns of MT use through quantitative data and the depth, reasoning, and contextual meanings underlying participants' perceptions through qualitative data (Bryman, 2012). Such an approach is particularly appropriate for technology-related educational research, where numerical trends alone are insufficient to explain how and why such tools are used in practice (Dawadi et al., 2021).

Specifically, this study employed a convergent mixed methods design, in which quantitative and qualitative data were collected simultaneously using a single instrument and analyzed through complementary analytical procedures. Closed-ended questionnaire items yielded descriptive statistical insights into the frequency of MT use and self-reported self-efficacy, while open-ended items elicited narrative responses that enabled inductive thematic analysis. This design enabled triangulation within cases, allowing the researcher to examine convergence and divergence between numerical trends and participant accounts (Creswell, 2022). The quantitative component concentrated on recognizing patterns of MT usage, perceived effectiveness, and teacher confidence in managing MT use, while the qualitative component centered on participants' experiences, worries, perceived advantages, and educational interpretations of MT in learning English. The combination of these two elements allowed for a broader understanding of MT utilization than could be obtained through a one-method approach.

This research was designed as an instrumental case study, as the selected school served as a bounded system that allowed for the examination of broader pedagogical issues surrounding MT integration in secondary English language education. The goal was not statistical generalization, but rather analytical generalization, where the findings contribute to theory-building and pedagogical understanding that can be applied to similar EFL and semi-bilingual school contexts.

Participant

Participants consisted of 76 respondents selected through convenience sampling, comprising four English teachers and seventy-two students enrolled in the participating school. The teachers participating in this study included four English teachers with varying teaching experience, ranging from six to twenty years. They taught at various grade levels in high school. This diversity allowed the study to capture perspectives shaped by differences in levels of teaching experience, curriculum demands, and assessment responsibilities.

The participants consisted of seventy-two students from junior high to senior high school, with an estimated age of 15 to 16 years. All students were actively enrolled in school at the time of data collection and had prior experience with MT tools, both formal and informal. The student group represented a range of English language proficiency levels, reflecting the typical classroom diversity in Indonesian secondary schools. Before data

collection, participants were made aware of the study's purpose, the voluntary aspect of participation, and their right to withdraw at any point without consequences. Every response was anonymized prior to analysis to maintain confidentiality and protect participants. Participation was voluntary, and anonymity was maintained through the use of pseudonyms and the removal of identifying information. The students taking part displayed varying levels of English proficiency according to their classroom performance and their placement in the school's standard English program. While no official proficiency assessment was conducted for this study, participants exhibited the variety commonly present in Indonesian secondary EFL classrooms.

Instrument

Data were obtained from a single, structured online questionnaire administered through Google Forms. This instrument yielded two primary data sources: quantitative data, obtained from closed-ended items designed to capture frequency of MT use, perceived usefulness, and teachers' self-rated confidence in guiding responsible MT use. Qualitative data were obtained from participants' responses to open-ended questions that encouraged them to describe their experiences, concerns, strategies, and pedagogical perspectives related to MT. The decision to use a single instrument combining both types of data was guided by methodological considerations. The mixed questionnaire can be a legitimate and efficient strategy because it allows both statistical and thematic analysis from the same respondents (Cresswell, 2022), which can serve as valid qualitative data when analyzed systematically.

The questionnaire items were developed based on themes frequently discussed in the MT literature, including frequency of use, perceived usefulness, learning support, concerns regarding accuracy, dependency, and assessment implications (Lee, 2019; Loock & Léchauguet, 2021; Mirzaeian & Oskoui, 2022). Closed-ended items were designed to capture general patterns of MT use, whereas open-ended items were intended to elicit participants' explanations, experiences, and reflections regarding MT in English language learning.

Data collecting technique

Data collection was conducted using guided, supervised, and scheduled Google Forms administration. All participants completed the questionnaire in a classroom setting, under the

supervision of the researcher and assisted by relevant instructors who were familiar with the questionnaire's content. This supervision served several purposes, including ensuring independent completion, reducing item non-responsiveness, and allowing for clarification of item wording, when necessary, particularly for student respondents.

