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A PHENOMENOLOGICAL INQUIRY INTO THE EXPERIENCE OF MACHINE TRANSLATION USE AMONG CHINESE UNDERGRADUATES

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ABSTRACT

A PHENOMENOLOGICAL INQUIRY INTO THE EXPERIENCE OF MACHINE TRANSLATION USE AMONG CHINESE UNDERGRADUATES

Corey T. Larsen

This phenomenological study explores the experiences of machine translation (MT) use among Chinese undergraduates in a Chinese-foreign, English medium instruction (EMI), joint degree program in southern China. Advancements in MT technology have raised questions about its application in academic settings, particularly in foreign and second language learning. Educators express concerns over potential misuse for cheating and its potential impact on language development, despite acknowledging it may also offer some benefits for language learners depending on the setting and the students' level of L2 proficiency. Using translanguaging as a theoretical framework, this study aims to shed light on these concerns by exploring the students' experiences with MT in an academic context.

Participants included second-year undergraduate students enrolled in an Introduction to Literature course. Primary data collection involved multiple in-depth interviews with five students. Additional data were gathered through pre- and post-study surveys from students in all three sections of the focal course and student reflections on mutually agreed-upon guidelines for MT usage. Quantitative survey results provided

supporting data to this qualitative study to aid the exploration and understanding of the students' nuanced perspectives and practices surrounding MT use.

Findings reveal a complex landscape of conflicting perspectives and practical, critical, and strategic MT use among the students. Further findings suggest that openly discussing and integrating MT into classroom practices may impact students' ethical considerations of its use. Moreover, acknowledging students' varied and often conflicting perspectives on MT, educators in EMI programs might better understand how to encourage students to use MT as a translanguaging tool. Recognizing and valuing the inventive ways students adapt MT for their learning needs can help teachers see these strategic practices as assets to be cultivated rather than behaviors to be curbed.

DEDICATION

To my students,

Your hard work, dedication, and relentless pursuit of excellence inspire me every day. This dissertation is dedicated to you as a testament to the profound impact you have had on both my teaching philosophy and my academic journey. Your hard work and resilience motivate me to continue exploring new horizons and to seek innovative ways to support you in your academic endeavors. May this work serve as a reflection of our shared dedication to learning, growth, and the endless pursuit of knowledge.

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CHAPTER 1 INTRODUCTION

A growing body of research points to widespread use of machine translation (MT) applications among secondary (Kelly & Hou, 2021; Stapleton & Leung Ka Kin, 2019) and university level English learners around the globe (Chung & Ahn, 2021; Eser & Dikilitaş, 2017; Lee, 2020; Maghsoudi & Mirzaeian, 2020; Tongpoon-Patanasorn & Griffith, 2020). While MT is not an entirely new phenomenon, the relatively recent uptick in both the use of MT among students and research on this topic may be due to technological advances in MT models powered by Artificial Intelligence (AI), including deep learning models like Google's neural machine translation (NMT) (Bowker, 2020b; Crossley, 2018; Ducar & Schocket, 2018; Urlaub & Dessein, 2022), that have improved its accuracy and widened its accessibility (Bowker, 2020b; Enkin & Mejías-Bikandi, 2016; Klekovkina & Denié-Higney, 2022; Urlaub & Dessein, 2022). Research on machine translation in education tends to focus on the perspectives and actions of students and teachers regarding the use of MT and the potential benefits and downsides of using MT for second language (L2) learning, including exploring the accuracy and comprehensibility of texts machine-translated from various languages into English and vice-versa. Also, despite concerns among some educators that students are using MT as a replacement for language learning, there has been a trend toward research and reports on integrating MT into L2 pedagogy.

While the research on MT is growing steadily, the wide range in approaches, participants, and research questions, combined with the rapidly evolving nature of MT tools, leaves much space for inquiry into what this quickly spreading phenomenon means for foreign and second language teaching and learning. This study seeks to contribute to

the academic discourse regarding MT use in language learning using a phenomenological approach to explore the experiences of using MT among Chinese undergraduates enrolled in a Chinese-foreign, English medium instruction (EMI), joint degree program in southern China.

Statement of the Problem

There is an acute awareness among educators that students are using MT in foreign language classes as well as in second-language settings from primary school through university (Garcia & Peña, 2011; Kelly & Hou, 2021; Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022; Stapleton & Leung Ka Kin, 2019; Urlaub & Dessein, 2022), though they are less clear about exactly how MT applications are being used and how often. While students had certainly already been using MT prior to 2016, Klekovkina and Denié-Higney (2022) expressed that they noticed a change in their students' L2 writing coinciding with the introduction of Google's artificial neural network for Google Translate in that year, sparking concern and prompting them to explore how students were using MT and how to foster its responsible use (Klekovkina & Denié-Higney, 2022).

Moreover, the continued improvement in the accuracy of MT outputs, combined with the shift to online teaching during the COVID-19 pandemic and the increasing popularity of AI tools since the public debut of ChatGPT in November of 2022 (OpenAI, 2022), have further amplified teachers' suspicions that students may be relying on MT applications to complete assignments and write papers (Faber & Turrero-Garcia, 2020; Merschel & Munné, 2022; Stapleton & Leung Ka Kin, 2019). In the face of these unprecedented advancements in AI-powered MT technology, many educators are

uncertain how to respond to the increase in their students' usage of these tools in academic settings (Henshaw, 2020; Stapleton & Leung Ka Kin, 2019; Urlaub & Dessein, 2022).

Some hold that most student use of MT in language classes amounts to a violation of academic honesty, leading educators and researchers to focus on ways to deter students from using it. Others recognize that MT can be a helpful tool if properly used, shifting the focus to how teachers can responsibly and ethically integrate MT tools into language teaching. Urlaub and Dessein (2022), for example, consider it critical that language teachers develop pedagogical tools and strategies that help students learn how to use AI-powered MT tools in effective and meaningful ways, but their recommendations do not stop there, as they also urge educators to contribute to the greater public discourse regarding MT use for language learning and beyond. Otherwise, industry-disruptive advancements in machine learning and corresponding government policies and regulations may move forward without the benefit of contributions from professionals in the field of language education (Urlaub & Dessein, 2022; Cardona et al., 2023). Regardless of the perspective, advances in technology will clearly continue to influence the development of more sophisticated MT tools, and students will likely continue to use them, forcing educators to confront this issue.

This study addresses the challenges posed by MT tools in educational settings by exploring the experiences of using MT among Chinese undergraduates, contributing to the ongoing conversations and studies about ethical, responsible, and strategic MT use that has the potential to enhance rather than threaten language learning.

Theoretical Framework

This phenomenological study uses translanguaging as a theoretical framework, addressing MT use among students as a phenomenon of language-in-use that has the potential to be tapped, rather than prohibited or stigmatized, to empower language learners. Broadly defined as "the multiple discursive practices in which bilinguals engage in order to make sense of their bilingual worlds" (García, 2009, p. 45), translanguaging constitutes a "practical theory of language… as a multilingual, multisemiotic, multisensory, and multimodal resource that human beings use for thinking and for communicating thought" (Li, 2018, p. 26).

A fuller understanding of translanguaging requires framing it within the broader sociopolitical context of language ideologies that stand as barriers to English learning for students from different linguistic backgrounds. Language ideologies refer to prevailing beliefs and attitudes about different languages and dialects within a society, often privileging a *standard* language, characterized by idealized forms most commonly used by those in power (Lawton & de Kleine, 2020; Lippi-Green, 1997/2012). This privileging of a standard language permeates educational systems, where such ideologies tend to be maintained, often unconsciously, by educators and institutions (Hoff & Reynolds, 2022). When a monolingual standard is upheld, other languages and dialects tend to be marginalized and considered barriers to overcome rather than assets (Lawton & de Kleine, 2020). In this sense, language ideologies are less about linguistic differences and more about maintaining existing power structures, in which language reflects broader societal biases. Distinctions between *correct* and *incorrect* language use in academic settings, can embed prejudices against forms of language considered non-standard. Thus,

language ideologies not only shape perceptions of language legitimacy but also reinforce social hierarchies and power imbalances through linguistic preferences (Flores & Rosa, 2015). In contrast, translanguaging views language from the practical perspective of individuals and their communicative practices rather than from the perspective of idealized and arbitrary native proficiency or standardized forms (García, 2023; Leung & Valdés, 2019; Li, 2018; Marrero-Colon, 2021; Pennycook, 2019).

Translanguaging is a theory of multilingualism that challenges the traditional notion of languages as comprising their own distinct lexicons and inherent grammatical rules. As a fundamental premise, this theory considers "named" languages as sociopolitical constructs that are assigned global prestige relative to the power and influence of the respective nation-states in which they are spoken or which claim ownership of them (Donley, 2022; Leung & Valdés, 2019; Pennycook, 2019). Sociopolitical categorization of languages carries the utility of differentiation and reinforcement of national and political identities, but it cannot describe the internal processes of how multilinguals use languages and make sense of their worlds. As Pennycook (2019) explains, "These language labels are very different from the ways languages work" (p. 177). Translanguaging theory holds that within the internal workings of the human brain, languages do not reside in different locations or in distinct categories, rather they exist as an integrated linguistic repertoire, all components of which are concurrently functional and ready to be accessed as needed (Donley, 2022; Leung & Valdés, 2019; Li, 2018; Liu & Fang, 2022; Marrero-Colon, 2021; Yip & García, 2015). Seen through this framework, all an individual's linguistic abilities, regardless of the

socio-politically constructed labels of different words or forms, are valued and validated as legitimate forms of interacting and communicating (García, 2023; Li, 2018).

Taking a translanguaging perspective means shifting focus away from demanding mastery of so-called pure and proper forms of named languages toward the development of communicative practices, or *languaging* (Li, 2018), that recognize and engage people's full linguistic repertoires (Marrero-Colon, 2021). Rather than viewing languages as fixed structures or standardized grammars, translanguaging embraces how people actually use language and acknowledges the fluidity and inventiveness of multilingualism for creating meaning (Li, 2018; Marrero-Colon, 2021; Pennycook, 2019). It is, therefore, a practical theory of language that disrupts the dominant monolingual ideologies permeating national, academic, or standardized languages (Li, 2018). In practical application, translanguaging aims to create opportunities for individuals to utilize their complete linguistic range freely and without constraints imposed by socially and politically constructed language boundaries (Donley, 2022; Leung & Valdés, 2019).

Donley (2022) succinctly summarizes the theory of translanguaging in three central premises:

> First, languages are not objective, stable, nor purely lexical objects, but rather "named" languages are power-laden sociopolitical constructions. Secondly, the borders that separate named languages are not as relevant from the insider's perspective… but rather exist as entangled in a unified linguistic repertoire that is constantly active and under negotiation. Finally, translanguaging is inherently an interactional, communicative, and practice-based concept of multilingualism. (p. 11)

Translanguaging not only emphasizes the social practice of using language in which individuals activate their full linguistic repertoires to negotiate meaning with others and with the world around them, but also acknowledges the power dynamics inherent in named languages as sociopolitical constructs (Li, 2018; Leung & Valdés, 2019).

Some scholars frame translanguaging in terms of critical pedagogy, challenging the monolingual status quo that privileges pure forms of languages as the dominant and hegemonic global ideal (García et al., 2017; García, 2023; Li, 2018). As Pennycook (2019) advocates, translanguaging as critical pedagogy makes way for "a broader, multilingual approach to our classrooms" (p. 174) and "a more flexible understanding of resourceful speakers" (p. 181). Such an approach disrupts the dominant narrative and seeks to empower those who have been disenfranchised or oppressed due to linguistic variation (Leung & Valdés, 2019; Li, 2018). Moreover, García (2023) posits, translanguaging constitutes an ideological shift from seeing multilingual students as language deficient to valuing their rich linguistic repertoires. Through this shift in mindset, educators can recognize and combat social and political injustices (Leung & Valdés, 2019; Unrau et al., 2019), reframe oppressive language ideologies, and potentially reshape the world (García, 2023; Leung & Valdés, 2019; Luke, 2012). As Luke (2012) posits, critical literacy is "a cultural and linguistic practice… [that] entails an understanding of how texts and discourses can be manipulated to represent and, indeed, alter the world" (p. 9). As a form of critical pedagogy, translanguaging confronts sociopolitical norms that determine "whose values, texts, ideologies, and discourses should take center stage" (Luke, 2012, p. 9). Furthermore, translanguaging holds that the superiority of academic English is a social construct (García, 2023; Pennycook, 2019),

echoing Macedo's (2003) position that the ideal of literacy is a myth that disempowers "those who, through an accident of birth, are not part of a class structure where literacy is a fundamental cultural capital" (p. 12). Through a translanguaging lens, multilingual literacies carry their own cultural capital (García, 2023).

The term "translanguaging" was originally coined to refer to a linguistic practice rather than a theoretical construct. It was used to describe to the pedagogical methods employed in Welsh language revitalization programs in which teachers instructed in Welsh while learners responded primarily in English (Leung & Valdés, 2019; Li, 2018; Marrero-Colon, 2021). Williams (1994, as cited in Li, 2018) contended that these practices facilitated problem solving and knowledge construction by enabling learners and educators to take full advantage of all their linguistic resources (Li, 2018). This position contrasts with the monolingual approach to foreign and second language teaching in which it is argued instruction should occur solely in the target language, completely disregarding learners' first languages (Leung & Valdés, 2019). Translanguaging reflects the relatively recent shift in the field of foreign and second language education to embrace "language as a social practice rather than a structuralist object" (Donley, 2022, p. 3). This shift has been termed the "multilingual turn" in language pedagogy (Donley, 2022; Leung & Valdés, 2019), making room for the integration of learners' linguistic resources to negotiate meaning with linguistically diverse others (Pennycook, 2019).

Three-Strand Model of Translanguaging Pedagogy

Proponents of translanguaging, García et al. (2017), have proposed a model of translanguaging pedagogy consisting of three constituent strands: stance, design, and

shift. The first component, *stance,* refers to educators' ideological positions upon which they build their teaching approach. Instructors who adopt a translanguaging stance acknowledge that multilingual learners' diverse language practices do not function independently of one another, rather they complement each other (Leung & Valdés, 2019; Li, 2018; Yip & García, 2015). They regard the rich linguistic repertoires of bilingual students as valuable assets, encouraging them to leverage all their language skills to enhance learning (García et al., 2017).

The second guiding component of the García et al. (2017) model for translanguaging pedagogy is *design,* which entails designing instruction and assessments that integrate students' multiple linguistic and cultural practices and resources into the classroom environment to meet their respective needs (Marrero-Colon, 2021). A translanguaging approach to curriculum design requires that teachers seek to understand students' linguistic practices, design activities that leverage students' strengths, and promote collaboration and the use of supplementary resources that support learning (Liu & Fang, 2022; Yip & García, 2015). Additionally, design of instruction must be flexible to account for students' various needs while also meeting course standards and objectives (García et al., 2017; Marrero-Colon, 2021).

The third, and final, component of the translanguaging pedagogical model is referred to as *shift,* denoting the process of active decision-making while teaching. For example, teachers may seize opportunities to include students' voices or pivot to integrate unplanned learning moments into their teaching (García et al., 2017).

For this study, the researcher reinterpreted the teacher-focused translanguaging pedagogical model of García et al. (2017), applying it to a student-centered context to

investigate the use of MT among Chinese undergraduates in an English medium instruction program in China. In this way, rather than using the model as a pedagogical guide for educators, the researcher applied it as a framework to interpret the students' experiences and build a corresponding phenomenological description. The three-strand model, thus, guided the researcher's exploration of the students' perspectives (stance) on MT, how they use (design) MT to meet their needs within their academic context, and how they adapt (shift) their MT use as their needs change. Moreover, in reinterpreting the three-strand model of translanguaging pedagogy for this study, stance applies to both researcher and students, assuming that both approach their respective tasks—research and learning—from a translanguaging perspective. Thus, the researcher took the position that the students would know their linguistic strengths and limitations and practice both overt and covert self-advocacy when necessary.

Purpose of the Study

The purpose of this study was to explore the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China. The researcher utilized a phenomenological research design to examine the students' beliefs and behaviors concerning MT through in-depth semi-structured interviews, supplemented by surveys and written responses.

Research Question

The following research question guided this study: What is the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China?

Definition of Terms and Acronyms

English Medium Instruction (EMI) – English medium instruction is a commonly used term to refer to university degree programs and classes that are taught in English in non-native English-speaking countries.

Gaokao (高考) – The *gaokao* is the Chinese national university entrance exam. This highly competitive exam is offered once per year and is the only traditional pathway to higher education for Chinese nationals in China (Tsang, 2013).

L1 (First Language) – A learner's L1 is the individual's first or native language.

L2 (Second Language) – A learner's L2 is the individual's second or additional language, sometimes referred to as the target language in second language acquisition research and pedagogy.

Machine Translation (MT) – Machine translation refers to automatic translation from one language to another using computer programs, algorithms, machine learning, and/or artificial intelligence. There are several other terms for machine translation in the literature, including online translators (OT) (Henshaw, 2020), free online machine translation (Jolley & Maimone, 2015; Somers et al., 2006) or Free Open Machine Translation (Jiménez-Crespo, 2017) (FOMT), and online machine translation (OMT) (Merschel & Munné, 2022). The researcher uses the term MT throughout this study.

Neural Machine Translation (NMT) – Neural machine translation refers to the most recent iterations of MT technology, which include the added feature of machine learning trained on the massive corpora of online texts in multiple world languages and continuous user feedback (Bowker, 2020a; Tsai, 2019; Valijärvi & Tarsoly, 2019).

Post-editing – Post-editing refers to the editing or correction of machine-translated output to ensure the intended meaning is accurately portrayed and the grammar and syntax are correct.

Pre-editing – Pre-editing refers to the act of modifying text before it is inputted into a machine translation tool. The purpose of pre-editing is to improve the accuracy and quality of the MT output by inputting MT-friendly language (Bowker, 2020a, 2020b).

Translanguaging – Rather than viewing languages as fixed structures or standardized grammars, translanguaging embraces how people use language and acknowledges the fluidity and inventiveness of multilingualism for creating meaning (Kelly & Hou, 2021; Li, 2018; Marrero-Colon, 2021; Pennycook, 2019). It is, therefore, a practical theory of language that disrupts the dominant monolingual ideologies perpetuating national, academic, or standardized languages (Li, 2018).

CHAPTER 2 REVIEW OF THE LITERATURE

This review of the literature explores the scholarly research related to MT use in foreign and second language education. The studies referenced throughout this review span a wide array of countries, involving participants from a variety of cultural and linguistic backgrounds. Despite the diversity in motivations for learning a new language, distinct learning methodologies, and varying levels of privilege among participants across different contexts, the literature reveals several common themes related to the use of MT in academic settings.

For several decades, scholars have been inquiring about the impact of quickly evolving MT tools on foreign and second language learning (Anderson, 1995; Jolley & Maimone, 2022). Scholarly literature on this topic ranges from questions regarding the ethics of MT use in educational settings to studies on the perspectives and behaviors of students and teachers regarding MT use to investigations on the impact of using MT on L2 reading, writing, and overall language development. Additionally, in response to the development of more advanced AI-assisted MT tools that are widely accessible through mobile and internet technologies, several scholars have begun to address the strategic integration of MT into L2 pedagogy, recognizing that harnessing these quickly evolving technologies for more effective use in language learning might be preferable to prohibiting students from using them (Briggs, 2018; Ducar & Shocket, 2018; Eser & Dikilitaş, 2017; Lee, 2020). Correspondingly, many researchers have tested various instructor-guided MT models to investigate the efficacy of direct integration of MT into language teaching (Chen, 2020; Lee, 2021; Mirzaeian, 2021; Niño, 2009; O'Neill, 2016;

O'Neill, 2019; Pellet & Myers, 2022; Ryu et al., 2022; Shei, 2002; Xu, 2022; Zhang, 2022).