The questionnaire consisted of three sections. The first section collected demographic and background information. The second section contained closed-ended questions, including multiple-choice and Likert-type questions, related to the frequency of MT use and perceived confidence. The third section consisted of open-ended questions inviting participants to describe their experiences, perceived benefits, concerns, and recommendations regarding the use of MT in English language learning. Prior to full use, the instrument underwent expert review by two experts in applied linguistics and educational technology to ensure content validity, clarity, and alignment with constructs discussed in the MT and language learning literature. A small pilot test involving one teacher and five students (excluded from the main sample) was conducted to check item readability and completion time. Minor revisions were made based on the pilot test feedback.

While supervised administration improved data completeness and consistency, this study acknowledges that the presence of the researcher may have influenced some responses, particularly regarding socially desirable views about responsible technology use. These procedural considerations are explicitly discussed in the Limitations section. The filling of the questionnaire occurred during one planned session, and every invited participant provided valid responses, achieving a response rate of 100 per cent. The supervised method was chosen to enhance response completeness, minimise missing data, and guarantee that participants fully comprehended the questionnaire instructions.

Data analysis technique

Quantitative and qualitative data were analyzed using different but consistent analytical approaches, complementing the mixed-methods design. Quantitative data from closed-ended items were exported from Google Forms to spreadsheet software for analysis. Given the exploratory nature of the study and the small sample size of teachers, analysis was limited to descriptive statistics. These included frequencies, percentages, means, medians, and standard deviations, reported separately for teacher and student groups. Descriptive analysis

was deemed appropriate to describe patterns of MT use and self-perceived confidence without making inferential claims.

Qualitative data from open-ended responses were analyzed using thematic analysis, following the six-phase framework proposed by Braun and Clarke (Braun & Clarke, 2006, 2021). All textual responses are read in depth, where the researcher reads all responses multiple times to gain an overall understanding of the data set, and then the researcher codes the important parts. After that, the codes are grouped into categories and themes based on conceptual similarity and relevance to the research question. The themes were reviewed and refined repeatedly to ensure internal coherence and external distinction. Five primary themes were finalized through this process. To enhance analytical rigor, a second coder independently coded approximately twenty percent of the qualitative dataset. Coding discrepancies were discussed and resolved through consensus, strengthening interpretive reliability and trustworthiness. Triangulation across teacher and student responses was used to examine convergence and divergence in perceptions. Although traditional member checking was not possible due to the questionnaire-based design, these procedures collectively supported the credibility and transparency of the analysis.

RESULT AND DISCUSSION

Finding

Results from the questionnaire data analysis indicate that machine translation (MT) is widely used among students and generally acknowledged by teachers as part of English language learning practices. The findings are presented according to the study's research questions and include both quantitative patterns and qualitative themes emerging from participant responses. The participant profiles provide an important contextual foundation for these findings. The four teacher participants represent a wide range of professional experiences, with teaching experience ranging from six to twenty years. All have taught English at the senior high school level in grades 10, 11, and 12. This distribution suggests that the perceptions reported in this study are shaped by exposure to students at various developmental and curricular stages, from elementary English instruction to the exam-oriented context of senior high school.

Student engagement with machine translation (MT) tools was very high. Of the

seventy-two student respondents, fifty-two (72.2%) reported using MT tools occasionally, while fourteen (19.4%) indicated frequent use. Only six (8.3%) reported never using MT. Overall, approximately 91.6% of students acknowledged using MT at some level in their English language learning.

Table 2. Frequency of MT Use

Frequency of Time	n	%
Never	6	8.3
Occasionally	52	72.2
Frequently	14	19.4
Total	72	100

As shown in Table 2, the majority of students reported using MT either occasionally or frequently, indicating that MT has become a common learning resource in English language learning.

Despite this shared engagement, teachers' confidence in guiding students toward responsible MT use showed a more cautious stance. Three and four teachers rated their confidence at level 3 on the reported scale, while one teacher chose level 4, resulting in a mean confidence score of 3.25 and a median of 3. These values indicate moderate, rather than strong, confidence.

Qualitative responses help explain how these quantitative patterns translate into practice. Most students described machine translation (MT) as a supportive tool that aids language comprehension and production. Many viewed MT as a lexical or syntactic aid, comparable to a dictionary but more direct and flexible. One student stated that they "usually use Google Translate to look up unfamiliar English words," while another explained that MT helps them "form sentences first and then modify the grammar." These explanations suggest that MT is often embedded within broader learning processes rather than being used as a direct substitute for thinking or writing.

Teachers generally acknowledged this supportive function and did not view the use of MT as problematic. Similarly, one teacher even described using MT "as a tool to help students understand vocabulary, sentence structure, and meaning," and to serve as a foundation for understanding difficult language tasks. At the same time, both groups

emphasized the practical benefits of MT related to efficiency and accessibility. Students repeatedly mentioned MT as a tool that made tasks “quicker and easier,” especially when dealing with longer texts or when time is limited. Teachers concurred with this view, highlighting MT’s role in supporting students with lower academic abilities and reducing instructional time spent on basic comprehension.

Table 3. Teachers’ Perceptions of MT Use

<i>Aspect</i>	<i>Finding</i>
<i>MT use</i>	<i>All teachers reported occasional or frequent use</i>
<i>Mean confidence score</i>	<i>3.25</i>
<i>Median confidence score</i>	<i>3</i>
<i>Main benefits</i>	<i>Vocabulary support, comprehension assistance</i>
<i>Main concerns</i>	<i>Accuracy, dependency, assessment integrity</i>

However, concerns about accuracy and reliability emerged prominently, particularly in teachers' narratives. Teachers expressed concerns that machine translation results might contain errors that students could not detect, thus masking underlying language weaknesses. One teacher commented that “translations can be inaccurate, and teachers cannot assess students’ true English proficiency,” suggesting a tension between the use of machine translation and valid assessment. Students also acknowledged errors in the translations, though usually in pragmatic terms. Some students even demonstrated awareness of the limitations of machine translation, citing their ability to check machine translation results against other translation sources or their ability to revise translations manually.

Another concern concerns the risks of dependency and strategic engagement. Teachers often caution students against over-reliance on machine translation (MT), especially in sentence construction and long writing assignments. Instead, student responses revealed a variety of engagement strategies. Some student accounts implied dependency, while others demonstrated reflective use, such as comparing MT output with the original sentence or using feedback to identify weaknesses. One student revealed that her writing was embedded into an MT-based tool “to see my weaknesses and how to improve them,” indicating an emerging metacognitive orientation toward MT use.

Finally, the issue of assessment integrity and curriculum guidance was a key focus in teacher responses. Teachers highlighted the difficulty of distinguishing between student-produced language and machine-translated (MT) output, particularly when grading homework

assignments. One teacher stated that "it's hard to identify what's student work and what's machine-translated." Several teachers explicitly called for increased awareness of MT use and clear boundaries and guidelines, arguing that students need explicit instruction to use MT critically, not mechanically. While students were less likely to raise concerns about assessment, some expressed uncertainty about whether MT use was acceptable for certain assignments, suggesting a lack of shared norms between students and teachers.

Overall, the research findings depict MT as a highly used yet pedagogically ambivalent tool in secondary school English language learning. Quantitative data confirm its widespread use, while qualitative accounts reveal diverse practices, ranging from strategic support to potential overreliance. Moderate levels of teacher confidence, combined with recurring concerns about accuracy and assessment, suggest that MT integration remains largely informal and poorly defined in school contexts.