This review encompasses five overall themes from the literature: 1) ethical concerns about MT use in academic settings; 2) how MT is perceived by students and teachers; 3) how MT is used by students and teachers; 4) benefits and drawbacks of MT use for language learning; and 5) integrating MT into foreign and second language pedagogy.

How MT Is Perceived by Students and Teachers

Ethical Concerns About MT Use in Academic Settings

Studies addressing ethical considerations of MT use from the perspective of teachers and students reveal wide-ranging views. The results of a survey conducted by Clifford et al. (2013), for example, show various opinions among faculty members on whether the use of MT by students is equivalent to cheating, with 42% believing that it is cheating, 21% saying it is not, and 37% choosing "other," with several respondents stating that it depends on the assignment, frequency, or context of MT use. Several respondents also expressed that using MT would be considered cheating if students submitted the output as their own work. Moreover, Correa (2014) pointed out that while using MT to translate an assignment from L1 to L2 may be considered academic dishonesty in language classes, in other disciplines in which language is not considered course content, it may be more of a gray area, especially in settings in which English is the medium of instruction where students are not otherwise immersed in English outside of the classroom (see also: Ducar & Schocket, 2018; Klekovkina & Denie-Higney, 2022;

Rohmana et al., 2023) and among non-native English-speaking international students in the United States (Kim & LaBianca, 2017).

Results of another survey on the perspectives of university language instructors (Jolley & Maimone, 2015) showed that their ethical judgments of MT use also varied by type of assignment and length of translated text. Faculty respondents considered the use of MT for presentations as more ethical than when used for workbook exercises or writing assignments, while they rated the use of MT for translation assignments as the least ethical. The length of the translated text also influenced instructors' perspectives, with a vast majority considering the use of MT for translating paragraphs or entire texts as completely unethical and translating individual words as completely ethical, which is corroborated by Kim and LaBianca (2017). Jolley and Maimone (2015) also found that instructors associated more frequent use of MT tools with academic dishonesty.

As an illustration of the importance of ethical use of MT in language learning, Bowker (2020a) reported that language educators wanted academic integrity to be covered in workshops for students about MT literacy to inform students that text translated from other languages, by MT or otherwise, needs to be properly cited. Ducar and Schocket (2018) similarly stated that language instructors have the responsibility to make it clear to students that submitting MT writing as their own work in a language class is a violation of academic honesty.

Notwithstanding, Ducar and Schocket (2018) also pointed out that it has become increasingly difficult for educators to detect students' technology-enabled breaches of academic honesty. This is especially true in the age of ChatGPT and other advanced AI systems that are not only able to translate texts into multiple languages but also to

compose unique texts that may not be detectable by anti-plagiarism software (Godwin-Jones, 2022). Even before the introduction of more advanced versions of MT, O'Neil (2013, 2014) found that teacher raters were not always able to identify whether students used MT to write their papers and sometimes even misidentified student writing as MT-generated when it was not, suggesting students might be using MT tools to help them write their work without their teachers knowing.

Moreover, Merschel and Munné (2022) found no consensus among middle- and high-school teachers of world languages from 42 states regarding the consequences of detected MT use in language classrooms. Teachers' survey responses revealed that teacher-imposed consequences ranged from sternly addressing the practice to failing the assignment to facing disciplinary action at the departmental or school level, and many teachers indicated they would allow students caught using MT to redo the assignment. Such inconsistency illustrates the lack of guidance for teachers on how to address MT use in their classrooms and has the potential to send a message to students that using MT may be worth the risk since the consequences are not clearly defined. As a case in point, in a study of 7th grade learners of Spanish, Giannetti (2016) found that more than half of the students said they would use MT even if against the teacher's wishes.

Similarly, through a study on academic dishonesty among Indonesian online learners of English as a foreign language at the university level, Rohmana et al. (2023) found that 66.7% of participants reported having used MT to translate their L1 writing into English and then submitting the output for a grade. Several students (61.1%) also reported having taken L1 text from the internet, translating it to English, and then submitting it as their own without citing the original source. Also, among a sample of

university language students in the United States, Klekovkina and Denié-Higney (2022) found that students seldom viewed their use of MT as unethical. Rather, they believed that since the concepts conveyed in their writing were originally theirs and simply translated into the target language, the final product was not plagiarized. However, this perspective fails to consider that the primary objective of the course was for students to enhance their skills in their L2 rather than solely producing flawless written content.

Furthermore, a study by Jolley and Maimone (2015) found that 87% of both university-level Spanish students and their instructors held nuanced perspectives regarding ethical MT use, indicating that whether it was considered cheating depended on how MT was used. Also, the same study revealed a significant gap between perception and reality. While 74% of instructors believed students saw no ethical issues with any form of MT use, in reality, only 13% of students actually shared this view (Jolley & Maimone, 2015). Further findings refuted the notion that students consider the translation of entire paragraphs as appropriate behavior for foreign language writing. Rather, students held nuanced perspectives on the ethical use of MT, suggesting they were aware of the need to use MT responsibly, and with minimal frequency, such as for individual words or to confirm they are using words correctly. Similarly, in a survey of undergraduate and graduate non-native English speaking international students and faculty members at a U.S. university (Kim & LaBianca, 2017), students rated word- and phrase-level MT usage as well as sentence- and paragraph-level MT usage as less ethical than faculty did. Despite teachers' concerns about students' unethical use of MT, these studies indicate that students may have a greater awareness of ethical considerations in this regard than teachers may think.

In response to the widespread use, and potential misuse, of MT among students, language teachers tend to address the issue in several ways, including attempting to discourage MT use by showing students inaccurate translations, claiming it impedes language learning, establishing policies banning its use for class assignments, and explaining its benefits and drawbacks (Merschel and Munné, 2022). In contrast, some scholars suggest educators design tasks that integrate MT into the language learning process, developing pedagogical tools and strategies to help students learn to use online translators to enhance language learning (Ducar & Schocket, 2018; Kim & LaBianca, 2017). Likewise, Ducar and Schocket (2018) draw upon the position statement of the American Council on the Teaching of Foreign Languages (ACTFL), which supports the integration of technology into language learning to create interactive and student-centered learning experiences that enhance language proficiency, to urge researchers to investigate strategies for preventing academic dishonesty associated with MT and promoting the ethical use of MT tools in language learning.

The literature reveals a range of opinions among educators and students regarding ethical concerns around MT use in academic settings. While some see it as a breach of academic integrity, others perceive it as more of a gray area depending on the class and the length of text being translated. Despite these concerns, studies show that students possess a nuanced understanding of the ethical implications of MT use, often more so than educators realize, suggesting a disparity between teacher perceptions and student realities. Educators' varying responses to MT use, from outright prohibition to integrating it into the learning process, point to the need for clearer guidelines and pedagogical strategies to address the ethical use of MT in education.

Students' Positive Perspectives on MT Use for Language Learning

Studies show that students have a generally positive perspective of MT as a language learning tool, pointing to benefits ranging from ease and convenience to helping improve language and communication skills. Giannetti (2016) found that students were not only using MT with relative frequency, but they also perceived themselves to be good at using MT tools. Additionally, students professed to understand the limitations of MT and had a healthy perspective that such tools need to be approached with caution, guidance, and with a critical eye (Giannetti, 2016; Lee, 2021).

Students frequently report MT applications to be convenient, easy to use, and time-saving when completing class assignments (Ahn & Chung, 2020; Clifford et al., 2013; Chen, 2020; Faber & Turrero-Garcia, 2020; Garcia & Peña, 2011; Klekovkina & Denié-Higney, 2022; Niño, 2009; Sukkhwan, 2014). The ubiquity of MT tools plays a prominent role both in how students perceive them and use them.

However, ease of access is not the only benefit students claim to receive from MT use. Students also report that MT helps them improve their L2 writing (Ahn & Chung, 2020; Bahri & Mahadi, 2016; Lee, 2020; Tsai, 2019) by providing them with a quick draft to get them started with the writing process (Chen, 2020) and giving them feedback on their L2 writing by translating it back to their L1 (Ahn & Chung, 2020). Also, results from a survey of Chinese students who were learning English (Tsai, 2019) showed that students considered MT to be a helpful tool for completing writing assignments. Students also claim MT helps them write with fewer errors (Garcia & Peña, 2011), producing more grammatically accurate sentences than students might be able to produce on their own (Chung & Ahn, 2021). Other studies have found MT use for writing can be

especially helpful for students with lower levels of L2 language proficiency (Garcia, 2010; Jolley & Maimone, 2015; Sukkhwan, 2014). Students further assert that MT expands their writing strategies (Ryu et al., 2022), enhances their creativity and ability to express themselves (Ahn & Chung, 2020; Chung & Ahn, 2021; Garcia & Peña, 2011; Ryu et al., 2022; Tsai, 2019), and boosts their confidence in L2 writing (Niño, 2009; Ryu et al., 2022).

Several studies also report that students tend to perceive MT as a helpful tool for increasing their L2 vocabulary, maintaining that using MT to search for individual vocabulary words is one of its most beneficial functions (Ahn & Chung, 2020; Bahri & Mahadi, 2016; Chung & Ahn, 2021; Clifford et al., 2013; Faber & Turrero-Garcia, 2020; Lee, 2020; Niño, 2009; Shei, 2002; Sukkhwan, 2014; Tsai, 2019; Valijärvi & Tarsoly, 2019; Xu, 2022). Some studies report that students consider MT as a more convenient replacement for traditional and electronic dictionaries (Clifford et al., 2013; Jin & Deifell, 2013; Jolley & Maimone, 2015; Niño, 2009; Pellet & Myers, 2022). Students claim using MT to look up words and phrases helps them with L2 reading comprehension (Bahri & Mahadi, 2016; Chen, 2020; Niño, 2009), though they also acknowledge that the accuracy of MT output is better for more straightforward texts, such as informative or technical writing, than for more artistic and creative texts, such as literature and advertisements (Jolley & Maimone, 2015). Despite inaccuracies and errors, students tend to find the output of MT acceptable and reliable (Clifford et al., 2013; Delorme Benites et al., 2021; Giannetti, 2016; Jolley & Maimone, 2015; Kadhim et al., 2013; Maghsoudi & Mirzaeian, 2020), while also recognizing the need for caution when using MT (Clifford et al., 2013; Kadhim et al., 2013; Lee, 2020). Some studies have emphasized the importance of

cautious use of MT, as poor machine translations can change the meaning of a text or impede comprehension altogether (Hofstadter, 2018; Maghsoudi & Mirzaeian, 2020).

Similarly, several studies conclude that students see MT as a helpful tool for language learning and development of their L2 skills (Eser & Dikilitas, 2017; Delorme Benites et al., 2021; Giannetti, 2016; Jolley & Maimone, 2015; Knowles, 2022; Niño, 2009). One study, however, reported that some students saw MT as good for translating though not necessarily for language learning (Valijärvi & Tarsoly, 2019), as students recognized it has limitations and may hinder their language learning in the long term. In another study, Delorme Benites et al. (2021) found that students in a Swiss multilingual setting perceived MT as a useful and practical learning tool while at the same time acknowledging it cannot replace the need for language teachers or the need to develop L2 proficiency (see also Mundt & Groves, 2016), especially in multilingual societies.

Several additional studies further acknowledge students are not merely passive users, rather they engage with MT in innovative and critical ways (Bowker, 2020a; Lee, 2021). Identifying students' interest in learning to utilize MT tools more strategically and responsibly, Bowker (2020a, 2020b) developed MT literacy workshops, which have been positively received by both students and teachers (this model is briefly described later in this review of the literature). Likewise, several other researchers have described students' positive reactions to guided use of MT tools when integrated into pedagogy, finding students believe it motivates them toward self-learning and promotes language development (Bahri & Mahadi, 2016; Ryu et al., 2022). Students have also reported high levels of satisfaction with in-class training on how to use MT more effectively (Mirzareian, 2021; Ryu et al., 2022). Moreover, Kelly and Hou (2021) found that newly

arrived English learners in Northern Ireland considered teacher use of MT helpful for communicating with them, understanding instructions, and making assignments accessible.

Overall, the literature indicates that students are generally satisfied with the use of MT and are likely to continue to use it for future L2 study and communication (Ahn & Chung, 2020; Bahri & Mahadi, 2016; Chen, 2020; Giannetti, 2016; Ryu et al., 2022; Tsai, 2019).

Teachers' Positive Perspectives on MT Use

Studies haven also identified several positive views held by educators about the use of MT in language learning. Many teachers recognize that MT tools have the potential to be both helpful and harmful for language learning, depending on how they are used. They hold that integrating MT into the classroom provides teachers opportunities to inform students about their pros and cons and guide them to use these tools strategically and responsibly (Bowker, 2020; Clifford et al., 2013; Faber & Turrero-Garcia, 2020; Jolley & Maimone, 2015; Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022; Ohashi, 2022; Stapleton & Leung Ka Kin, 2019). Others maintain that teaching about the limitations of MT tools may deter students from using them altogether or at least mitigate their use (Faber & Turrero-Garcia, 2020; Henshaw, 2020; Niño, 2009). Some also claim that outright bans on MT technologies are likely to be less effective than finding innovative ways to integrate them into language teaching as a computer assisted language learning (CALL) tool (Delorme Benites et al., 2021). Many teachers want more guidance on how to integrate MT into their teaching (Bowker, 2020a; Bowker, 2020b; Henshaw, 2020; Merschel & Munné, 2022; Ohashi, 2022).

Some teachers suggest MT can be a useful tool for newly arrived students at beginning language levels in a second-language setting to facilitate reading comprehension, help them to understand classroom and assignment instructions, and communicate with their teachers (Kelly & Hou, 2021; Lyddon, 2018; Niño, 2009). Moreover, some do not see the value of students using MT beyond the beginning levels of language mastery, though studies show that students continue to use MT in progressively strategic ways as they develop their L2 proficiency (Kelly & Hou, 2021; Lee, 2020; Tsai, 2019).

On the other hand, many foreign language teachers consider MT more useful for advanced learners (Clifford et al., 2013). They claim it provides students with opportunities to practice error identification and error correction, to reflect on the differences between their L1 and the target language, and to develop a deeper understanding of the complex nature of the translation process (Lee & Briggs, 2021; Niño, 2009).

Moreover, some researchers report that teachers believe student use of MT for short bits of text is acceptable, but they consider using it for longer texts to be a form of cheating (Henshaw, 2020; Jolley & Maimone, 2015; Merschel & Munné, 2022; Stapleton & Leung Ka Kin, 2019).

Students' Negative Perspectives on MT Use for Language Learning

While the literature reflects an overall positive perspective from students on MT use for language learning, it also shows that students recognize some of its drawbacks as well. For example, students have often noted that MT does not provide feedback on grammar, making it an ineffective tool for understanding grammatical concepts (Ryu et

al., 2022; Tsai, 2019; Valijärvi & Tarsoly, 2019); cannot help them improve their L2 speaking (Bahri & Mahadi, 2016); and does not always translate idiomatic expressions well, depending on the language pair (Maghsoudi & Mirzaeian, 2020; Niño, 2009). Students have also pointed out that MT cannot always be relied on for accurate translations (Faber & Turrero-Garcia, 2020), especially with texts longer than a single sentence (Lee, 2020; Ryu et al., 2022), and it still produces errors that interfere with the intended meaning of the original text (Ahn & Chung, 2020; Maghsoudi & Mirzaeian, 2020; Ryu et al., 2022; Sukkhwan, 2014), requiring them to meticulously post-edit MT output, which some students see as a drawback (Ahn & Chung, 2020; Ryu et al., 2022). Students also reported that MT often offers the wrong equivalent in the target language when used to look up single words out of context (Maghsoudi & Mirzaeian, 2020). Others contended that MT output was unsatisfactory even at the sentence level, though this could also be attributed to ambiguous or poorly written L1 input (Ahn & Chung, 2020). Additionally, one study also found that students did not consider MT helpful for paraphrasing texts (Mirzareian, 2021).

Furthermore, students in several studies acknowledged that dependency on MT tools could hinder their L2 development over time (Ahn & Chung, 2020; Faber & Turrero-Garcia, 2020; Garcia & Peña, 2011; Giannetti, 2016; Ryu et al., 2022; Sukkhwan, 2014; Valijärvi & Tarsoly, 2019) and their motivation to learn (Chen, 2020; Sukkhwan, 2014). This belief was illustrated by one student who simply reported that using MT "makes me lazy" (Garcia & Peña, 2011, p. 485), and other students who explained that they do not pay attention when using MT, which could impede the development of their L2 skills (Garcia & Peña, 2011; Sukkhwan, 2014). Sukkhwan

(2014) found that Thai learners of English who used MT in their compulsory first-year university English course admitted to not trying to read assigned English texts before translating them directly to their L1, not memorizing new words or using strategies to guess their meaning, and not putting forth the effort to write in English (see also Tsai, 2019). In another study that included students in a university Spanish course, Garcia and Peña (2011) related students' statements that MT kept them from thinking in the L2, which hindered their ability to improve their language skills. Students' awareness of the potential for MT to keep them from learning or to rob them of the motivation to learn corroborates the view of Klekovkina and Denié-Higney (2022) that when students use MT passively it removes their choices for L2 production, limiting their range of options for communicating in writing or speaking.

Teachers' Negative Perspectives on MT Use

While studies reveal that teachers hold some positive views about the use of MT, their negative perspectives on the topic are much more prevalent in the literature. These perspectives include ethical concerns, reluctance to adopt new technologies they perceive as threatening, consternation about a lack of training on how to best integrate MT into pedagogy, and lingering concerns about the low quality and unreliability of MT output.

Many language teachers disapprove of MT use (Clifford et al., 2013; Merschel & Munné, 2022) and some even have policies prohibiting students from using it in and out of the classroom on all foreign language assignments (Faber & Turrero-Garcia, 2020; Henshaw, 2020; Karnal & Pereira, 2015; Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022; Stapleton & Leung Ka Kin, 2019). Still, some teachers concede that students can use MT depending on the activity and the degree to which they use it

(Clifford et al., 2013; Faber & Turrero-Garcia, 2020; Stapleton & Leung Ka Kin, 2019). All teachers interviewed by Stapleton and Leung Ka Kin (2019), for example, expressed MT should not be used by students to translate their L1 writing to English, though they granted it would be acceptable for them to use it to look up single words. Similarly, Faber and Turrero-Garcia (2020) found that 60% of teachers they surveyed prohibited students from using MT during class time, while 31% indicated that MT tools were allowed only in rare cases and strongly discouraged at all other times. Comparably, Clifford et al. (2013) reported that 77% of foreign language teachers at Duke University initially seemed opposed to students using MT. However, a detailed analysis of the responses revealed a more nuanced picture. The teachers allowed students to use MT to look up single words or idiomatic expressions but not full sentences or paragraphs, especially for graded writing assignments.