Discussion

This study aims to explore teachers' and students' perceptions of the use of machine translation (MT) in English language learning in secondary schools in the Indonesian context. The findings reveal a complex and nuanced picture in which MT is simultaneously used, maximized, and contested. By integrating quantitative prevalence data with qualitative narratives, the study illuminates not only how frequently MT is used, but also how MT is understood, justified, and contested by various stakeholders in the classroom. In this section, the results are interpreted in relation to the existing literature, with particular attention to issues of MT literacy, the teacher-student perception gap, assessment integrity, and the socio-pedagogical conditions that shape MT use in secondary education.

MT Utilization, from exception to practice

One of the most striking key findings is the near-ubiquitous use of MT among students, with over ninety percent reporting at least occasional use. This prevalence, as seen in the normalization of MT, confirms that MT has transcended its role as a marginal or norm-breaking tool and has become a familiar element in students' everyday learning practices. This normalization aligns with international research documenting the routinization of MT use among EFL students (Ata & Debreli, 2021; Jolley & Maimone, 2015; Mirzaeian & Oskoui, 2023). Importantly, this study extends these observations to the Indonesian secondary school

context, a setting relatively underrepresented in the literature. From a sociocultural perspective, MT can be understood as a mediational tool that reshapes how learners engage with language tasks, rather than merely serving as an external aid (O'Neill, 2019; Tsai, 2019).

The use of machine translation (MT) challenges the traditional pedagogical assumption that language learning occurs primarily through unaided cognitive effort. Instead, MT appears to function as part of a broader digital ecology in which students routinely use technological tools to mediate understanding. From a sociocultural perspective, this suggests that MT is not simply an external aid, but also a mediating tool that reshapes how students engage with language tasks. MT has become a normalized component of students' learning repertoire, no longer an occasional or exceptional aid. Teacher responses reflected this normalization, as all four teachers reported using MT occasionally or frequently in their own teaching or professional practice, suggesting that MT use is not limited to students alone. Consequently, attempts to treat MT as an abnormal or forbidden practice may be increasingly at odds with the realities of student learning.

The result of over ninety per cent of students indicated that using MT agreed earlier research carried out in Turkey (Ata & Debreli, 2021), Iran (Mirzaeian & Oskoui, 2022), and Indonesia (Munawwarah & Martriwati, 2024), all of which noted favourable student perceptions of MT due to its ease of use and effectiveness. Nevertheless, in contrast to numerous earlier studies concentrated on university students, this study indicates that the use of MT has become common even among secondary-school learners, implying that interaction with translation technologies starts earlier than previously recorded.

Efficiency and pedagogical usefulness of MT

The findings of this study indicate that students predominantly perceive MT as a tool to support language comprehension and production, particularly in the early stages of English language learning assignments. The practice of using MT to access vocabulary, simplify sentence structures, and produce initial drafts aligns with findings in the literature describing MT as a cognitive aid that lowers initial barriers to language learning (Lee, 2019; Loock & Léchauguet, 2021). In this context, MT serves as a temporary initial foundation for students in completing assignments, even though their linguistic competence is not yet fully developed.

Efficiency and accessibility emerged as key features of MT, appreciated by students and acknowledged by teachers. Previous literature consistently reports that students praise MT for its speed and ease, especially when dealing with complex texts or time constraints (Ata & Debreli, 2021; Mirzaeian & Oskoui, 2023). The findings of this study corroborate this argument, demonstrating that MT has become part of students' task management strategies in secondary school settings. From a pedagogical perspective, this affordance has the potential to increase access to authentic materials and support learning differentiation, particularly for students with lower language proficiency levels.

However, the literature also confirms that the pedagogical value of MT efficiency is highly dependent on the framework within which it is used. It was emphasized that without clear guidance, MT-based scaffolding can easily become a substitute for the learning process, rather than a support for it (Loock & Léchaugette, 2021). Therefore, the findings of this study reaffirm that MT's pedagogical affordances are not inherent but rather constructed through task design, teacher direction, and clear learning objectives.

Accuracy, trustworthiness, and limitations of automation

Despite acknowledging the usefulness of MT, teachers in this study expressed persistent concerns about its accuracy and reliability. These concerns have been well documented in the literature, particularly regarding MT's limitations in handling idiomatic language, pragmatic nuances, and context-sensitive meaning (Loock & Léchaugette, 2021; Yuasa & Takeuchi, 2025). The findings of this study confirm that teachers view these types of errors as a serious pedagogical risk, especially for students who lack sufficient linguistic competence to perform independent verification.

The literature suggests that overreliance on MT output can create an illusion of competence, where texts appear grammatically correct but do not reflect in-depth understanding or appropriate language use (Mirzaeian & Oskoui, 2023). This concern is reflected in teachers' responses, who argued that MT can “hide” students' language weaknesses. Although some students in this study demonstrated awareness of MT limitations and double-checked, this practice, while good, is uneven, so the risk of errors remains significant across the classroom population. Yuasa & Takeuchi (2025) asserts that while MT is effective for lexical and syntactic mapping, it cannot fully capture the nuances of meaning

and communicative intent. Therefore, the findings of this study reinforce the argument that MT cannot be positioned as a sole authoritative source, but rather as a tool that requires the teacher's pedagogical presence and critical evaluation by the user.

Dependence versus strategic engagement

The study's primary contribution lies in its documentation of students' heterogeneous engagement with MT. While some teacher narratives caution against over-reliance, student accounts reveal a diversity of practices, ranging from passive reliance to post-reflective editing and self-diagnosis. This heterogeneity supports the argument that MT use is neither inherently detrimental nor beneficial. Rather, its impact depends on students' strategic competence and metacognitive awareness.

These findings strongly support the growing call for MT literacy as a pedagogical response (Loock & Léchaugnette, 2021). MT literacy shifts the mindset from whether MT should be used to how MT should be used. Students who reported using MT focused on its usefulness for identifying weaknesses, comparing alternatives, or revising work. These activities exemplify early forms of MT literacy, even without explicit instruction. However, the uneven distribution of practice suggests that MT literacy cannot be assumed to develop organically. Instead, it requires planned instructional interventions.

In this regard, teachers' moderate self-confidence ratings (mean = 3.25) are particularly noteworthy. Although teachers recognize the need to guide MT use, many appear to lack the conceptual framework, pedagogical tools, or institutional support necessary to do so systematically. This mismatch between widespread student use and limited instructional support is a critical gap that the MT literacy framework aims to address.

Assessment Integrity and Authorship Reconfiguration

Perhaps the most important concern highlighted in this study concerns assessment integrity. Teachers' concerns about the difficulty of distinguishing between students' native language abilities and MT-assisted results directly reflect a problem widely discussed in previous literature. As the fluency and surface accuracy of machine translation output

increase, students' written output becomes increasingly difficult to use as a valid indicator of true linguistic competence (Loock & Léchauguet, 2021; Yuasa & Takeuchi, 2025).

This finding aligns with previous research showing that teachers often express ambivalence toward MT use, particularly due to concerns that linguistically fluent texts may not reflect genuine learning processes or students' actual language competence (O'Neill, 2019; Yuasa & Takeuchi, 2025). The literature also shows that this problem cannot be resolved solely by banning MT. Loock & Léchauguet (2021) and Mirzaeian & Oskoui (2023) assert that bans risk encouraging hidden and unreflective MT use. Conversely, the findings of this study support the argument that assessment integrity needs to be reconceptualized by emphasizing learning processes, such as revision, reflection, and conscious MT use, rather than solely focusing on the final product. Thus, assessment integrity in the MT era lies not in the absence of technology, but rather in transparency and alignment between learning objectives, teaching practices, and forms of evaluation.

Teacher-Student Perception Gap and Socio-Pedagogical Negotiation

The results of this study also show a clear difference between teachers' and students' perspectives on the use of MT in English language learning. Students generally view MT as a practical and helpful tool, particularly for speeding up work, understanding texts, and constructing sentences or writing in English. Conversely, teachers tend to view MT with greater caution due to concerns about student dependency, potential translation errors, and its impact on the validity of student language proficiency assessments. This divergence also reflects a broader pattern observed in language education, where teachers tend to adopt more nuanced and experience-based perspectives, while students rely more on limited or surface-level interpretations (Abreu, 2016). Also, aligns with previous research findings, which suggest that students focus more on the practical benefits of technology, while teachers are more oriented toward pedagogical and assessment responsibilities (Mirzaeian & Oskoui, 2022; Young, 2023).