Some studies also show that teachers attempt to discourage MT use through various means, including designing assignments in such a way that using MT would not be possible (Knowles, 2022; Merschel & Munné, 2022; Urlaub & Dessein, 2022). However, some express concern that adjusting pedagogy to make it MT-proof can restrict language learning activities to the classroom and potentially interfere with some language acquisition activities that benefit students' language development (Urlaub & Dessein, 2022). Recognizing the potentially restrictive consequences, and the futility, of outright bans on students' MT use, several scholars recommend educators experiment with integrating it into the classroom or directly teaching students how to use it strategically (Karnal & Pereira, 2015; Knowles, 2022; Urlaub & Dessein, 2022).

Some language teachers also see MT as a potentially threatening technological innovation. Some researchers have found that educators may be reluctant to adopt disruptive technologies because they perceive them as a threat to their profession (Delorme Benites et al., 2021). They fear that an increase in the availability and use of MT may decrease the need for foreign language teachers (see Cribb, 2000). Crossley (2018) and Clifford et al. (2013) address this issue, suggesting MT will by necessity change the way foreign languages are taught; however, along with Delorme Benites (2021) and Mundt and Groves (2016), they also argue that MT cannot replace foreign language teachers altogether. Furthermore, Crossley (2018) emphasizes the potential of MT to reduce the need for foreign language learning. Nonetheless, the scholar concedes that the impact on second language teaching and learning might be less substantial, because mastering additional languages will remain essential for individuals moving to another country or region, and for those living in multilingual societies.

Teachers also report a lack of guidelines and training on how to use MT effectively in the classroom (Delorme Benites et al., 2021; Merschel & Munné, 2022), expressing a desire for more guidance in this area (Merschel & Munné, 2022). For example, teachers may not be aware of the potential benefits of MT beyond beginner levels (Kelly & Hou, 2019). Additionally, there may be a lack of consensus among teachers regarding understanding and enforcement of academic honesty policies and penalties for violations to these policies (Correa, 2011). Moreover, teachers may encounter difficulties distinguishing between MT-generated texts and those written by students themselves (Stapleton & Leung Ka Kin, 2019). These concerns could potentially be addressed in MT training for teachers (Bowker, 2020a; Bowker, 2020b).

Furthermore, teachers concerns about the quality of MT output persist despite substantial improvements in MT models in recent years. In fact, Godwin-Jones (2022) points out that constantly changing MT, driven by AI, have improved to the point where teachers should not be able to cite inaccuracy as a reason to avoid it anymore, though they still do (see Henshaw, 2020). As a case in point, after Stapleton and Leung Ka Kin (2019) revealed to teacher participants that they had been unable to distinguish between student writing and MT-generated text, most teachers in the study still believed MT output to be of low quality and unreliable (Stapleton & Leung Ka Kin, 2019). On a related note, although the study took place prior to the introduction of AI-powered MT, Jolley and Maimone (2015) found that teachers rated the reliability of Google Translate lower than students did, indicating that students may have recognized the improvements in MT output faster than teachers. The teachers did acknowledge, however, that MT had become fairly accurate for simple translations, but it lacked the capacity to convey nuanced meanings or produce more complex grammatical structures (Jolley & Maimone, 2015). In a more recent study, Delorme Benites et al. (2021) found that foreign language teachers were satisfied with MT output 65% of the time, which corroborates concerns other teachers have expressed about MT accuracy and quality (Ducar & Schocket, 2018; Kelly & Hou, 2021). A more critical take on the accuracy of MT was presented by Hofstadter (2018) who demonstrated the inadequacy of Google Translate to produce quality translations of more complex texts due to the fundamental truth that its algorithms, powerful as they are, cannot really understand human language.

In another dimension of the drawbacks of MT, some teachers perceive that MT use hinders students' progress in learning the target language (Clifford et al., 2013;

Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022), claiming that MT strips students of the motivation to try because it does the hard work for them (Alm & Watanabe, 2021). Others suggest if they teach students how to use MT more effectively by pre-editing L1 input, they will never learn to write in the L2 (Bowker, 2020a). The concern is that students will develop dependence on MT without exercising critical thought (Faber & Turrero-Garcia, 2020), resulting in shortcuts for completing assignments that undermine learning and encourage students to become passive users of the technology rather than active and critical explorers of the language (Klekovkina & Denié-Higney, 2022; Stapleton & Leung Ka Kin, 2019). Furthermore, some teachers hold that liberal and decontextualized use of MT encourages the view that languages can be reduced to mere linguistic equivalents, erasing the cultural nuances of languages, and eliminating the need to learn a foreign language at all (Lyddon, 2018; Ryu et al., 2022).

Another salient point from the literature indicates that teachers are skeptical about the efficacy of MT as a tool for language learning (Merschel & Munné, 2022; Lee & Briggs, 2021; Xu, 2022). Merschel and Munné (2022), for instance, found that 77% of teachers considered MT "not useful" for L2 development, while 84% considered it "useful" only for teachers to show students the limits of this technology. Similarly, Jolley and Maimone (2015) reported that only 30% of the teachers they surveyed thought MT had a positive impact on language learning. Other scholars cite teachers' views that MT does not promote long-term gains nor mastery of advanced levels in the target language even if it can produce quick results in the moment (Klekovkina & Denié-Higney, 2022; Lyddon, 2018; Xu, 2022). Correa (2014) further proclaimed that MT-generated texts have "no instructional value" (McCarthy, 2004, n.p., as cited in Correa, 2014, p. 4),

because using MT not only prevents students from developing L2 skills but also produces low quality output, resulting in low grades, and constitutes a violation of academic integrity (see also Xu, 2022). Furthermore, some educators note that using MT promotes reliance on translation as a means for language learning, a practice that goes against certain teaching norms that discourage translation in L2 writing. This contradiction leads some teachers to question the value of integrating MT into their pedagogy (Lee & Briggs, 2021; Stapleton & Leung Ka Kin, 2019).

How MT is Used by Students and Teachers

Many studies emphasize how MT is used by both students and teachers. Developing a greater understanding of how MT applications are being used for language learning and practice has the potential to inform pedagogy and policy around their formal adoption in language classrooms, which is, ultimately, the direction in which the literature is pointing.

How MT is Used by Students

According to several studies, language students admit to using MT at increasingly higher levels, reaching all or nearly all students surveyed in more recent studies (Delorme Benites et al., 2021; Knowles, 2022; Ryu et al., 2022; Valijärvi & Tarsoly, 2019). Earlier studies also report high percentages of student use, including 88% of students of various foreign languages at Duke University in 2013 (Clifford et al., 2013) and 93.6% of Thai learners of English in in 2014 (Sukkhwan, 2014). Frequency rates of MT usage have also purportedly increased in recent years, with most students using it on a regular basis for various purposes on their smartphones and computers (Alm & Watanabe, 2021; Delorme Benites et al., 2021; Ryu et al., 2022; Valijärvi & Tarsoly, 2019). For many, MT has

become a fixture for academic purposes and day-to-day communication in multilingual settings. Delorme Benites and colleagues (2021), for example, discovered that among language students and faculty at a Swiss university, 94.8% of teachers and 97.2% of students were using MT for academic purposes as well as for private or non-academic reasons. Similarly, Kelly and Hou (2021) found that multilingual students in Northern Ireland had integrated MT into their everyday use of different languages, especially to facilitate communication in their home language with non-English-speaking family members.

Studies including a wide variety of participants, from middle school English learners to university learners of various languages, also reveal that students tend to use MT much more critically than teachers may suppose. In several instances, students explained their apprehension about any MT-generated text and described making slight adjustments to manipulate the results to increase accuracy and get the desired output, rather than indiscriminately copying and pasting translated text (Alm & Watanabe, 2021; Clifford et al., 2013; Kelly & Hou, 2021; Lee, 2020; Sukkhwan, 2014; Ryu et al., 2022; Xu, 2022). Many students also described cross-referencing MT output by consulting teachers, peers, and reference books or websites (Alm & Watanabe, 2021; Chang, 2022; Chen, 2020; Ryu et al., 2022), demonstrating strategic and critical interaction with MT tools to help them produce coherent L2 writing (Klekovkina & Denié-Higney, 2022; Lee, 2021).

Several studies report that one of the most frequent uses for MT among students is to look up new vocabulary words (Bahri & Mahadi, 2016; Chen, 2020; Clifford et al., 2013; Garcia & Pena, 2011; Klekovkina & Denié-Higney, 2022; Mirzaeian, 2021; Niño,

2009; Ryu et al., 2022; Valijärvi & Tarsoly, 2019; Xu, 2022), often while acknowledging that they do not fully trust MT output for words with multiple meanings (Chen, 2020). For example, undergraduate Chinese learners of English reported vocabulary use as the most beneficial aspect of MT (Tsai, 2019). Likewise, 91% of students studying a foreign language at Duke University reported using MT for vocabulary (Clifford et al., 2013). While using MT to look up words appears to be the most commonly reported use of MT, in Ahn and Chung's (2020) sample of Korean learners of English, it was found that students at higher proficiency levels turned to MT for vocabulary more often than students at lower proficiency levels, though the same students accepted MT outputs at lower rates than their peers with less developed English mastery. Ahn and Chung (2020) suggest these results may reflect the students' ability to use MT more critically as their proficiency improves.

Several studies indicate that most students tend to use MT as a dictionary to look up single words (Clifford et al., 2013; Jin & Deifell, 2013; Jolley & Maimone, 2015; Niño, 2009; Pellet & Myers, 2022), with some expressing mistrust for sentence-level and higher translations (Chen, 2020). In fact, when university Spanish learners were asked which online dictionary they used to look up Spanish words, an overwhelming majority cited MT applications as dictionaries, while only 9% reported using a genuine online dictionary (Faber & Turrero-Garcia, 2020). In another study, Jin and Deifell (2013) found similar results, indicating that students may be confused when teachers tell them they are allowed to use online dictionaries while at the same time prohibiting the use of MT applications.

In other studies, undergraduate students learning Spanish in Australia indicated they primarily used MT to look up single words (Garcia & Pena, 2011); Iranian learners of English reported using MT more often than online dictionaries when looking up the meanings of words (Mirzaeian, 2021); students at University College London studying Hungarian and Finnish reported using MT in place of a dictionary, because it was quicker and easier to use (Valijärvi & Tarsoly, 2019); students studying French in the United States indicated primarily using MT to look up words and phrases they had not seen in their textbooks (Pellet & Myers, 2022); and the reportedly most common use of MT among both native English-speaking learners of Korean at a U.S. university (Ryu et al., 2022) and Thai learners of English in Thailand (Sukkhwan, 2014) was as a dictionary, to look up and learn new vocabulary. Further, a study of middle and high school English learners in Northern Ireland found that several students kept a record of key words they heard at school and then translated them using MT when they arrived at home (Kelly & Hou, 2021). On a similar note, in a case study of fourth-year students learning Japanese at a U.S. university, Xu (2022) discovered not only that students were using MT as a dictionary but also as a thesaurus. Students explained that MT helped them find alternative words that were more formal or academic to use in their writing than the words they might have had in their own Japanese lexicon.

Some scholars describe the behavior of using MT as a dictionary to be a reflection of metalinguistic competence, as students consciously and deliberately use it to monitor their comprehension (Karnal & Pereira, 2015). However, Urlaub and Dessein (2022) claim that the most inefficient method of utilizing today's MT technology is to enter individual words, as the AI-powered machine translation algorithms use contextual

information at the sentence level to precisely anticipate words that may have multiple meanings in different contexts. They further suggest that with proper guidance and instruction, students can learn to use MT more effectively and derive greater benefits from it, allowing them to make the most of this powerful tool (Urlaub & Dessein, 2022; Valijärvi & Tarsoly, 2019). Likewise, Chen (2020) found many Chinese learners of English enhanced their use of MT by shifting from word level translations to sentence level translations after receiving direct instruction. Moreover, Lee (2020) reported that, after guided MT use, students recognized MT tools translated words in context. They learned that by entering a word in the context of a sentence, MT could give them a more accurate translation than a dictionary (Lee, 2020).

Language students also commonly use MT to facilitate L2 reading comprehension beyond the word level, extending its use to the translation of entire sentences, entire assigned texts, or to help them understand instructions for course assignments (Ahn & Chung, 2020; Alm & Watanabe, 2021; Bahri & Mahadi, 2016; Chen, 2020; Clifford et al., 2013; Niño, 2009; Sukkhwan, 2014). In a study by Clifford et al. (2013), 60% of students reported using MT to translate from the target language to their L1 to read a text or to understand the instructions of an assignment. As Valijärvi and Tarsoly (2019) noted, some students mentioned using MT to make foreign language texts accessible so they could get the overall idea before moving forward with the reading (Valijärvi & Tarsoly, 2019). Similarly, Kelly and Hou (2021) found that some English learners used MT to understand more specialized course content or to facilitate English reading for classes for which they may have lacked the vocabulary or background knowledge necessary to understand the complex English texts. They further suggested that newly arrived English

learners used MT as a survival tool to help them gain access to course instruction and curricula in addition to communication with teachers and peers (Kelly & Hou, 2021). Likewise, Sukkhwan (2014) found that many students relied on MT to translate in-class texts to help them understand what was happening in the classroom. Moreover, Niño (2009) contended that the most popular use of MT among language students might be for reading comprehension and to make reading accessible in another language. The popularity of MT among language students may, according to Maghsoudi and Mirzaeian (2020), spark the need for language educators to reconsider the role of translation in foreign language reading comprehension.

Another frequently reported use for MT among language students is to support their L2 writing (Ahn & Chung, 2020; Alm & Watanabe, 2021; Bahri & Mahadi, 2016; Chung & Ahn, 2021; Clifford et al., 2013; Jolley & Maimone, 2015; Kennedy, 2021; Klekovkina & Denié-Higney, 2022; Lee, 2020; Lee & Briggs, 2021; Mirzaeian, 2021; Niño, 2009; Sukkhwan, 2014; Tsai, 2019; Xu, 2022). Ahn & Chung (2020) found that students considered MT most helpful during the writing process, rather than in pre-writing or post-writing stages. This preference is also reflected in other studies in which students reported comparing machine-generated translations to their own L2 writing to find more fitting words (Chen, 2020; Kennedy, 2021; Sukkhwan, 2014), using MT to look up short phrases to monitor for meaning and accuracy (Ryu et al., 2022), or simplifying their L1 writing to attempt to get more accurate L2 output from the MT tool (Lee, 2020). Jolley and Maimone (2015) found writing assignments to be the highest reason students reported using MT (85%), while Tsai (2019) reported that the second biggest use of MT among students surveyed was to help them to complete writing

assignments, and 90% of participants in Chung and Ahn's (2021) study reported that MT benefited their writing and that they planned to use it in the future for this purpose. Furthermore, in Merschel and Munné's (2022) study, world language teachers recounted that students may have been using MT during online collaborative spontaneous writing tasks (Merschel & Munné, 2022).

Despite expressing an awareness that MT is limited in its ability to provide feedback on grammar or to help them learn grammatical concepts (Valijärvi & Tarsoly, 2019), students still tend to use MT to check and revise their writing (Clifford et al., 2013; Klekovkina & Denié-Higney, 2022; Lee, 2020; Mirzaeian, 2021; Xu, 2022) and to produce more accurate L2 text (Kennedy, 2021; Lee & Briggs, 2021). In a comparison of English learners by proficiency level, Ahn and Chung (2020) found that higher proficiency level students tended to use MT more often to check their writing in a post-editing process compared to those at lower proficiency levels (Ahn & Chung, 2020). And Xu (2022) described the case of one student who used MT to proofread her L2 writing for clarity and to remind her of language forms she had previously learned but could not remember on her own during the writing process (Xu, 2022).

Furthermore, in a study of New Zealand university students, who were studying several different foreign languages, Alm and Watanabe (2021) found that students tended to use MT critically as a writing support rather than to avoid L2 writing altogether. This finding offers support to the claim that students have begun to find ways to use MT to assist their language learning rather than to replace it. Similarly, Chen (2020) found that many students used MT to get an initial draft of the texts they needed to translate from English to Chinese, so they could have something to work with to guide their own

translation process (see also Niño, 2009), while Kennedy (2021) found that students used MT to proofread their self-written L2 texts prior to submission. In contrast, however, Rohmana et al. (2023) found that 66.7% of Indonesian learners of English in their study reported writing their assignments in their L1 and translating them in their entirety into English before submitting them for a grade, and Xu (2022) reported that students did, at times, accept MT outputs without engaging in any post-editing. Further, Klekovkina and Denié-Higney (2022) recounted suspecting many of their French students had used MT to write full paragraphs based on their use of language forms the students had not yet learned.

Some studies also show that many students use MT to help them prepare for oral presentations and assessments (Clifford et al., 2013; Jolley & Maimone, 2015; Merschel & Munné, 2022) and to practice L2 pronunciation (Alm & Watanabe, 2021; Klekovkina & Denié-Higney, 2022). However, not all language learners have found MT useful for thse purposes, as Bahri and Mahadi (2016) indicated that international students learning Bahasa Malaysia at Malaysian university did not find the pronunciation feature of MT helpful for this particular language. Likewise, Knowles (2022) found that students learning Spanish considered Google Translate not beneficial for learning pronunciation.

How MT is Used by Teachers

Fewer studies report how teachers use MT compared to those showing the varieties of student MT use, the research that has been conducted reports different patterns of MT use among teachers in monolingual compared to multilingual settings. For instance, Clifford et al. (2013) established that foreign language faculty at Duke University, in the United States, reported notably low percentages of MT use for both

professional (5%) and personal (7%) reasons. A more recent study of foreign language teachers at a New Zealand university (Alm & Watanabe, 2021) showed that 50% of language teachers reported some degree of familiarity with MT, 25% identified themselves as occasional users for communication with others both professionally and personally, and few had suggestions for how students could use MT to support their L2 writing. Likewise, in another recent study (Merschel & Munné, 2022), only 11.6% of educators of world languages from 42 different U.S. states reported "frequent" use of MT for academic purposes, while another 48.8% reported "infrequent" use. They also found that 8.4% of the teachers reported "frequent" use of MT for non-academic purposes and 60.5% reported infrequent use. All other teachers in the study said they never used it.

In contrast, in a 2009 survey of teachers of foreign languages across several European countries, and representing native speakers of Spanish, English, French, Italian, German, Polish, Dutch, Japanese, and Finnish, 60% reported frequent use of MT, 93% were familiar with it, and only 17% reported having never used it (Niño, 2009). Participants in the study used MT for several different reasons, including mere curiosity, to get a first draft of a piece of writing, or to read texts in other languages. Some also said they used it as an example of the limitations of MT for students. Others said they used it to communicate with speakers of other languages via text or email, for an English course, or for their own research (Niño, 2009). Similarly, in a more recent European study (Delorme Benites et al., 2021), high percentages of faculty and staff (94.8%) at a Swiss university reported using MT on a regular basis for both professional and personal reasons. Among the top professional uses cited in the study were translating emails (80.6%), presentations (55%), reports (48.9%), and articles (47.5%) (Delorme Benites et

al., 2021). While these few studies may not provide sufficient data to show a true comparison of patterns of use between predominantly English-speaking monolingual societies, such as the United States and New Zealand, compared to non-native English-speaking and multilingual societies, like the European countries included in the studies cited above, there does appear to be more MT use among educators in the latter compared to the former.