The literature also suggests that such differences in perception are not simply individual issues, but rather part of a broader pattern in educational technology adoption. Students' digital practices often evolve faster than teachers' pedagogical readiness, particularly in the context of English as a foreign language learning at the secondary school level

(Klimova, 2025). In classrooms where rules or guidelines are unclear, teachers and students may differ in their understanding of what constitutes appropriate or acceptable MT use. Therefore, several researchers emphasize the importance of open dialogue and the development of shared MT literacy so that the use of this technology can be guided consciously, ethically, and support learning, rather than becoming a hidden source of confusion or conflict in the classroom (Loock & Léchaugnette, 2021). This divergence highlights the importance of establishing shared expectations regarding MT use, so that students' everyday technology practices can be aligned with teachers' pedagogical objectives and assessment requirements.

Contextual contribution and novelty

This study makes an important contribution by examining the use of machine translation (MT) in the context of secondary schools in Indonesia, a context that remains understudied in research on MT and language learning. As demonstrated in the literature review, most previous research has focused on higher education or adult learning, and has been dominated by studies from outside Asia. Consequently, the dynamics of language learning in Southeast Asia, including Indonesia, remain underrepresented in the international literature (Klimova, 2025). By situating MT within the reality of secondary schools, this study helps enrich our understanding of how this technology is used at different levels of education, each with its own distinct curriculum characteristics and assessment requirements.

In addition, this research offers novelty through its dual-perspective approach, an approach that integrates teacher and student perceptions within a single institutional context. The findings also indicate that students have extensively used MT in their daily learning practices, while teachers still have moderate levels of confidence in guiding its use. This pattern highlights a unique pedagogical challenge in secondary education that has not been widely addressed in previous research (Yuasa & Takeuchi, 2025). Unlike studies that focus solely on a single group, this approach allows for a more comprehensive understanding of how MT use is shaped through the interaction between student learning habits, teachers' pedagogical concerns, and the absence of a clear policy guideline (Mirzaeian & Oskoui, 2022; Munawwarah & Martriwati, 2024). Thus, the contribution of this study is not only empirical but also analytical, and is relevant for application to other EFL secondary school contexts with similar characteristics.

CONCLUSION AND IMPLICATION

Conclusion

This study examines teacher and student perceptions of the use of machine translation (MT) in English language learning in secondary schools in Bandar Lampung, Indonesia. This exploratory, mixed-methods approach indicates that MT has become a normalized part of students' learning practices, with over ninety percent of students reporting using MT at least occasionally. Students generally view MT as a tool that supports comprehension, expands vocabulary access, and aids in the development of initial drafts of writing. Conversely, while teachers acknowledge these benefits, they demonstrate a more cautious and ambivalent attitude toward MT use in the classroom.

The key finding of this study is the existence of a gap between students' extensive use of MT and teachers' moderate confidence in guiding its responsible use. While some students demonstrated reflective and strategic engagement with MT, concerns regarding overreliance and uncritical acceptance of machine-generated output remained evident. These findings highlight the importance of developing MT literacy as a pedagogical response that enables students to use MT critically, ethically, and strategically.

The study contributes to the literature growth on MT in language education by providing evidence from Indonesian secondary EFL classrooms, a context that remains underrepresented in previous research. Furthermore, by integrating teacher and student perspectives within a single institutional setting, the study offers a more comprehensive understanding of how MT use is negotiated between learner practices, pedagogical expectations, and assessment demands. Future studies may extend this line of inquiry through classroom observations, longitudinal investigations of MT use over time, and experimental studies examining the effectiveness of MT literacy interventions.