Another theme regarding teacher use of MT in the literature is the discrepancy between students' frequent and varied use of MT compared to teachers' relatively low integration of it into their teaching. Despite teachers reporting some use of MT outside of their classes, for example, Alm and Watanabe (2021) noted that foreign language teachers in New Zealand did not transfer their own use of MT to their students who reported high frequency of MT use themselves. As they reported, "Half of [the teachers] had never approached the topic of [MT] in class, and none included guidelines… in their course outlines, leaving students guessing about the appropriateness of using [MT] for their written work" (Alm & Watanabe, 2021, p. 26). In like manner, Jolley and Maimone (2015) found that only 7.69% of Spanish teachers from six different U.S. universities indicated that they had integrated MT into an assignment in their classes (Jolley & Maimone, 2015).

On the other hand, Kelly and Hou (2021) observed that teachers in several secondary schools in Northern Ireland relied on MT when interacting with newly arrived English learners and encouraged and supported the students to use it on their own. They also found that classroom aids would use MT to translate key words from students' classes and then provide the word lists to students with lower levels of English

proficiency (Kelly & Hou, 2021). However, teachers had not integrated MT into the curriculum nor did they teach the students strategic MT use (Kelly & Hou, 2021). Similarly, Merschel and Munné (2022) reported that some teachers encouraged students to keep lists of words they had looked up using MT. They then advised students to use a dictionary to learn more about these words and discussed the reasons why relying solely on MT tools it is not advisable when learning a language.

More formal integration of MT into teaching, however, was reported by Niño (2009) who found that 23% of foreign language teacher participants had used MT in their language classes for various purposes, including writing practice with students, revision exercises, assessments, reading comprehension, and to put translation theory into practice. All who used it indicated they would include it in their classes in some way in the future as well (Niño, 2009).

Several additional studies involving MT as an intervention in language classes have been carried out by educators, providing examples of how some educators are attempting to integrate MT into their teaching (Chen, 2020; Chung & Ahn, 2021; Faber & Turrero-Garcia, 2020; Fredholm, 2019; Garcia & Peña, 2011; Giannetti, 2016; Mirzaeian, 2021; Niño, 2009; Lee, 2020; Lee & Briggs, 2021; O'Neil, 2013; O'Neil, 2014; O'Neil, 2016; Ryu et al., 2022; Shei, 2002; Tsai, 2019; Tsai, 2022; Vogel et al., 2018; Xu, 2022). However, rather than providing more general data about how educators use MT tools, the existence of these studies highlights the need for more research to explore the potential benefits of MT-inclusive pedagogy and to provide language teachers with instructional models that can inform their own MT-integrated instruction that addresses the needs of their student populations.

Benefits of MT Use for Language Learning

Several studies have identified numerous advantages of MT use in a language learning setting, including its convenience and accessibility; potential for fostering decreases in students' cognitive load and anxiety, and increases in confidence and metalinguistic awareness; facilitating reading comprehension; and providing support for L2 writing.

Convenience

One of the more obvious advantages of MT, not to mention a primary driver of its popularity, is its convenience in terms of accessibility, ease of use, and efficiency (Ahn & Chung, 2020; Clifford et al., 2013; Fredholm, 2019; Karnal & Pereira, 2015; Lee, 2020; Niño, 2009; Sukkhwan, 2014; Valijärvi & Tarsoly, 2019; Xu & Wang, 2011). The fact that MT apps are available free of charge online and on multiple devices makes them extremely convenient to access and provides students with alluring alternatives to bilingual dictionaries and grammar books that they may find cumbersome, outdated, and inefficient (Crossley, 2018; Niño, 2009). Language learners report that MT is easier than using a dictionary to look up word meanings, detect and correct errors, and learn new vocabulary (Fredholm, 2019; Ryu et al., 2022; Sukkhwan, 2014).

Urlaub and Dessein (2022) describe the convenience of MT as an enticing technology that enables communication across languages without the need for extensive study. Language learners tend to recognize the limitations of MT applications and drawbacks to using them, but they are willing to tolerate or overlook inaccuracies in favor of convenience and efficiency (Hofstadter, 2018; Valijärvi & Tarsoly, 2019; Urlaub & Dessein, 2022; Xu & Wang, 2011). Some scholars also mention students may

be drawn to MT due to the alluring promise of not having to dedicate hundreds of hours to gain proficiency in order to communicate in another language (Ducar & Schocket, 2018; Urlaub & Dessein, 2022).

Crossley (2018) expounds that MT can be effortlessly accessed on different devices and provides advanced text translation of multiple languages through both voice and text input and output. The latest MT technologies are also equipped with optical character recognition capabilities that can perform live translations of stationary text via a smartphone's camera, which proves especially useful when reading foreign language street signs, menus, and other frequently encountered texts. Furthermore, while it still has its flaws, machine translation in real-time using a smartphone is constantly improving, enabling machine-mediated communication that is very close to simultaneous translation (Crossley, 2018). The possibility of accurate simultaneous audio translation has substantial implications for language learning, both positive and negative, not to mention how it might influence international travel as well as multinational cooperation in commerce, government, and transnational education.

Decrease in Cognitive Load

Some scholars have claimed that when language learners use MT applications they experience a corresponding decrease in cognitive load, affording them more brain power to focus on meaning-making as they interact with texts in the target language (Chung, 2020; Giannetti, 2016; Karnal & Pereira, 2015; Lee, 2020; Lee & Briggs, 2021; Maghsoudi & Mirzaeian, 2020; Ryu et al., 2022). In Karnal and Pereira's (2015) study of university level English learners, for example, participants employed a different set and a larger number of strategies when using an online translator such as Google Translate to

read English texts compared to reading without MT assistance. The researchers claimed that using an online translator enabled the participants to allocate more cognitive resources to understanding the text by simplifying the process of accessing meaning, which particularly benefits novice and intermediate language learners (see also Giannetti, 2016).

Additional studies likewise claim that MT use can reduce cognitive load while students engage in writing in their L2, maintaining that MT can help students to address micro-level issues such as spelling, word choice, and accurate grammar, allowing them to devote more attention to macro-level revisions, like overall meaning and content, organization and fluency, and clear communication (Garcia & Peña, 2011; Lee, 2020; Lee & Briggs, 2021; Niño, 2008; Ryu et al., 2022; Tsai, 2020). MT use can facilitate students to approach writing as a process of meaning construction and use their time more efficiently. By implementing these strategies, students can feel less overwhelmed and disengaged from the writing process, allowing them to focus more on the content and organization of their writing and leading to better learning outcomes.

Reduced Anxiety/Increased Confidence

Many scholars claim that another advantage of MT is that it can help reduce students' anxiety and increase their confidence in language learning settings. Klekovkina and Denié-Higney (2022) hold that some students turn to MT to assuage their anxiety related to speaking in a foreign language. Students may believe a lack of proficiency in the L2 is a reflection of their intelligence, so they rely on MT to ease their worries (see also Selcuk et al., 2019, as cited in Jolley & Maimone, 2022). Certainly, while the widespread use of MT is relatively new, students' feeling anxiety in a foreign language

learning setting is not. In fact, several studies discuss the the psychological stress related to learning and communicating in another language that can impact a student's academic performance and self-concept (Horowitz, 1986; Krashen, 1982; Morley, 1991; Olivas & Li, 2006). It may be that allowing students to use MT can help to create a learning environment that minimizes anxiety and fosters confidence and motivation for effective language learning (Klekovkina & Denié-Higney, 2022).

Several scholars have, in fact, claimed that using MT can contribute to a nonthreatening and low stress learning environment in which students feel less pressure to produce perfect L2 writing (Niño, 2009; Tsai, 2020). The use of MT can reduce errors in spelling, vocabulary, and grammar, allowing students to focus more on making meaningful revisions to their work on a more macro level (Lee, 2020; Lee & Briggs, 2021). Furthermore, because MT provides objective nonjudgmental feedback, students might be less defensive and more comfortable using MT for revisions than with getting feedback from a teacher or from peers (Lee, 2020). Relatedly, Valijärvi & Tarsoly (2019) found that integrating MT into foreign-language teaching can be beneficial for students as it encourages them to use the tool independently and critically while removing any guilt they may feel about using technology to assist them in their language learning (see also Lee, 2021).

Additionally, using MT can improve students' motivation (Maghsoudi & Mirzaeian, 2020; Ryu et al., 2022; Shei, 2002) and increase their confidence in L2 writing (Ahn & Cheng, 2020; Niño, 2008; Niño, 2009; Ryu et al., 2022; Xu, 2022), which can lead students to develop positive writing strategies (Lee, 2020). Notably, Ryu et al. (2022) found that students who received direct instruction in using MT as a

language learning tool reported increased confidence and motivation because they could see they were making progress in L2 development, whereas prior to the training they were unsure about whether they were making progress. Such findings suggest that an inclusive approach to MT has the potential to help students become less anxious about foreign language performance and more confident and motivated language learners.

Metalinguistic Awareness

Some scholars claim that utilizing MT in language education can also foster students' metalinguistic awareness (García & Peña, 2011; Lee, 2020; Lee & Briggs, 2020; O'Neill, 2016; Pellet & Myers, 2022; Ryu et al., 2022; Shei, 2002; Tsai, 2019; Valijärvi & Tarsoly, 2019) and translation competence (Shei, 2002). Direct instruction and guided use of MT can develop students' awareness of language patterns, connections between form and meaning, and word selection (Lee, 2020; Pellet & Myers, 2022). Some also posit that strategic integration of MT into language learning can improve vocabulary and grammar comprehension, enhance reading and writing abilities, and ultimately promote language acquisition (Niño, 2009; Shei, 2002). According to Godwin-Jones (2022), introducing MT in the classroom has the advantage of incorporating students' L1 into the learning process to compare it with the L2, providing students opportunities to gain metalinguistic awareness of the similarities and differences between their L1 and the target language. What is more, providing students with guidance on how to examine MT texts can give them exposure to commonly used patterns of language that move beyond the study of grammar rules and isolated vocabulary to develop an awareness of how the L2 is actually used (Kelly & Hou, 2021; Leung & Valdes, 2019; Vogel et al., 2018). In addition, some scholars report that students exposed to multiple translation options can

develop the awareness that various forms or expressions can convey the same meaning and that no single translation is absolute (Bowker, 2020; Carreres & Noriega-Sánchez, 2011; Chen, 2020; Chung & Ahn, 2021; Lee, 2020). Ultimately, guided MT use may play a role in developing students' metalinguistic awareness of the L2, which has been shown to be positively linked to L2 proficiency (Enkin & Mejias-Bikandi, 2016).

Reading Comprehension

Another advantage of MT identified in the literature is that it can be used as an efficient tool for enhancing students' L2 reading comprehension. MT tools provide language learners with an easily accessible and portable means to interact with texts, access class materials, and engage with lessons and assignments (Clifford et al., 2013; Giannetti, 2016; Kelly & Hou, 2021). In 2008, Niño suggested that even flawed unedited MT output could be used for basic comprehension of texts written in unknown languages. More recently, with substantial advances in the accuracy of MT output, Maghsoudi and Mirzaeian (2020) found no difference in reading comprehension between those who read machine-translated texts and those who read human-translated texts among university English learners in Iran. Others have found that MT can aid students in literary interpretation (Abdi & Cavus, 2019, as cited in Abdulaal, 2022). These findings provide support for MT as a tool for non-native English-speaking university students to access complex academic content.

Additional studies suggest that when students use MT in a strategic manner, it can assist them in decoding unknown words and enhancing their overall reading comprehension (Alhaisoni & Alhaysony, 2017, as cited in Lee & Briggs, 2021). Karnal and Pereira (2015) found that PhD students at intermediate levels of English proficiency

who used MT when reading academic texts achieved a greater level of comprehension that those who did not. Based on their findings, they assert that strategically using MT to assist with reading comprehension not only ensures readers' will attain a deeper understanding of the text but also increases their decoding and metacognitive skills as they confirm or disconfirm inferences rather than merely glossing over unknown words. They also claimed that using MT is more beneficial than using a dictionary because of its speed and convenience, making MT less taxing on working memory and cognitive load and allowing for fewer interruptions so readers can focus on meaning. The strategic use of MT can, therefore, facilitate reading comprehension for students at a basic or intermediate level to help them attain a level of understanding matching that of more advanced learners. This is especially appealing to English learners who must engage with academic, technical, and expository texts in higher education settings (Maghsoudi & Mirzaeian, 2020; O'Brien, Simard & Goulet, 2018, as cited in Maghsoudi & Mirzaeian, 2020).

MT as a Support for Student L2 Writing

Several studies report the advantages of using MT for improving L2 writing, highlighting its usefulness in finding new vocabulary (Ahn & Chung, 2020; Chung & Ahn, 2021; Fredholm, 2019; Garcia & Peña, 2011; Giannetti, 2016; Lee, 2020; O'Neill, 2016; Ryu et al., 2022; Tsai, 2019; Tsai, 2022) and context-specific word choice (Lee, 2020), checking grammar and writing basic syntax (Ahn & Chung, 2020; Chung & Ahn, 2021; Giannetti, 2016; Lee, 2020; Mirzaeian, 2021; O'Neill, 2016; Tsai, 2019; Tsai, 2022), as well as writing longer passages (Ryu et al., 2022; Tsai, 2019) and communicating ideas more clearly (Garcia & Peña, 2011; O'Neill, 2016; Tsai, 2019;

Tsai, 2022), particularly at lower levels of mastery (Garcia & Peña, 2011). Additionally, some studies show that when paired with direct instruction on its strategic use, MT can offer learners instant individualized feedback to help them detect and fix errors in their writing (Kennedy, 2021; Lee, 2020; Lee & Briggs, 2021). Other studies have noted that students regard MT as convenient and a time saver when writing in their L2 (Ahn & Chung, 2020; Chung & Ahn, 2021). Some scholars and educators also propose that MT output can provide a draft to use as a starting point to practice L2 writing through post-editing (Cheng, 2020; Lyu, 2020; Jiménez-Crespo, 2017; Niño, 2008; Niño, 2009; Zhang, 2022).

Looking at the use of MT for L2 writing from a different angle, O'Neill (2019) aimed to answer the question of whether learners who use online translation outscore those who use online dictionaries. The results of the study showed that students who used online translation received higher scores than those who used online dictionaries, regardless of prior training, suggesting that using online translators may help students to write better in their L2 than using online dictionaries (O'Neill, 2019).

Beyond the demonstrable improvements to students' L2 writing, scholars also claim that engaging with MT for revision can help students recognize writing as a process (Lee, 2020; Lee & Briggs, 2021; Ryu et al., 2022; Tsai, 2022). Furthermore, as mentioned earlier, some claim that MT can help alleviate anxiety related to language learning, allowing students to focus on content, organization, and writing fluency rather than just linguistic features. Some scholars have also found that using MT can foster self-directed and independent learning skills related to L2 writing (Lee, 2020; Lee & Briggs,

2021; Ryu et al., 2022; Xu, 2022), which are crucial to developing proficiency in a foreign language.

Drawbacks of MT use for Language Learning

Prior to the emergence of neural MT models in 2016, many educators were skeptical about the usefulness of MT in foreign language teaching and learning. Studies during that time cited several limitations to MT, such as the poor quality of translations (Correa, 2014; Niño, 2009; Shei, 2002; Sukkhwan, 2014), its unsuitability for creative texts (Niño, 2009), the need for extensive training, and its ineffectiveness with novice and intermediate students (Niño, 2009; Shei, 2002). Other limitations noted by educators included MT's excessive focus on form, the risk of over-correction, unreliable outputs, and the high workload required to use it for relatively poor results (Correa, 2014; Niño, 2009; Shei, 2002). In general, educators had reservations about the effectiveness of MT in supporting foreign language teaching and learning.

However, the 2016 introduction of AI-powered neural MT tools, such as Google Translate, transformed the situation. These new versions of MT are more precise and efficient than their predecessors, and they have the potential to revolutionize foreign language teaching and learning. Still, several disadvantages remain, including inaccurate translations of culturally nuanced language, the potential for students to reduce language to mere translation, and variable reliability of output depending on text genre. Furthermore, fears among educators that MT use will hinder language learning also persist.

Culturally Nuanced Language

Several studies have reported that MT often faces limitations in providing cultural equivalents in the target language. As a result, references that rely on context, culturally specific association or meaning, and specialized discourse or formality may not be accurately translated (Ahn & Chung, 2020; Al-Tuwayrish, 2016; Awadh & Khan, 2020; Chung & Ahn, 2021; Faber & Turrero-Garcia, 2020; Lee, 2020; Maghsoudi & Mirzaeian, 2020; Mundt & Groves, 2016; Stapleton & Leung Ka Kin, 2019; Tongpoon-Patanasorn & Griffith, 2020). Research has shown that MT struggles to translate idiomatic expressions and cultural references without human intervention and input (Abdulaal, 2022; Al-Tuwayrish, 2016; Awadh & Khan, 2020; Chen, 2020; Correa, 2014; Chung, 2020; Ducar & Schocket, 2018; Hofstadter, 2018; Lee & Briggs, 2021; Niño, 2009; Shei, 2002; Stapleton & Leung, 2019). Critics have also noted that MT tends to generate literal translations that preserve the structure of the text, often leading to nonsensical phrases that do not convey the intended meaning accurately (Chung, 2020; Correa, 2014; Lee, 2020; Niño, 2009; Shei, 2002; Urlaub & Dessein, 2022).

Researchers report that, despite considerable improvements in MT output over time (Chung, 2020; Chung & Ahn, 2021; Merschel & Munné, 2022), algorithms governing MT tools still lack the ability to identify many of the subtleties and nuances of languages. Consequently, MT outputs may still contain literal translations in place of idiomatic expressions or less-frequent language forms (Hofstadter, 2018; Tongpoon-Patanasorn & Griffith 2020).

However, the limitations of MT related to culturally nuanced language are constantly decreasing due to the iterative nature of machine learning. In fact, recent

advancements in generative AI provide substantially more nuanced translations, not to mention the capacity to explain the underlying cultural significance of idioms and phrases if prompted. Tools such as ChatGPT, while not designed specifically for translation, may quickly resolve the limitations of existing MT tools that have not been able to process or accurately translate culturally nuanced language.

Reductionist View of Language Due to MT

Several scholars (Klekovkina & Denié-Higney, 2022; Godwin-Jones, 2022; Ryu et al., 2022; Urlaub & Dessein, 2022; Vinall & Hellmich, 2022) suggest that students' reliance on MT may perpetuate a reductionist view of language and language learning. They claim that MT use oversimplifies language as a series of transactional exchanges, fails to recognize its sociocultural embeddedness, and discounts the complexities and gradations of human communication and its connections to identity and culture. They hold that true language proficiency, involving nuanced and context-sensitive encoding and decoding of meaning that reflects an individual's sense of belonging and identity, may be forfeited through increasing reliance on MT for cross-linguistic communication. They caution against this reductionist ideology and emphasize that language education must recognize the limits of MT and strive for a fuller understanding of the nature of language and its role in society (Lyddon, 2018; Tongpoon-Patanasorn & Griffith 2020).

Reliability of MT Output Can Vary by Genre

Some studies have identified different challenges students face when using MT to write literary texts versus argumentative texts, due to cultural and social inter-textual references and distinct writing styles that feature varying levels of vocabulary richness and syntactic complexity (Abdulaal, 2022; Ahn & Chung, 2020; Tsai, 2019). They note

that the reliability of MT varies depending on the demands of the genre, highlighting the fact that MT users should take into consideration its limitations and not solely depend on it for L2 writing assignments.

However, as with culturally nuanced language, recent advancements in generative AI have provided tools, such as ChatGPT, that can generate highly reliable translations across several genres. In fact, in a recent study, Benboujja et al. (2024) described using ChatGPT 4 to translate a video curriculum on pediatric healthcare from English to Spanish to address gaps in medical training in under-resourced Spanish-speaking areas around the world. The researchers proposed that the same process could be used to make life-saving and life-improving medical training accessible in multiple languages and geographic locations. Importantly, however, the authors did emphasize that the AI-generated translations were still painstakingly reviewed by native Spanish-speaking medical professionals to ensure accuracy.

MT May Hinder Language Learning and Acquisition

In a recent review of the literature on MT in language teaching and learning, Jolley and Maimone (2022) concluded that it remains uncertain whether using MT helps or hinders L2 learning or acquisition, and the findings of Knowles (2022) corroborate this conclusion. When evaluating MT for L2 learning, most studies focus primarily on immediate changes in student writing without measuring long-term improvements in their writing skills, lexical development, or grammatical understanding. Due to this lack of long-term evidence, some doubt that short-term improvements in writing quality through MT use will lead to permanent gains in language development (Klekovkina & Denié-Higney, 2022; Tsai, 2019; Xu, 2022).

However, O'Neill's (2016, 2019) studies of undergraduates learning French as a foreign language provide evidence that MT use may not have adverse long-term effects. O'Neill (2016) found that students who were allowed to use MT performed better than those who were restricted from using it, but there was no significant difference among groups in a delayed posttest. O'Neill (2016) concluded MT might help students improve certain features of L2 writing (e.g., comprehensibility, spelling, and grammar) and that it did not have a negative impact over time. In a follow-up study, O'Neill (2019) investigated the potential long-term effects of using MT compared to using online dictionaries by giving a final writing task as a delayed posttest to participants several weeks after the initial posttest that showed more positive results for MT users over online dictionary users. O'Neill (2019) hypothesized that any remaining statistically significant differences between the groups could indicate long-term positive effects of using MT tools. The study found that, unlike in the initial posttest, the delayed posttest showed no significant differences in the writing task scores between groups, which suggests that the effects of using MT tools may not last long after training on their use has ended. At minimum, O'Neill's (2016, 2019) findings indicate that MT use may not be as detrimental to language learning as many have feared, offering support for integrating it into language pedagogy rather than prohibiting it.

Similarly, in a study that spanned a full academic year, Fredholm (2019) found that both students who used Google Translate and those who used paper dictionaries showed similar improvements in their written lexical variation by the end of the school year. He concluded that whether students use Google Translate or a printed dictionary may not be as important as increasing students' awareness of language structure,

improving their vocabulary in both the studied language and their native language, and providing explicit instruction to develop their overall linguistic knowledge. Moreover, Knowles (2022) found that students using Google Translate performed equally as well as those who did not. Taken as a whole, the results of these studies indicate that the use of MT tools may not have the detrimental effects on language learning that some educators suppose. Even so, there is widespread belief among language educators and students alike that overreliance on MT may impede L2 acquisition (Bowker, 2020; Ahn & Chung, 2020; Chen, 2020; Chung & Ahn, 2021; Giannetti, 2016; Sukkhwan, 2014).

Furthermore, the potential impact of MT on L2 students' motivation to learn how to write in a foreign language has frequently been cited as a strong impediment to students' L2 acquisition. Language educators warn that the allure of instant translation will rob students of opportunities to develop the analytical skills required to master an additional language (Bowker, 2020; Clifford et al., 2013; Correa, 2014; Fredholm, 2015; García & Peña, 2011; Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022; O'Neill, 2019; Ryu et al., 2022; Stapleton & Leung Ka Kin, 2019; Sukkhwan, 2014; Tarsoly & Valijärvi, 2019) that can only be acquired through dedicated time and effort (Klekovkina & Denié-Higney, 2022). Recent advancements in MT technology have heightened this concern as MT output has become largely indiscernible from text written by a human (Merschel & Munné, 2022; Stapleton & Leung Ka Kin, 2019). Of course, as Stapleton and Leung Ka Kin (2019) point out, in past generations, comparable developments in technology that made complex cognitive tasks easier, resulted in the rapid assimilation of novel technologies such as the calculator and statistical analysis software, which are now taken for granted as fixtures in their respective educational

domains. While MT can improve efficiency, fluency, and precision in students' assignments, many language educators are taking steps to mitigate uncritical use of MT in the classroom by developing novel approaches to teaching that incorporate MT in responsible ways that aim to foster language development (Bowker, 2020a; Bowker, 2020b; Klekovkina & Denié-Higney, 2022).

Integrating MT into Foreign and Second Language Pedagogy

Across the literature, there is an overwhelming call to integrate MT technologies into language teaching and learning. Educators and researchers, despite lingering resistance (Giannetti, 2016; Jolley & Maimone, 2022), have recognized that it is better to encourage responsible use of MT rather than fight against it (Bowker, 2020a; Bowker, 2020b; Delorme Benites et al., 2021; Knowles, 2022; Merschel & Munné, 2022; Valijärvi & Tarsoly, 2019). In fact, as mentioned above, some have likened MT in language learning to calculators in mathematics education, suggesting that integration be thoughtfully and intentionally orchestrated and regulated (Ducar & Schocket, 2018; Murata, 2016), including explicit training for both teachers and students (Bowker, 2020a; Bowker, 2020b; Mirzaeian, 2021). In one example of such integration, Murata (2016) highlighted that a module specifically designed for students nearing graduation with degrees in modern foreign languages included careful training on the judicious use of MT, targeting professional translation as a valuable skill for employability after graduation.

Scholars note that integrating MT tools into pedagogy will likely require a shift in mindset among language educators and students alike. Teachers will need to recognize that today's students, who have been brought up in a digital world, may perceive

technology as an extension of themselves and essential for their learning (Klekovkina & Denié-Higney, 2022). Students, with guidance from teachers, will need to appreciate that MT can be a starting point or a steppingstone in the complex learning process rather than an authoritative endpoint that removes the need for critical thought (Bavendiek, 2022; Klekovkina & Denié-Higney, 2022; Lyddon, 2018; Urlaub & Dessein, 2022; Vogel et al., 2018).

While there is still little evidence about whether MT benefits or hinders language learning over the long term, there is a general recognition among scholars that effective and strategic use of MT will be an important 21st century language skill (Faber & Turrero-Garcia, 2020). However, they also hold that MT use alone, without critical engagement or instructor guidance, is not likely to improve L2 development (Davis, 2006; Fredholm, 2019; Lyu, 2020). Furthermore, despite widespread use of MT, there is a dearth of instruction on how language students can use MT tools effectively and responsibly (Delorme Benites et al., 2021), perhaps because educators still have their doubts about whether to incorporate them into their teaching.

Nonetheless, for several years, scholars have recommended that educators incorporate MT into language teaching, with a sharp increase since the introduction of AI-powered neural MT to Google Translate in 2016. In 1995, for example, Anderson suggested allowing students to use MT tools but that instructors should provide a step-by-step guide for how to use them effectively, including cross-referencing dictionaries and other sources as well as asking students to write a report about the process to incorporate how students use MT into course assessments. Many scholars have agreed with Anderson's (1995) suggestion. Recognizing that students are already using MT without

any guidance or training (Ahn & Cheng, 2020; Fredholm, 2019; Jolley & Maimone, 2015), these scholars recommend that teachers provide students with direct and deliberate training to help them see MT's limitations (Ahn & Chung, 2020; Chung & Ahn, 2021; Ducar & Schocket, 2018; Knowles, 2022; Merschel & Munné, 2022; Niño, 2009; Ryu et al., 2022; Tsai, 2019; Urlaub & Dessein, 2022) and hone its use to optimize language learning (Bahri & Mahadi, 2016; Chen, 2020; Chung & Ahn, 2021; Clifford et al., 2013; Correa, 2014; Delorme Benites et al., 2021; Ducar & Schocket, 2018; Eser & Dikilitaş, 2017; Faber & Turrero-Garcia, 2020; Fredholm, 2019; Giannetti, 2016; Godwin-Jones, 2022; Jolley & Maimone, 2015; Klekovkina & Denié-Higney, 2022; Mirzaeian, 2021; Niño, 2009; Olkhovska & Frolova, 2020; O'Neill, 2014; O'Neill, 2019; Randall, 2006; Tsai, 2019). Similarly, some scholars also recognize that very few teachers outside of those in the field of translation have had training on how to use MT tools effectively. They suggest teachers take the time to familiarize themselves with the many features of MT applications, so they can be in a better position to help students learn to use them (Lee, 2020; Sukkhwan, 2014). Several researchers specifically recommend more training on how to integrate MT into pedagogy be offered to language teachers (Faber & Turrero-Garcia, 2020; Giannetti, 2016; Jolley & Maimone, 2015; Merschel & Munné, 2022; Mirzaeian, 2021).

Some educators have carried out the call to integrate MT into language teaching, exploring the influence of MT on structured L2 writing activities, often paired with direct instruction on how to use MT tools more effectively. O'Neill (2019), for example, compared the use of MT to using online dictionaries (OD) for L2 writing among undergraduates learning Spanish and French in the United States. The study included

three control groups. In the first control group, participants were not allowed to use MT or OD and did not receive any instruction on their use. Those in the second control group were allowed to use MT but received no direct instruction on how to use it. In the third control group, participants were allowed to use OD but received no direct instruction on how to use them. Also, two experimental groups in the study included one in which participants were allowed to use MT and received direct instruction in how to use it and another in which participants were allowed to use OD and received direct instruction on using them. Results showed that students using MT outperformed those in all other groups. Moreover, those who received direct instruction on how to use both MT and OD significantly outperformed those who did not receive such instruction, while those who received MT instruction also performed significantly better than those who received OD instruction. O'Neill's (2019) study illustrates the potential benefits not only of allowing students to use MT for L2 writing tasks but also of providing direct instruction on the limitations and affordances of MT tools to ensure students use them more effectively and responsibly.

In another example of integrating MT into language learning classes, Knowles (2022) developed what she calls the ADAPT model to guide the use of Google Translate (GT) among college students learning Spanish in the United States. ADAPT is an acronym, representing the steps in the model: A = "Amending Assignments," D = "Discussing GT," A = "Assessing with GT in mind," P = "Practicing Integrity," and "T = Training Students to Use GT" (Knowles, 2022, p. 197). The model calls for amending assignments to require students to integrate key grammar structures learned in class into their writing. These ammendments ensure students cannot merely translate their English

writing into Spanish without mindfully inserting the required elements. The model also includes frequent in-class discussions about MT to set clear expectations, help students understand its limitations, and guide them to use it effectively. Knowles (2022) reported positive reception from students regarding the ADAPT model. Moreover, the study found that students who reported using MT performed neither better nor worse than those who did not.

Many others have also conducted studies related to the integration of MT into the L2 writing process combined with direct instruction on MT use. Shei (2002), for instance, experimented with MT use among Chinese learners of English in Taiwan. In a case study using early MT applications that were prone to inaccuracies and literal translations, students were taught pre-editing techniques to increase the accuracy of the MT output from Chinese to English as well as English to Chinese. Students were encouraged to engage critically with the MT-generated text in both languages by translating several different versions of the texts back and forth, evaluating the output, and considering how it could be improved. Mirzaeian (2021) provides another example in which University students in Iran were given several instructional sessions on using Google Translate for editing their English writing, including pre-editing input and post-editing output. The training included four sessions: an introduction and overview of how to use GT, a 30-minute session on determiners, another on paraphrasing, and one more on collocations. Overall performance showed significant improvement in students' post-instruction writing. In a similar case, Niño (2009) provided direct training on post-editing MT output to undergraduate learners of Spanish in the UK. Though the contents of the training are not included in the publication, the author does include some practical examples for how

MT could be integrated into language teaching, including to support reading comprehension for beginning learners, for post-editing MT output, evaluating MT output from different genres or comparison of output from different MT applications, and learning from resulting errors (Niño, 2009).

Furthermore, Lee (2021) found that integrating MT throughout the L2 writing process, from planning to drafting to revising and peer editing, in combination with direct instruction and guidance for how to use it critically and strategically, positively impacted the metalinguistic knowledge and L2 writing confidence of Korean English learners. Similarly, Zhang's (2022) study at a university in Spain found that graduate students with Chinese as their L1 who received direct training in post-editing MT output showed significant improvement in their ability to correct several different categories of errors in sentences translated by Google into Spanish compared to a similar group of Chinese graduate students who did not receive the training.

There are also numerous examples of studies in which MT was integrated into the writing process, but no direct instruction was provided. Lee (2020) and Lee & Briggs (2021) asked students to compare their own translations of a text they had first written in their L1 (Korean) to a machine translated version of the same writing and then to revise their translations based on the comparison. This guided use of MT served as a supplement to teacher feedback in the L2 writing process and resulted in improved student output. Similarly, Tsai (2019) and Tsai (2022) asked Chinese English majors and non-English majors in Taiwan first to respond to a writing prompt in Chinese then to write a corresponding English text (not a translation but an English response to the same prompt). Students then used Google to translate the Chinese version of their writing and

used the result to help them revise their own self-written English texts. The revised versions were demonstrably better than the first self-written English drafts. Additionally, Faber and Turrero-Garcia (2020) invited university students learning Spanish to assess three different MT tools by comparing their output for the same assigned text. Students then had to choose either to accept one output or create their own translation of the provided text. In the end, most students (more than 75%) chose to write their own translation of the target text rather than adopting one of the MT versions.

While none of these examples included direct instruction on how to use MT, integrating MT into writing activities constituted a level of indirect instruction by allowing and encouraging exploration and experimentation with MT within a controlled environment. Furthermore, they all stressed the importance of teachers gaining an understanding of how MT can be effectively used in language learning, including the strengths and weaknesses of the latest versions of MT tools, and informing students to approach the use of these tools cautiously, critically, and responsibly and in conjunction with other tools and strategies (Faber & Turrero-Garcia, 2020; Lee, 2020; Lee & Briggs, 2021; Tsai, 2019; Tsai, 2022).

Several models of how researchers and educators have integrated MT into teaching through authentic translation tasks are also represented in the literature. Lyu (2020), for example, provided a framework for building translation competence in undergraduate business English majors in China focused on training students how to post-edit MT output using different translation strategies for different types of information (e.g., factual, descriptive, evaluative, cultural, etc.) for optimal transmission of the intended message in a professional setting. Similarly, in a case study by Ribeiro et

al. (2015), students in their final year of a Business Communication degree at a university in Portugal engaged in simulated professional intercultural communication tasks in which they had to "localize" content for an English-speaking audience through various translation strategies, including using MT tools. In another example, Chen (2020) integrated MT into a class for Chinese English majors in Taiwan through a real-world writing project in which students translated materials from English to Chinese for a local non-profit. Through these models, students used MT for authentic and meaningful purposes, which has the potential to motivate students to produce comprehensible translations for specific audiences (Carreras & Noriega-Sánchez, 2011). Through these activities, students also discovered the limitations of MT tools and how to use them critically. They were also guided to consider MT as one tool among many they could use in the multifaceted process of L2 writing.

Other models have included direct instruction on MT use followed by multiple opportunities for practice, instructor and peer feedback, MT-assisted revision, and reflection at different points throughout the process. For instance, Ryu et al. (2022) developed a model called Guided Use of Machine Translation (GUMT) that included direct instruction on MT use, practice, reflection on the use of the model, feedback, and revision. Ryu et al.'s (2022) GUMT model comprised multiple instructional sessions on several different aspects of MT, such as its strengths and limitations, obscure features of MT tools, and additional online resources students could consult for help with language learning. The model was grounded in the notion that no single online resource, including MT, should be considered authoritative over the students' own knowledge and critical thinking skills. Likewise, Lee (2021) developed a model that included instructor-assisted

use of MT in which students engaged with MT tools to write and revise drafts of L2 writing and to provide feedback to their peers. This model also employed the use of instructor feedback, group discussions on process and difficulties, and student reflections about their use of MT for L2 writing.

Moreover, Xu (2022) described a similar model in which undergraduate students studying Japanese at a U.S. university were instructed in the use of MT to support their language learning. In addition to a discussion on the ethical implications of using MT, instruction included how to use MT in the process of revising L2 writing, the strategy of translating back and forth from students' L1 to L2 multiple times, the need to critically assess MT output before deciding whether to accept it, and how to use additional online tools to double check the meaning of unfamiliar words and phrases generated by MT. Throughout the semester, to highlight L2 writing as an iterative process, students were encouraged to use MT to help them improve ungraded drafts of their writing on which they would also receive teacher feedback. As an integral part of the model, students were also asked to write a reflection paper on their use of MT and the difficulties and affordances it provided.

The design of these models is aligned with the recommendations of many scholars (Giannetti, 2016; Merschel & Munné, 2022; Valijärvi & Tarsoly, 2019) who have advocated for multiple lessons on effective and responsible MT use, multiple opportunities for practice, and engaging students in critical reflection and discussion to build their metalinguistic awareness (Augustyn, 2013; Godwin-Jones, 2022).

Another approach to addressing the phenomenon of MT use among university students is through MT literacy training workshops for which Delorme Benites et al.

(2021) claimed there is an "urgent need" (p. 85) due to the variety of ways MT is used in language classes and content classes alike. Williams (2006) proposed an early model for MT literacy for foreign language learners with the goal of helping students build language awareness and electronic literacy through strategic use of MT and pointing them to additional online tools that could enhance their language development. This framework for introducing students to MT tools included discussions about the variety of free MT tools available on the internet and the disclaimers about accuracy associated with each. It also included activities in which students could explore what MT could do, identify and discuss errors in machine translated texts, and experiment with MT tools to discover their limitations. A primary purpose for this framework was to impress upon students that MT was not designed for language learning but as a practical tool to make basic information accessible to speakers of other languages. The model counted on the students discovering that they could glean the main idea of content translated from another language into their L1 relatively easily, even when it contained several errors, but doing the same for content translated into their L2 would likely be much more difficult. The overall aim was not to deter students from using MT but to stress the importance of using it critically if they chose to use it.

An example of a more recent MT literacy model is that of a workshop developed by Bowker (2020a; 2020b) to inform non-native English-speaking international students and their teachers about several aspects of MT to help them develop a critical approach to its use. Bowker stressed critical thinking, as opposed to technical competence, as the primary skill of MT literacy, pointing out that using MT applications is easy, but using them critically requires an active mind. The workshop addressed a series of topics to help

students and teachers think critically about whether, when, and why to use MT as well as how to use it in more effective ways. The workshop topics included privacy and confidentiality regarding text entered into MT systems (see Kadhim et al., 2013); academic integrity and the need to cite translated sources; potential for algorithmic bias in MT output, such as a tendency to use male pronouns (see Hofstadter, 2018); awareness of different MT tools that are always evolving due to machine learning; awareness of different translation tasks for different occasions, including for personal use versus public or professional distribution; and improving the output by making sure source text is clearly written to reduce the chances for translation errors. Bowker (2020a; 2020b) has reported positive reception of the MT literacy workshop by faculty and students alike. They did note, however, critical feedback about the "translation-friendly writing tips" (Bowker, 2020b, p. 8) discussed in the final topic about improving MT output by changing the input. Participants noted, pre-editing tips that may produce better outcomes for one language pair may not hold true for another language pair, suggesting the need to tailor workshops depending on the L1 of the audience.