Implication

Pedagogically, the findings suggest that teachers should move beyond restrictive approaches toward machine translation and instead develop instructional practices that promote responsible and reflective MT use. Classroom activities involving post-editing,

comparison of alternative translations, and critical evaluation of MT output may help students develop MT literacy while maintaining active engagement with language learning.

At the curriculum level, MT literacy should be incorporated into English language learning objectives. Students need opportunities to learn how MT systems operate, recognize their limitations, evaluate translation quality, and make informed decisions regarding appropriate use. Integrating these competencies into the curriculum may help align language learning with contemporary digital and AI-mediated communication practices.

At the institutional level, schools may benefit from establishing clear and context-sensitive guidelines regarding MT use in learning and assessment. Such policies should distinguish between acceptable formative use and restricted summative use while promoting transparency and academic integrity. In addition, professional development programs should be provided to strengthen teachers' confidence and competence in guiding MT use within technology-rich learning environments.

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Appendices**Table 1. Summary of key studies**

<i>Authors</i>	<i>Participants</i>	<i>Method</i>	<i>Research Focus</i>	<i>Main Findings</i>	<i>Limitations</i>
<i>Ata & Debreli (2021)</i>	<i>EFL students and instructors</i>	<i>Survey study</i>	<i>Perceptions and use of MT in language classrooms</i>	<i>Both students and instructors recognized the usefulness of MT, although concerns regarding dependency remained.</i>	<i>Conducted outside Indonesian context and focused mainly on perceptions.</i>
<i>Jolley & Maimone (2015)</i>	<i>Spanish language students and instructors</i>	<i>Survey and perception study</i>	<i>Use of free online MT tools</i>	<i>MT was widely used despite instructor concerns regarding language development.</i>	<i>Focused on higher education and non-EFL settings.</i>
<i>Lee (2019)</i>	<i>EFL students</i>	<i>Experimental study</i>	<i>Impact of MT on writing performance</i>	<i>MT improved writing performance and writing confidence when used strategically.</i>	<i>Focused primarily on writing outcomes rather than classroom perceptions.</i>
<i>O'Neill (2019)</i>	<i>Language learners</i>	<i>Classroom-based research</i>	<i>MT and language learning processes</i>	<i>MT functioned as a learning support tool when combined with reflective learning activities.</i>	<i>Limited discussion of teacher perspectives.</i>
<i>Tsai (2019)</i>	<i>EFL learners</i>	<i>Mixed-methods study</i>	<i>Learners' use of MT in language learning</i>	<i>Students integrated MT into daily language learning practices.</i>	<i>Focused predominantly on student experiences.</i>
<i>Loock & Léchaugnette (2021)</i>	<i>Undergraduate students</i>	<i>Exploratory study</i>	<i>MT literacy and responsible MT use</i>	<i>Proposed MT literacy as a framework for critical and ethical MT use.</i>	<i>Focused on higher education context.</i>
<i>Mirzaeian & Oskoui (2023)</i>	<i>EFL students and teachers</i>	<i>Survey study</i>	<i>Attitudes toward MT and classroom use</i>	<i>MT was perceived positively but concerns about overreliance persisted.</i>	<i>Limited exploration of secondary-school contexts.</i>
<i>Young (2023)</i>	<i>Language teachers</i>	<i>Qualitative study</i>	<i>Teacher perceptions of MT</i>	<i>Teachers acknowledged MT benefits while expressing concerns about assessment integrity.</i>	<i>Focused primarily on teacher perspectives.</i>

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<i>Munawwarah & Martriwati (2024)</i>	<i>Indonesian EFL students</i>	<i>Survey study</i>	<i>Student perceptions of MT</i>	<i>Students viewed MT as useful, motivating, and time-saving.</i>	<i>Focused only on student perceptions.</i>
<i>Fathinah et al. (2025)</i>	<i>Indonesian EFL learner</i>	<i>Case study</i>	<i>DeepL as a translanguaging tool</i>	<i>MT supported academic writing and language mediation practices.</i>	<i>Single-case design limits broader generalization.</i>

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