Gaps in the Literature

This review of the literature has highlighted several themes within the scholarship on MT use in language learning, including, ethical concerns about MT in academic settings, how students and teachers perceive and use MT, the potential benefits and downsides of using MT in a language learning setting, and the integration of MT into foreign and second language pedagogy. Through this review, some gaps in the literature have also been identified, including a dearth of studies with participants who are speakers of Chinese languages in English as a foreign language or English medium instruction

settings, few studies in which learning theories are explicitly applied to MT use, and relatively few studies on the integration of MT tools into pedagogy.

Among the numerous articles on MT use reviewed herein, only six studies included Chinese university students, and only one was conducted with students in mainland China (Xu & Wang, 2011), four in Taiwan (Chen, 2020; Shei, 2002; Tsai, 2019; Tsai, 2022), and one in Spain (Zhang, 2022). Two additional studies included Chinese participants who were not university students. The first was conducted with primary students in Hong Kong (Stapleton & Leung Ka Kin, 2019), and the second was a single case study of a Chinese middle school student who had recently arrived in the United States (Vogel et al., 2018). Of these eight studies, four included major qualitative components, exploring students' uses and perceptions of MT paired with direct instruction on MT use and application in class (Chen, 2020; Shei, 2002) and interviewing teachers and a single student about their perceptions and uses of MT (Stapleton & Leung Ka Kin, 2019; Vogel et al., 2018). While two of the studies included one open-ended survey question (Tsai, 2019; Tsai, 2022), they were both primarily quantitative inquiries into students' perceptions and uses of MT for L2 writing. The final two studies were also quantitative, measuring students' awareness of online tools to aid in the translation process (Xu & Wang, 2011) and their ability to identify and correct errors in MT output through post-editing before and after direct training in post-editing skills (Zhang, 2020). One of the studies (Stapleton & Leung Ka Kin, 2019) used a mixed methods approach in which teacher participants were asked to use a rubric to assess students' writing before being interviewed. Importantly, this literature review represents only articles written in English. This gap identifies a need for more studies, including qualitative, quantitative,

and mixed-methods approaches, on MT usage in academic settings in which Chinese learners of English are the primary participants.

Additionally, very few studies incorporate direct connections between MT and specific theories. Those studies that do cite a theoretical framework are built around general theories of learning, such as constructivism (Bahri & Mahadi, 2016; Faber & Turrero-Garcia, 2020), reflexive pedagogy (Chen, 2020), and data driven learning (Mirzaeian, 2021). One study is grounded in New Literacy Studies (Giannetti, 2016) and two studies use translanguaging as their theoretical framework (Kelly & Hou, 2021; Vogel et al., 2018). There is a need for more studies with explicit connections to theoretical frameworks.

Finally, while studies that include integration of MT applications into pedagogy are increasing, there are still relatively few that do so. Studies of this sort fit into one of two general categories: those with direct instruction on MT use (Chen, 2020; Lee, 2021; Mirzaeian, 2021; Niño, 2009; O'Neill, 2016; O'Neill, 2019; Ryu et al., 2022; Shei, 2002; Xu, 2022; Zhang, 2022) and those without an element of direct instruction (Faber & Turrero-Garcia, 2020; Lee, 2020; Lee & Briggs, 2021; Tsai, 2019; Tsai, 2022). A few additional articles include descriptions of MT literacy (Bowker, 2020a; Bowker, 2020b; Williams, 2006) and instructional models and/or reports on pilot studies of these models (Bowker, 2020b; Lyu, 2020; Ribeiro et al., 2015), but they are not fully developed research studies. There is a need for more studies that integrate MT through direct instruction and guided practice using models for developing MT literacy.

The present study seeks to address some of the gaps in the literature by incorporating undergraduate Chinese students in mainland China, using a specific

theoretical framework, and integrating MT into the classroom through open discussion, development of guidelines for MT use in collaboration with the students, and application of said guidelines.

CHAPTER 3 METHODS AND PROCEDURES

The purpose of this phenomenological study was to explore the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China and the pedagogical implications of such experiences. The study investigated participants' perceptions and behaviors related to MT through a series of in-depth interviews with five student participants, surveys, and written reflections.

Research Question

The following research question guided this study:

- What is the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China?

Interpretivist Paradigm

This phenomenological study was conducted using an interpretivist research paradigm. Interpretivism, sometimes also called constructivism or social constructivism (Creswell & Creswell, 2018; Creswell & Poth, 2018), is a paradigm that seeks understanding of human action through subjective rather than objective measurement. Interpretivism views reality as fluid and subjective, and emphasizes the importance of understanding individuals' beliefs, values, cultures, positions, languages, and mindsets when interpreting their actions. This paradigm holds that there are multiple realities and that truth is impermanent. Interpretivism is rooted in the ontology that individuals interpret social reality in different ways, resulting in the potential existence of multiple perspectives on any given phenomenon. In essence, interpretivism's primary assertion is

that social phenomena can only be understood through exploring the direct experience of the individuals involved (Bangura et al., 2019; Bhattacherjee, 2012; Creswell & Poth, 2018).

In research grounded in interpretivism, causality cannot be determined because reality is subjective and socially constructed, so researchers seek to understand reality through interpreting the perspectives of participants and can formulate theories through inductive reasoning. The ontological and epistemological assumptions of interpretivism posit that reality is constructed subjectively based on individual interpretation, multiple perspectives of a phenomenon are possible, personal experience is a means of acquiring knowledge, and single events are uniquely contextualized and cannot be generalized (Bangura et al., 2019; Bhattacherjee, 2012; Creswell & Poth, 2018).

Furthermore, interpretivist research pays particular interest to the role of the researchers whose presence and degree of embeddedness within or relationship to the population being studied must be acknowledged throughout the research process, from data collection and analysis to producing a final report of the study. Inquiry approached from the interpretivist paradigm calls for researchers to identify their personal biases and preconceived ideas of the phenomenon being studied and to take steps to ensure their biases have minimal influence on their interpretations and ultimate descriptions of the phenomenon (Bangura et al., 2019; Bhattacherjee, 2012). As a phenomenological study, this research is grounded in the interpretivist ontological and epistemological paradigm.

Methodology

This study was conducted using the methodology of hermeneutical phenomenology. Phenomenology is a qualitative research methodology that gives

prominence to the exploration of conscious experiences to comprehend reality through a description of the "essence," or core meaning, of "'what' people have experienced and 'how' they experienced it" (Creswell & Poth, 2018, p. 124; Privitera & Ahlgrim-Delzell, 2019). This approach stems from the notions of Edmund Husserl, a German philosopher from the early 1900s, who held the belief that human experience serves as the primary basis of all knowledge. The focus of phenomenology is on the methodical examination and interpretation of conscious experiences of phenomena. Its main aims are to identify and describe social reality by acknowledging the various subjective viewpoints of the individuals who share the experience of a single phenomenon and to make sense of the "deep structure" underlying their lived experiences (Bhattacherjee, 2012).

Hermeneutical phenomenology, as endorsed by van Manen (1997/2016), is suitable for this study because it not only aims to explore the participants' collective experience of the phenomenon of using MT as students in an EMI undergraduate program in China (Creswell & Poth, 2018; Daly, 2007; Duke & Mallette, 2011; Privitera & Ahlgrim-Delzell, 2019) but also seeks an understanding of the meaning of said experience for pedagogical purposes (van Manen, 1997/2016). While the goal of a phenomenological approach is to describe the essence of the participants' collective experience of the phenomenon, description alone is not in itself sufficient as an end goal in hermeneutical phenomenology. Rather the description of the phenomenon serves the function of contributing to the achievement of a practical purpose, which aligns with Gallagher's (2022) assertion that "there have been elements of pragmatism operating in phenomenology all along" (p. 9). In adopting a hermeneutical approach to phenomenology, therefore, the researcher in this study takes the position championed by

Dewey (Bruner et al., 1977, as cited in Gallagher, 2022) that communication is, by nature, pragmatic; in a vacuum, it does not have a purpose. It only has meaning insofar as it is used to achieve an end goal. Without practical use, a description of the lived experience of students' MT usage would have little purpose. Seen from this perspective, gaining an understanding of the phenomenon of MT usage among the participants of this study is meaningful inasmuch as it can contribute to the greater practical goal of informing administrators' and educators' policy and pedagogical decisions and paradigms. Therefore, this study employs hermeneutic phenomenology as a practical exercise in what van Manen (1997/2016) has dubbed "pedagogic reflection" (p. 89), in which the researcher, as educator, must consider the lived experiences of the students through the lens of potential pedagogy (van Manen, 1997/2016).

Furthermore, the phenomenological approach is grounded in the idea that reality can only be understood through the meaning individuals assign to it based on their own experiences (Creswell & Poth, 2018; Duke & Mallette, 2011). As such, phenomenology stipulates researchers "make explicit" (van Manen, 1997/2016, p. 47) their own experiences and associated preconceptions and biases, through a process of "bracketing" (Anderson & Spencer, 2002; Bhattacherjee, 2012; Creswell & Poth, 2018; Daly, 2007), or consciously acknowledging what they have personally experienced, by actively reflecting on their biases and assumptions and maintaining them within their awareness throughout the research process. Phenomenological researchers' intentional efforts to maintain awareness of their presuppositions makes way for the emergence of themes from the participants' words and experiences, fostering a more authentic picture of how participants experience the phenomenon (Anderson & Spencer, 2002; Bhattacherjee,

2012; Creswell & Poth, 2018; Daly, 2007; van Manen, 1997/2016). At the same time, hermeneutic phenomenology aims to identify and explain meaning, a process that is intrinsically subjective, and, therefore, recognizes the unavoidable interpretative aspect of representing external phenomena through text (van Manen, 1997/2016).

Following the procedures for conducting phenomenological research (Moustakas, 1994, as cited in Creswell & Poth, 2018, van Manen, 1997/2016), to keep his beliefs and assumptions "at bay" (van Manen, 1997/2016, p. 47), the researcher has included a reflexive positionality statement of his own experiences of the phenomenon, the context and the circumstances that have shaped his experiences, and his preconceived ideas of how the students may have been experiencing it (see Appendix A). This description offers readers the opportunity to judge for themselves the degree to which the researcher's biases are present in his interpretation of the meaning of the participants' experiences (Creswell & Poth, 2018).

Population of Interest and Research Site

The population of interest for this study includes Chinese students in undergraduate, English medium instruction, Chinese-foreign joint degree programs, which the Chinese classify as "international" programs on Chinese university campuses. Numerous Chinese students enroll in these international programs rather than traditional domestic higher education programs in China because admission to Chinese universities is highly competitive, the sole criterion for which is the Chinese college entrance exam, called *gaokao* (高考) in Mandarin. Each year, millions of high school seniors compete for the few available spots in top-tier Chinese universities by taking the rigorous *gaokao* for which they have spent much of their lives preparing (Tsang, 2013). When students'

gaokao performance is not sufficient for admission to top schools, many opt to enroll in international programs as a steppingstone to foreign universities which offer better prospects than lower ranked Chinese schools (Tsang, 2013). Other students' *gaokao* scores may be too low for entry into any Chinese colleges and universities, so they use international programs as a nontraditional pathway to enter the Chinese higher education system with low exam scores or no scores at all (Fang & Wang, 2014). Additionally, these international pathways typically have more lenient language proficiency requirements than direct admission to foreign universities (Tsang, 2013). However, not all students can enroll in international programs as they tend to be much more expensive than government-funded domestic universities. In fact, Tsang (2013) notes that international programs provide a way for Chinese from middle and upper classes to maintain their class status from one generation to the next even when their children do not perform well on the *gaokao* exam. Fang and Wang (2014) corroborate this inequity, finding that most students enrolled in international programs come from relatively wealthy families and have comparatively low *gaokao* scores.

The research site is a small undergraduate English medium instruction Chinese-U.S. joint degree program which has approximately 400 students and operates on the campus of a larger university (approximately 15,000 students) in southern China. The program began in 2015 through collaboration between the Chinese host university, the Chinese Ministry of Education, and the U.S. partner university. With one exception, all courses required for the U.S. degree are taught in English. Thirteen of the program's twenty-two instructors are foreign residents of China, hailing from Australia, France, Ireland, India, the United States, and South Korea, and nine are Chinese nationals.

Prior to carrying out this study, faculty and administrators from the program (including the researcher) had observed students using MT in and out of classes, and several students had admitted to using it as support for reading and writing in their EMI courses. Based on this observational and anecdotal data, the researcher assumed that all, or nearly all, participants had used MT. Such an assumption is supported by prior studies reporting use of MT by 93.6% of students in an EMI program in Thailand (Sukkhwan, 2014), 97.2% of students in a multilingual Swiss setting (Delorme Benites et al., 2021), and 88% of students studying foreign languages at a U.S. university (Clifford et al., 2013). Even so, to ensure all participants had some exposure to the phenomenon, this study incorporated in-class discussion about MT, the creation of guidelines for its use, and application of the guidelines on a non-graded writing exercise.

Participants

The participants of the study included students and an instructor from the undergraduate, EMI, Chinese-U.S. joint degree program described above. The researcher provided informed consent forms to all participants for review prior to deciding whether to participate in the study (see Appendices E, F, and G), and survey instructions for both pre- and post-study surveys included an informed consent statement in both English and Chinese to ensure participant understanding (see Appendix H).

Participants comprised the following:

- Second-year undergraduate students in three sections of an English literature course participated in pre- and post-study surveys.
- Five students participated in a series of three or four in-depth semi-structured interviews.

- The instructor of the course worked with the researcher on several aspects, including administering surveys to the students, facilitating in-class discussions about MT, and overseeing an ungraded writing assignment in which students applied mutually agreed-upon guidelines for MT use.

The sampling method for this study combined convenience sampling and criterion sampling because the researcher had access to the faculty and students in the Chinese-U.S. cooperative program where he works as an administrator (Privitera & Ahlgrim-Delzell, 2019). To recruit an instructor, the researcher sent a letter to all English faculty members within the program. This letter briefly outlined the study's objectives and invited interested faculty to contact him (See Appendix B). The researcher worked with the selected instructor to arrange the in-class elements of the study.

In collaboration with the instructor, the researcher decided to select interviewees and collect written reflections from one section of the target course. All students in the selected class met the minimum age criteria of 18 and all but one self-identified as having experienced MT prior to the study. The researcher emailed all students in the selected class to inform them of the study and invite them to volunteer for interviews. He then followed a process of sequential selection, sending more personalized follow-up emails (see Appendix D) to students in the class until five had agreed to participate as interviewees.

Data Collection

In this study, the primary source of data was in-depth interviews of the five student participants, supplemented by pre- and post-study surveys, and students' ungraded written reflections. All data were collected in English, though some students

replied to open-ended survey questions in Chinese. Through these multiple sources, the researcher aimed to obtain a fuller understanding of the students' experiences with MT and to enhance the trustworthiness and credibility of the overall interpretation of these experiences (Bangura et al., 2019; Creswell & Poth, 2018). See Table 1 for overall data collection timeline.

Table 1.

Data Collection Timeline

	Surveys	Meetings, In-Class Discussions, & Student Reflections	Interviews
Prior to Week 1	Pilot test & survey revisions	Two planning meetings with the instructor.	
Week 1	Pre-study survey administration.	Instructor presented survey results to students; two additional planning meetings.	
Week 2		In-class discussion; student reflections on initial draft of guidelines for MT use.	Student interviews.
Week 3			Student interviews.
Week 4			Student interviews.
Week 5		In-class discussion.	Student interviews.
Week 6		Students received feedback on ungraded writing assignments	Student interviews.
Week 7 +	Post-study survey administration.	Student reflections post-application of guidelines for MT use.	

Note. The section of the course from which student participants were selected was determined after administration of the pre-study survey through mutual agreement with the instructor. All in-class discussions were facilitated by the instructor.

Interviews

For primary data collection, the researcher followed the in-depth phenomenologically-based interviewing structure described by Seidman (2005) in which participants are interviewed three times with approximately one-week intervals between each interview. This structure ensures both depth of data collection and trustworthiness of participant responses by establishing context for their experiences, reducing the potential

impact of a participant's mood on their responses during a single interview, and allows the researcher to check for "internal consistency" in participants' responses over time (Seidman, 2005, p. 24).

Informed by the phenomenologically-based interviewing structure (Seidman, 2005), the researcher created original interview protocols to guide each of the three rounds of semi-structured interviews (See Appendix I). The first round of interviews focused on participants' backgrounds and explored past experiences that may have contributed to how they experience MT in the present. The second interviews explored "the concrete details of the participants' present lived experience" (Seidman, 2005, p. 18) to gain insight into their daily routines and interactions with MT and their in-class experiences of direct discussion about MT and integration of mutually agreed upon guidelines for its use. Finally, in the third interviews the researcher asked participants to "reflect on the meaning of their experience" (Seidman, 2005, p. 18) of using MT as a Chinese student in a Chinese-U.S. cooperative, EMI, dual degree program in mainland China. The researcher added a fourth interview for four participants to ask some follow-up questions. All interviews were conducted in English. The duration of each interview was no more than 45 minutes, and all interviews were video recorded using the movie recording feature in the QuickTime application on an Apple computer and audio recorded using the Apple Voice Memos application on iPhone.

Through the in-depth interview process, the researcher approached the participants as "co-researchers" and experts of their own experiences (Privitera & Ahlgrim-Delzell, 2019, p. 412), keeping in mind, as Seidman (2005) suggests, that "the human interviewer" (p. 23) must practice discernment, understanding, adaptation, and

flexibility with individual participants as needed. All interviews were carried out over a period of five weeks.

Surveys

In addition to the interviews, the researcher collaborated with the instructor to administer pre-study and post-study surveys with both quantitative Likert-type questions and qualitative open-ended questions, which, according to Creswell and Poth (2018), can be alternate sources of data used in phenomenological studies to enrich the understanding of the participants' shared experience of the phenomenon.

The researcher developed the online survey (see Appendix H) based on input from several previous surveys on MT referenced in the literature (Ahn & Chung, 2020; Bahri & Mahadi, 2016; Faber & Turrero-Garcia, 2020; Giannttti, 2016; Jolley & Maimone, 2015; Merschel & Munné, 2022; Niño, 2009; Ryu et al., 2022; Sukkhwan, 2014) as well as informal conversations with students and instructors at the site of the research study. Survey instructions, including informed consent, were written in both English and Chinese. However, all survey questions were intentionally written in English, including the final question which asked, "Did you use a machine translation app to help you complete this survey?" thereby providing further insight into the students' MT usage.

As a first step in the data collection, the instructor sent the online pre-study survey to all students across all three sections of his course (n = 75). After the pre-study survey, the researcher compiled the students' responses, and the instructor presented them to the students to initiate in-class discussion on using MT. Upon completion of the interviews and in-class elements of the study, the instructor sent the post-study survey to the same students.

Additional Data Collection

Additional sources of data included two student reflections. First, after they reviewed an initial draft of the guidelines for MT use, and, second, after they had applied the guidelines to an ungraded assignment. All student reflections were written in English, as English is the medium of instruction and coursework for the program in which the study took place.

Through a series of planning meetings, the researcher and instructor focused on the study's objectives, data collection methods, and the theoretical framework of translanguaging pedagogy. Moreover, they agreed upon the plan and tentative timeline for in-class discussions at three key stages: 1) the presentation of pre-study survey results, 2) in-class discussion about a draft of the guidelines for MT use, and 3) following students' application of the guidelines. The researcher and instructor held additional meetings to refine the plan and debrief after in-class discussions.

During one planning meeting, the instructor suggested collecting written reflections in addition to in-class discussions in case the students proved reticent to engage. The researcher and instructor agreed to ask students to write ungraded reflections at two different points: 1) after receiving an initial draft of the guidelines and 2) after applying the guidelines to an ungraded assignment.

Role of the Researcher

Contextual Positionality of the Researcher

The researcher is a cis white male who is a native English speaker. All student participants and the instructor with whom the researcher collaborated are Chinese nationals. The researcher is also the academic dean of the Chinese-U.S. joint degree

program in southern China where the study took place. As the academic dean, the researcher is the direct supervisor of the instructor who agreed to participate in the study. The instructor consent form (see Appendix E) clearly states that participation in the study was voluntary, and nonparticipation or withdrawal would not affect the instructor's professional relationship with the researcher or employment standing in any way. Because the researcher and instructor interact with one another professionally on a regular basis, only data collected through formal meetings and class visits, prearranged through mutual agreement for the express purposes of the stated research, were used for this study.

Similarly, the researcher also interacted with student participants in his role as academic dean. All student consent forms clearly express that student participation in the study, including surveys, in-class observations, and interviews, was voluntary, and choosing not to participate would have no negative consequences and would not affect their grade in the focal course or their academic standing in the program. The level of prior and ongoing interaction the researcher had with each student participant was minimal, though it varied depending on the students' needs, dispositions, and student leadership roles. As with the instructor, only data collected through formal meetings, prearranged through mutual agreement with each student participant for the express purposes of the stated research, were used for this study.

Researcher's Reflexive Positionality on Students' MT Use Prior to the Study

As previously mentioned, in accordance with phenomenological research, throughout the study, the researcher employed the concept of "bracketing" (Creswell & Poth, 2018, p. 126; Daly, 2007, p. 12) his own experience of MT and his preconceived

notions of the students' use of MT to allow the essence of their experience to come through. The researcher also continuously kept at the forefront of his mind his own role in the "participants' meaning-making process" (Seidman, 2005, p. 22) as he conducted the interviews, as well as the inherent subjectivity of analyzing and interpreting the participants' responses during data analysis (Bhattacharya, 2017; Lichtman, 2012). The researcher has included a reflexive narrative regarding his positionality, prior to the study, on students' use of MT in Appendix A. Within the narrative, the researcher openly discloses his own experiences using MT and his thoughts regarding students' uses of it, so "readers… can judge for themselves" (Creswell & Poth, 2018, p. 124) the degree to which the researcher's biases are reflected in his interpretation of the participants' experiences in his reporting of the study's findings (Daly, 2007; Lichtman, 2012).

Data Analysis

Qualitative Data Analysis

Qualitative data analysis comprised a five-stage process of 1) listening to and transcribing the interviews while engaging in pre-coding (Saldaña, 2008); 2) reading and re-reading interview transcripts, notes, student reflections, and qualitative survey responses, and re-listening to audio of the interviews as needed (Privitera & Ahlgrim-Delzell, 2019); 3) axial coding, guided by the three strands from the García et al. (2017) model of translanguaging pedagogy; 4) a process of iterative sub-coding; and 5) organizing the subcodes into themes (Privitera & Ahlgrim-Delzell, 2019; Saldaña, 2008).

Meticulous transcription of the interviews was an integral step in the data analysis process (Tilley, 2003). Through careful transcription, the researcher became more familiar with the participants' words to facilitate identification of patterns in the data.

Subsequent reading and re-reading of the transcripts, paired with listening to the audio recordings of the interviews (Privitera & Ahlgrim-Delzell, 2019), further increased the researcher's familiarity with the data and contributed to a more informed coding process.

As Saldaña (2008) states, "coding *is* analysis" (p. 8, emphasis in original), and most qualitative researchers engage in coding both during and after data collection. As such, data analysis for this study began during the data collection phase as the researcher engaged in "pre-coding" (Saldaña, 2008, p. 16) and "preliminary jottings" (Saldaña, 2008, p. 4) by identifying and highlighting "significant statements" (Creswell & Poth, 2018, p. 128) and "first impression phrases" (Saldaña, 2008, p. 4) related to students' perceptions and uses of MT that stood out during interviews.

A more formal coding process took place upon completion of the interviews. To guide this coding process, the researcher used the García et al. (2017) three strands of translanguaging pedagogy—*stance, design,* and *shift*—as a guide to develop axial codes. These axial codes served as focal points around which more specific subcodes were developed (Creswell & Poth, 2018). The researcher then engaged in iterative cycles of recoding and refining subcodes (Creswell & Poth, 2018; Privitera & Ahlgrim-Delzell, 2019; Saldaña, 2008), engaging in a process of constant comparison to determine how to label each subcode (Privitera & Ahlgrim-Delzell, 2019). Finally, the researcher grouped meaning-specific subcodes into common themes. These themes are presented through "textural" and "structural" descriptions of the participants' shared experiences of the phenomenon in the findings of the study (Creswell & Poth, 2018, p. 129), organized using the three strands of translanguaging pedagogy (García et al., 2017). See Table 2 for examples of coding, from axial codes to themes.

Table 2.

Examples of Coding from Axial Codes to Themes

Description of Axial Code Categories (Translanguaging Strands)			
• Stance: Students' perspectives about MT (e.g., beliefs, attitudes, and feelings about MT; perceptions about how others view MT, etc.). Sample axial codes: Positive stance, Negative stance. • Design: How students use MT (e.g., what MT apps they use, how they use them, purposes for MT use). Sample axial code: Using MT for writing. • Shift: Adaptations or shifts in perspective or use (e.g., descriptions of evolution of MT use over time, experimentation, strategic use, changes in perspective). Sample axial code: Shift in MT use.			
Examples of Codes			
Round 1 (Axial Codes)	*Round 2 (Subcodes)*	*Additional Rounds (Subcodes)*	*Themes*
Positive stance (helpful/good)	Convenient	MT is Convenient	Duality [Stance]
	Support/necessary for learning content	MT is Essential	
		Using MT to read course materials [Design]	
Negative stance (harmful/bad)	Fosters dependence	MT is a Hindrance to English Development	
	Hinders learning English		
	Guilt for using	Students feel guilty for using MT	
	Clandestine use		
Using MT for writing	Completing assignments	Using MT to write papers & complete assignments	Practical Application [Design]
	Writing papers		
Shift in MT use	Experimentation: writing Strategic use for writing	MT writing strategies	Dynamic Adaptation [Shift]

Note. The three strands of the translanguaging pedagogy model guided the development of initial axial codes. Following the identification of themes through the coding process, the researcher structured these themes within the framework of the three strands to present the study's findings.

Analysis of Supplemental Pre- and Post-Study Survey Data

As described in the Data Collection section above, the collaborating instructor asked all students (n = 75) in his classes to complete identical pre- and post-study surveys. The researcher performed descriptive statistical analyses on data from both survey administrations. The process of data analysis for quantitative survey results involved cleaning the data to identify valid responses and calculating frequencies, percentages, means, and standard deviations. In one case, the researcher also calculated frequencies and percentages of responses to an open-ended survey question about the names of MT apps students use. Qualitative survey data were included in the coding process described above. Sixty valid pre-study survey responses and 50 valid post-study survey responses were included in the data analysis.

The researcher used descriptive statistics from both survey administrations to support the narrative of the students' experiences with MT. In cases when comparing data from both pre- and post-study surveys could provide additional insights into the students' shared experience, the researcher presented them both side by side. In cases when such a comparison would not enhance the narrative, the researcher chose to present only post-study survey results.

CHAPTER 4 FINDINGS

The purpose of this phenomenological study was to explore the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China. The following research question guided this study:

- What is the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China?

The findings are organized into three sections. The first section presents a brief background of the students' self-reported experiences of MT prior to entering university, focusing on messages from teachers and school policies. The remaining two sections encompass three overarching themes representing the students' present experiences with machine translation. Each theme is framed within a student-oriented reinterpretation of the García et al. (2017) three-strand translanguaging pedagogy model. The theme of duality, presented through the translanguaging strand of *stance,* characterizes the students' overall perspective of MT use. The theme of practical application, presented through the strand of *design,* represents how the students' use MT within their learning context. The theme of dynamic adaptation, presented through the strand of *shift,* exemplifies how the students adapt or modify their MT use. Because shift includes adaptive and innovative changes in students' machine-translation related perspectives (*stance*) and practices (*design*), it is addressed as related to each of the other strands within their respective sections in the findings that follow. Table 3 depicts how each of the translanguaging strands corresponds to the overarching themes.

Table 3.

Strands of Translanguaging and Corresponding Themes from the Findings

Translanguaging Strand	Description	Overarching Theme
Stance	Perceptions of the students regarding MT use within their learning context.	Duality
Design	How the students use MT within their learning context.	Innovative Application
Shift	How the students adapt or modify their MT use.	Dynamic Adaptation

Note. The researcher reinterpreted the three-strand model of translanguaging pedagogy (García et al., 2017) to apply it to students' use of MT as a translanguaging tool. The three-strand model was used to guide data analysis and facilitate reporting of findings.

Background: Messages and Policies Prior to Entering University

In-depth interviews provided insight into the students' formative educational experiences that contributed to shaping their perspectives on and practices related to MT use in the present. Echoing findings from previous studies reporting teachers' perspectives on students' MT use (Clifford et al., 2013; Knowles, 2022; Merschel & Munné, 2022), interviewees in the present study articulated that they had previously received mostly negative messages from teachers about the pitfalls of MT, presenting a consistent theme of restriction and caution. All students reported that their teachers, from primary through high school, either remained silent on the use of MT or expressly prohibited it (see Faber & Turrero-Garcia, 2020; Karnal & Pereira, 2015; Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022; Stapleton & Leung Ka Kin, 2019). One exception was a student who detailed receiving advice from an after-school high school

tutor about how to use MT to improve his English skills, and notably, the advice did not come from a classroom teacher.

The overarching message the students received from their teachers, as also reflected in the literature (Alm & Watanabe, 2021; Correa, 2014; Xu, 2022), was that over-reliance on MT would make students lazy in their studies and hinder their English language development. Instead, teachers encouraged students to use paper dictionaries to aid in their English learning. As one student explained:

> It's not a good thing. And this idea we have been taught in our high school or even in our primary school…. It will hurt us especially when we study English, and our teachers encouraged us to use more the paper dictionary… [because it] is much better than the machine dictionary or even the translation apps. (Student Interview 3.1)

Having been advised to avoid using MT since primary school, the students began their university studies with deeply ingrained ideas about the perils of MT use.

Moreover, when the students were in middle and high school, prohibitions on MT use were further reinforced by strict policies regarding smartphones. All students interviewed reported that they were not allowed to use or even bring smartphones to school, restricting their exposure to MT in academic settings before university.

Furthermore, students reported minimal discussion about messages from teachers regarding MT use in their classes since entering university. A few students recounted that one university instructor advised them not to use MT for class assignments due to concerns about plagiarism. The only other time students reported hearing about MT use from their university instructors in class was during the open discussions about MT use as

part of the present study. As one student reflected, “This was the first time that we had the opportunity to discuss with the teacher how we could use machine translation to help me better complete my English writing assignments” (Student A Post-Activity Reflection).

Stance: **A Perspective of Duality**

The students’ perceptions regarding MT use within their learning context is framed within the stance *strand* of the translanguaging pedagogy model of García et al. (2017). Stance, as applied here, is reinterpreted from the students’ point of view, rather than its original application to teachers’ perspectives. Analysis of interview transcripts and students’ written responses reveals that using MT as a student in the Chinese-foreign, cooperative, EMI program in which this study took place means experiencing a certain duality, believing simultaneously that MT is both essential and detrimental, helpful and harmful. While students view MT as crucial for coping with the academic demands of the program, they also believe it hinders their English development, experience guilt for relying on it, and aspire to reduce or eliminate its use.

The crux of the students’ duality regarding MT is exemplified in a quote from an interview in which the student is wrestling with contradictory perspectives in real time:

> I think the [EMI] class is a little difficult for Chinese students, so I think machine translator is a good tool… a good assistant for Chinese students. But we shouldn't always use the translator. I think we need to try our best to finish it by ourselves firstly, but if we couldn’t understand… the translator will make sense. But I think the translators shouldn’t always help students for study. But… sometimes we couldn’t always avoid.... In my opinion, including me as many students, maybe

> the translator can help us finish the assignment easier. But I am not sure it's good for the result of study. I think, either way, we should try our best to finish by ourself first and don't always rely on the translator. Yeah, I think it's not good for our study. (Student Interview 5.3)

Here, the student makes several declarations that MT is simultaneously helpful and harmful for him and his peers. He begins by expressing that MT is a "good tool" but should not be overused and ends on the position that it is "not good for our study," demonstrating, in one individual, a wide spectrum of opinions about MT use. This quote captures the essence of the students' duality on the topic, indicating a complex and multilayered stance regarding the place of MT among Chinese students taking EMI classes.

The words of another student further exemplify the conflicting beliefs that MT has both merits and drawbacks. She reasoned that using MT has helped her to "understand more about our accounting words," but she believes that her overall "reading skill… [has] become lesser than… before" (Student Interview 3.3). On one hand, students recognize the usefulness of MT, especially in the beginning of their university studies, to make their course content comprehensible (see Bahri & Mahadi, 2016; Chen, 2020; Niño, 2009). Such sentiments are validated by the findings of Karnal and Pereira (2015) who showed that students who used MT to read academic texts did indeed achieve greater levels of comprehension compared to those who did not use it. On the other hand, the students in the present study perceive its overuse as potentially detrimental to their long-term English development (see Ahun & Chung, 2020; Faber & Turrero-Garcia, 2020; Garcia & Peña, 2011; Giannetti, 2016; Ryu et al., 2022; Sukkhwan, 2014; Valijärvi

& Tarsoly, 2019), leading to the desire to wean themselves off MT in order to improve their English. As one student explained, using MT is understandable "when students first participate [in] our project, [because it] may be very difficult to understand [their courses], but I think sometime later... they can understand well. But if students still use the machine translation, I think there will be no improvement" (Interview 5.1). However, whether using MT helps or hinders L2 learning has not been definitively proven in the literature (Jolley & Maimone, 2022; Knowles, 2022).

One comment from the pre-study survey encompasses the students' conflicting sentiments on the use of MT, stating simply, MT is a "double-edged sword." This duality is rooted in the recognition that while MT is essential, convenient, and can serve as a helpful tool for learning, it simultaneously poses the risk of over-reliance and misuse that can potentially circumvent the learning process.

One student's explanation for teachers' bans of MT further demonstrates the dual perspectives held by the students. As he opined, the use of a machine "translator makes some students lazy and makes… other students get more knowledge. So, a… teacher… bans the translator… to make the lowest standard don't be very low, but maybe it limits the highest standard for some students" (Student Interview 5.3), demonstrating the belief that the use of MT can simultaneously prevent some students from gaining higher levels of proficiency while helping other students to excel. Holding these two contradictory ideas at once exemplifies the duality the students experience when it comes to MT use. They see its dual potential as both a helpful learning tool and as a substitute for engaging their minds in the learning process. Accepting this paradox while simultaneously

attempting to reconcile these conflicting beliefs characterize the students' experiences as users of MT within their academic context.

This conflict manifests itself among the students in several ways. Students claim to need MT while acknowledging it may hinder further development of their English, which many of them also need to study abroad at a future date; they feel guilty for continuing to turn to MT, because they perceive it may have long-term negative consequences; and they long for a future in which they will no longer need MT. This stance reflects a deep-seated tension between the perceived necessity of MT, the awareness of MT's pitfalls, and the desire for linguistic self-sufficiency. These conflicting beliefs permeate the students' experience of using MT within their academic setting.

MT Is Essential

A primary stance found across all student interviews and several student reflections is the belief that MT is an essential tool for Chinese students taking EMI classes for the first time. Students' comments in this regard cover a wide spectrum, ranging from "it's normal" (Student Interview 4.3) to "very necessary" (Student Interview 2.3) to "inevitable" (Student F Post-Activity Reflection) to we "can't live without machine translators" (Student Interview 3.3). Regardless of where they land on the spectrum, they generally see MT as not just a supplementary aid but as a vital resource in EMI programs for students whose English proficiency is still developing. In the words of one student, "I think machine translation is very necessary for me, because… it can increase my efficiency in learning…, [and] it helps me a lot to comprehend English better…, so I think it is essential" (Student Interview 2.3). As this

comment insinuates, students describe their use of MT as buttressing their academic experience, compensating for gaps in their academic English, and helping them comprehend complex course content with greater ease. They emphasize its importance for helping them to manage academic challenges and complete their coursework, underscoring their MT use as a pragmatic means to addressing their linguistic limitations and as indispensable for their academic success.

Additional student comments exemplifying their belief that MT is essential include claims that they would still use MT even if it were banned by their instructors. Rather than stop using MT, they would take precautionary measures to conceal their use. As one student declared, "even if all the professors told us we can't use [MT]…, most of us will still use it, but we will spend more time to don't let the teachers know that we use [it]. It's necessary for us" (Student Interview 3.3). The same student then doubled down on her stance that MT is essential by proclaiming that she and her classmates "can't live without the machine translators" (Student Interview 3.3). Such strong opinions about students' need for MT are typical of their stance on the matter.

Another student attempted to rationalize his necessity for MT use by claiming that college students need to use MT because their memories are no longer as good as when they were younger. For younger learners, he professed, it is not good to use MT because it will interfere with their natural memory skills, but in college, using MT is "not that bad," because "now I maybe need more time to remember" (Interview 1.3). This stance is representative of students attempting to reconcile their belief that they need to use MT with the competing belief that it would be better for them not to use it.

Additional manifestations of the competing beliefs that MT is simultaneously essential and potentially detrimental were expressed by all interviewees. In another illustration of this duality, one participant divulged, "We always think that [machine] translation is not good, but for some students, if they could not understand what the professors say in class, they… don't have another choice [other than] to use the [machine] translation" (Student Interview 5.1). Likewise, some students were reticent to admit that it was essential for them, attempting to minimize their current MT use by describing it as merely a temporary necessity to help them learn new academic content while still developing stronger English proficiency. One student, for example, vacillated between saying MT was "useful… but not very necessary" to "maybe it is useful and necessary" for him now, but will not be in the future:

> It's a useful tool, and it can help me to improve English, but it's not very necessary, because if my English improves to a very high level, that means I may not need to use it anymore. So maybe at this time now… maybe it is useful and necessary, but maybe in future... I may no longer use it. (Student Interview 1.3)

Such remarks are representative of the students' dual stance on the necessity of MT use. Even if they may be reluctant to acknowledge its vitalness for themselves, they declare it is necessary for most of their classmates, or at least view it as a temporary requirement, while aspiring to a future when they will no longer need to rely on it.

The degree to which the students consider MT integral to their studies is evident. While some hesitated to state directly that MT is essential for them personally, they acknowledged that, without it, they would struggle, and claimed that many of their classmates would certainly fail. When asked what the impact would be if MT did not

exist, one student articulated, “many students cannot finish the undergraduate course in Chinese cooperated project like ours” (Student Interview 5.3). The students’ responses indicate they have come to rely on MT as an indispensable tool for learning course content and completing course assignments, despite the simultaneous acknowledgement that using it might not be the best choice for their future language development.

MT is Convenient

Another salient stance students take regarding their use of MT is that it is a convenient tool that can save them time. This stance was often mentioned by students in surveys and interviews as both the primary advantage and key motivator for using MT for academic purposes, corroborating similar findings from numerous previous studies (Ahn & Chung, 2020; Chen, 2020; Faber & Turrero-Garcia, 2020; Fredholm, 2019; Lee, 2020; Valijärvi & Tarsoly, 2019). When asked to elaborate on what motivated him to use MT, one interviewee summed up the students’ position, stating simply, “The convenience. It can help us to save more time… and [we can] use the time to do more things. That is the biggest” (Student Interview 1.1). Students’ expressions about the convenience and efficiency of MT were also evident in their responses to the pre- and post-study surveys. In both survey administrations, the advantages students listed most frequently for using MT included variations on convenience, speed, and efficiency for looking up words and translating large chunks of text to comprehend course materials. Such responses came from 29 out of 60 students in the pre-study survey (48.33%) and 30 out of 50 in the post-study survey (60%).

Another comment from an interviewee further elucidates the students’ position on the convenience of MT: “When I have a lot of homework, and if I want to quickly finish

it, I will put a whole paragraph or sentences into machine translation and it will directly translate Chinese for me, so it's pretty effective" (Student Interview 2.1). However, as with the students' stance that MT is essential, they also expressed conflicting points of view about its convenience. Students tended to pair expressions extolling MT's convenience with a qualifier indicating their awareness that turning to MT can have negative repercussions. For example, the student followed the comment above with the caveat, "but it will make me more rely on it and that is not good" (Student Interview 2.1), providing further support for the students' conflicting beliefs about using MT.

Moreover, one interviewee's description of the students' coursework as "oppressive" (Interview 5.1) illustrates the convergence of convenience and perceived necessity as complementary drivers of their frequent MT use. He explained that students often need to use MT to complete their work quickly and are unable to take the time to develop their English skills:

> If the if the student[s]… [were] not oppressed by their study so much…, I think many… will determine to improve English if they could. But if they [feel] really oppressed by study…, I think they will be attracted to the machine translation.

Another student added to the notion that his classmates did not have time to learn, claiming some of his classmates are so focused on getting their work done that they neither improve their English nor really learn the course content. He stated that many of his classmates "rely on machine translation [too much], and… they didn't gain… much when they use [it]…, they didn't learn anything from it" (Student Interview 2.2). This sentiment echoes findings from prior studies reporting that students admitted to not paying attention to their course content when using MT (Garcia & Peña, 2011;

Sukkhwan, 2014). The same student expressed a similar view in another interview, stating, “Some students don’t like learning English…, they just want to quickly check what… English words mean in Chinese, rather than continue to find more about how to use those words… accurately…. That is very common” (Student Interview 2.1). While most interviewees did express the importance of improving their English, many also cited the overwhelming pressure of their studies, combined with time constraints, as reasons for turning to MT.

MT is a Hindrance to English Development

While MT is convenient and provides the benefit of granting students access to complex English texts, as illustrated in the examples above, students also hold that MT comes with corresponding negative consequences. The students’ shared belief that excessive use of MT can impede their English learning echoes a sentiment commonly found among language educators and students, as reported in several previous studies (Bowker, 2020; Ahn & Chung, 2020; Chen, 2020; Chung & Ahn, 2021; Giannetti, 2016; Sukkhwan, 2014). This perspective persists despite an apparent lack of evidence in the literature supporting this claim (Jolley & Maimone, 2022) and some findings suggesting no long-term differences in L2 learning between students who use MT and those who do not (Knowles, 2022).

Across all interviews and within several written responses, students expressed a common concern about over-reliance on MT tools for their studies. They recognized that while machine translation can be effective in helping them comprehend course content, they also held the conviction that its frequent use can foster dependency that can impede the development of their English skills, particularly reading and writing. As one student

explained, “If we use too much… the machine translators, it will [be] hard for us to improve our English reading skills or the English writing skills…. It means that we will decrease the times we write it by ourself” (Student Interview 3.1). Students considered this dependence on translation tools as preventing them from developing their ability to interpret and produce college-level English texts without the aid of technology. For instance, when asked what it would mean for him if MT were prohibited in all his classes, one student said, “I think I will experience a tough time…, [but] maybe that will force me to use English more frequent…, [and] maybe I can improve my speed of reading the English content” (Student Interview 2.3). This quote demonstrates both the student’s current dependance on MT and his belief that if he stopped using it, his English would improve.

Despite their concerns about over-reliance, students reported frequently opting for the convenience of MT to quickly understand English content, often at the expense of deeper learning and development of their English skills. Speaking from their own recent academic experiences since enrolling in university, many students observed that using MT as a frequent resource had led them to a habit of translating everything to Chinese without first attempting to understand or analyze the material in English. They expressed fears that this reliance on MT could hinder their ability to think independently in English and internalize new vocabulary words and grammatical structures of English, yet they continue to use it and claim they would not be able to perform well enough without it. Similar concerns are reflected among language educators in several previous studies focusing on MT use in foreign language learning settings, holding that the convenience of instantaneous translation could deprive students of the chance to develop analytical skills

essential for mastering an additional language (Bowker, 2020; Fredholm, 2015; García & Peña, 2011; Klekovkina & Denié-Higney, 2022; Merschel & Munné, 2022; O'Neill, 2019; Ryu et al., 2022; Stapleton & Leung Ka Kin, 2019; Tarsoly & Valijärvi, 2019).

Expressing their awareness that using MT could be a hindrance to English development, students related a range of experiences. One student recounted, "When we need to read something, we will… use a translator. And, although we can understand… the meaning…, it can't help us… improve our own English reading skills, and we will… [spend] more time on the machine translator for easier [reading]" (Student Interview 3.3). The same student also claimed that while she now understands more discipline-specific vocabulary, she noticed her general English reading skills had suffered since starting college, which she attributed to her frequent use of MT. Another student likewise articulated knowing MT use would hinder his English learning but choosing to use it anyway. "There's a time I always use it," the student explained, "like I write down something is all by machine translation. So, at that time, I didn't improve my English" (Interview 1.1).

Similarly, other students reported coming to the realization that using MT had contributed to a decline in their English reading and writing. One student said she noticed she was unable to read English without the aid of MT when her instructors did not provide easily translatable electronic course materials, relating that she "only can read English online, but offline in the real life… it can't work" (Student Interview 4.1). Another student explained how relying on MT for writing made her "English writing level drop" (Student Q Post-Activity Reflection). On one hand, these students saw the

usefulness of MT for reading course materials and writing papers, but they also suspected that overuse of MT may have contributed to stagnation in their English development.

Other student comments further indicate the students' awareness of the potential drawbacks of MT use, albeit in a more subtle manner. For instance, one student explained, "A machine translator is a very good helper and just like a bridge for me, to help me connect the knowledge and the language… to understand our course more deeply," but "I still need to work hard to improve my English skills" (Interview 3.3). The inclusion of the qualifying statement that she still needs to work hard to improve her English suggests an awareness that relying on MT will not be sufficient to improve her English skills in the long-term.

Further adding to the dilemma about relying on MT for immediate practical use versus recognizing its long-term drawbacks, students also expressed that overuse of MT might leave them underprepared for their plans to continue their studies abroad, either to finish their undergraduate degree or for graduate school. One student explained it was better for him to try to communicate without using MT by using:

> … the words I already know. Because I think I will go to America to study in the future. So I need to improve my English speaking. So us[ing] translation at this time, at the time I am in China, will not improve my English. If I [do], I will [have to] use it maybe in America. (Student Interview 1.1)

The students have a desire for future linguistic autonomy, sensing that reliance on MT will be less acceptable once they transfer to an English-speaking country, so they feel pressure to develop their English skills now to prepare for the future. To further illustrate this point, immediately following a statement about using MT to help her access course

materials in English, the same student said, “But to study abroad in the future, we also need to improve our English, [which] is very important and a little bit hard for us” (Interview 3.3). The student’s acknowledgement of current reliance on MT juxtaposed with her desire to improve her English for the future exemplifies the inner conflict common among the students who recognize that their current behavior may be an obstacle to achieving future goals. Such statements further contribute to the students’ multilayered and often contradictory stance on the use of MT.

Students Feel Guilty for Using MT

Another manifestation of the students’ conflicting perspectives about continually turning to MT out of perceived necessity is evident in their expressions of feeling guilty for doing so. One interviewee expressed that he considers using MT like carrying a heavy burden, encapsulating feelings of guilt for needing MT now while hoping it will not be necessary at some point in the future. The student explained:

> It’s like if I use machine translation then I think it feels like a very heavy backpack on my back, and if I not use it anymore, is like I throw the backpack away…. It’s like, I use machine translation is like I need some help, and in the future I don’t, I will not use it, that means I can do it by myself. (Student Interview 1.3)

The comparison of MT being akin to carrying a heavy backpack invokes powerful imagery that exemplifies all interviewees’ feelings of guilt for using MT. They insinuate that, while others may not be aware of the degree to which they are using MT to help them in their classes, they alone carry the heavy burden of guilt that they are current users of MT and long to be able to identify themselves as linguistically self-reliant, thus

relieving themselves of their burden. Such attitudes are echoed in several statements from students in which they express reluctance to claim that they too are MT users. For example, one student proudly exclaimed, "I haven't downloaded any… app just for translating" (Student Interview 5.1), only to admit later to using the default MT app installed on his iPhone, conceding "Yeah, I always use the Apple translator" (Student Interview 5.2).

Furthermore, similar sentiments of guilt are apparent in many students' comments about their desire to reduce or eliminate MT use. Some, for instance, want to limit their MT use within the bounds of what they consider ethical and fair. To illustrate, one participant submitted a paper she had fully translated from Chinese to English using MT. She expressed, "I feel like I [was] cheating myself.… Because I think… what I write to express myself, [whether] your language [is] good or not, [what] is important is what I write [by myself]" (Student Interview 4.1). She subsequently described adjusting her behavior by limiting her MT use to single words and short phrases in an effort to assuage her guilt. Another student expressed a similar sentiment, declaring "a kind of guiltiness arose from my heart" (Student K Post-Activity Reflection) when the student used MT for English writing.

Some students described concealing their MT use through a process of meticulously changing machine-translated text to make it appear to their instructors more like their own writing. Revising machine-translated text to evade detection, exemplifies a larger trend among the students of using MT surreptitiously, often despite direct teacher prohibition. Students perceive it as a sort of tenuous secret practice; they are aware that many of their peers are also using MT, but they conceal this fact from their instructors

and often from each other, an indication that they may not want to be labeled as the kind of student who uses MT. This secrecy appears to be connected both to a sense of guilt for using MT applications and fear that if instructors become aware of this practice, they might speak out more forcefully against it. Such fear is exemplified in one students' response when asked what she would think if all her teachers banned MT. She replied, "I may guess someone has plagiarism with translate machine so the professor [will] not allow me to use it" (Student Interview 4.3).

Moreover, several students conveyed feelings of guilt for using MT themselves when they suspected their classmates were not using it, seeing their behavior as giving them an unfair advantage in comparison to their peers. One student, for example, lamented, "I think [using MT] is bad behavior. Maybe other people, other students, they work it by their own, but I use translation, so it's not fair" (Student Interview 1.1). Such views further suggest that students not only hide their use of MT from their instructors but also from their peers, potentially leaving them to wonder whether they are the only ones who feel the need to use MT to cope with the rigors of their EMI courses. Moreover, a comment from one student's post-activity reflection that using MT for writing "is not a shameful act" (Student F Post-Activity Reflection) further demonstrates that students associate feelings of shame and guilt with MT use.

From vivid similes to simple statements such as "I don't want myself to use [MT] more" (Student Interview 5.3), internal conflict regarding their MT use was articulated by all student interviewees and several written reflections. It is evident that students carry the burden of guilt, and often even shame, due to their use of MT to help them with their coursework, coupled with the belief that they should not be doing so. In a further

demonstration of these feelings, one student asserted that teachers should not openly discuss in class specific cases in which they suspect students have used MT. He explained:

> For some students, maybe they are difficult to finish the study, and I think the [machine] translator can help them. But I think professors shouldn't speak to students [about] that publicly, because I think it is little maybe not friendly.... Because I think it divides students into two parts, so I think professors shouldn't do that publicly. They can send email to some students [instead]. (Student Interview 5.3)

Referring to a specific instance in class, this student's contention that instructors can create divisions among students, implies that students' feelings of guilt for using MT are exacerbated when instructors identify such behavior publicly. In a previous study, Valijärvi and Tarsoly (2019) suggested integrating MT into foreign language teaching could mitigate any guilt students may feel for using MT, though they did not provide evidence that students feel such guilt.

Students feel strongly conflicted about their use of MT, even to the point of experiencing guilt and shame for being identified as someone who might turn to MT for help with their course work. Such complex feelings of guilt suggest that students in EMI settings may connect their self-concept to how much they rely on MT. Such a notion is supported by the reporting of Klekovkina and Denié-Higney (2022) that students may equate low L2 proficiency with a lack of intelligence and use MT in secret to make themselves appear smarter. It also corroborates with the literature claiming that self-

concept is connected to second language learning (Horowitz et al., 1986; Morley, 1991; Olivas & Li, 2006).

Introduction of Guidelines for MT Use: Agreement and Distrust

An attitude of distrust surfaced in student interviews and written responses regarding the mutually agreed-upon guidelines for MT use, further demonstrating the students' multilayered and conflicting stance on MT. While students agreed to the proposed guidelines and saw value in their practical application, they also expressed distrust in their instructor about whether they would be graded fairly when following the guidelines, and distrust in their peers about whether they would be honest in their application of the guidelines. Students raised concerns about how their instructors would perceive them for using MT openly and how they would perform in comparison to their peers if they chose not to use MT.

The guidelines allowed students to choose one of three different options for disclosing their MT use in their writing:

- Option 1: "Disclosure of Machine Translated Content." Students selecting this option agreed to mark all parts of their writing for which they used MT, with the expectation they would receive specific feedback about their writing skills.
- Option 2: "General Disclaimer for Machine Translation Usage." Students selecting this option agreed to write a disclaimer at the end of their paper, acknowledging they used MT but not specifying for which parts of their writing they used it. Students who chose this option would receive only general feedback about the meaning and content of their writing rather than about syntax and language use.

- Option 3: “Option to Omit Disclaimer.” Students were also allowed the option to omit any disclaimer of MT use with the caveat that such a decision would impact the feedback they received (though the type of feedback for this choice was not explicitly detailed within the guidelines).

The instructor considered the three options to be fair because they provided students the chance to opt out without penalty or to reveal their MT use based on their degree of comfort. However, these options fomented distrust among the students. Many expressed suspicion that some of their classmates would choose not to disclose when they had used MT, thereby gaining an advantage over their classmates.

In interviews and written responses, students expressed their views about each of the guideline options. Regarding option one, identifying machine-translated writing in their essays, students generally agreed it could provide instructors with a more “honest” picture of their language skills. For example, one student wrote, “It is an honest behavior that [lets the] teacher… know my real situation” (Student D Feedback on Guidelines). Likewise, another student explained, option one “will honestly and openly show the professor that this part is not the result of my own translation… and…allow the professor to understand the true level of the student and give appropriate advice” (Student E Feedback on Guidelines). Other students also acknowledged option one could help instructors focus their feedback on students’ writing skills. One student commented, for instance, option one “can give me more chance to get the feedback of my language skills” (Student J Feedback on Guidelines), and another opined that instructor feedback on writing for which they did not use MT “can help you know what your actual level was and find out what your problem is” (Student Q Feedback on Guidelines).

Other students claimed option one reduced their uncertainty about using MT in the class. One interviewee explained that disclosing MT use to her professor:

> can make me feel more easier… to write it…. [Before the guidelines,] when I… use the machine translator, I will try my best to [not] let my teachers know… because I think if he finds out I used it, he will give me a low grade. But now I can just underline the sentence and tell the teachers, and with this principle I know that if I use the machine translator and [it is] known by my teacher, I will not get some punishment. (Student Interview 3.2)

Expressing a similar sentiment, another student simply articulated, if students follow option one, "We don't have to lie to our professors" (Student L Feedback on Guidelines).

However, some students expressed reticence about honestly disclosing their level of MT use. For example, one student admitted, "I feel hesitant when I need to identify more [MT use]. Maybe I will identify less than [my] actual [use]" (Student C Post-Activity Reflection). Another student likewise stated, "the challenge I face is whether I can freely choose to tell the teacher I use machine translation or not," subsequently expressing a preference for options two and three of the guidelines (Student F Post-Activity Reflection).

Others conveyed further doubt about option one. For example, one student claimed that it is unrealistic to mark "every sentence that you use [MT]. Because vocabulary prevents students from expressing their ideas" (Student C Feedback on Guidelines), suggesting such common use of MT that students might have to mark most of their papers if they followed this guideline. Another student similarly claimed option

one would be too cumbersome given the students' widespread and frequent use of MT, declaring:

> Most of us will rely on machine translation to help us write English. This makes it less necessary to mark the translation. Because we need to do a lot of labeling. This makes the article seem very strange, an article that recognizes both references and machine translation. The combination of the two also makes writing very complicated. (Student R Post-Activity Reflection)

Likewise, another student elaborated that marking every MT-assisted part of their writing is impractical, explaining, "I will use the machine to translate some content…, [but] not completely copy the content translated by the… machine….[Rather,] I will slightly modify the content translated by the translation machine, and use my own language to express it" (Student F Feedback on Guidelines). These sentiments show the perspective that merely identifying where MT was used would not necessarily indicate the students had not put time and effort into their writing.

Students' reactions to option two, writing a general disclaimer indicating MT use but not disclosing where or how much, began to reveal distrust in their instructor and their peers. Some students questioned whether the use of a general disclaimer might lead the instructor to have negative perceptions about them or affect how they would be graded. For example, one student wondered whether her instructors might misconstrue students' reasons for choosing option two, writing, "I think include[ing] a general disclaimer at the end of my document may make… some misunderstanding to some professors. They may worr[y] about my document" (Student N Feedback on Guidelines). Some students held that, if they chose this option, the instructor may think they used MT

to translate the majority of their writing and give them a lower grade, even though the assignment for which they were asked to implement the guidelines was ungraded. Another student's comment exemplifies this sentiment:

> I think [a general disclaimer] is a relatively good approach. But I have a question, would you subconsciously feel that students who have used a machine translation would spend less time? Does this idea of "they're more relaxed" affect your rating if it exists? (Student K Feedback on Guidelines)

Here, the student poses a direct question, expressing suspicion about whether the instructor would truly assess students objectively if they chose option two. Similarly, another student wondered "whether essays that choose to mark… machine-translated sentences have the same grading criteria as essays that choose to have the entire essay directly machine-translated. And whether the percentage of machine-translated sentences affects the final score of our essay" (Student A Post-Activity Reflection).

Students also expressed suspicion that their peers might abuse a general disclaimer to avoid having to disclose the degree to which they rely on MT for their academic writing. One student noted, "If you use a disclaimer…, it is not clear how many machine translation words… students use" (Student C Feedback on Guidelines), suggesting option two would still allow students to use MT to write their entire paper without truly revealing they had done so. Some suggested option two could be modified to include a requirement to clarify "the frequency and percentage of using machine translation" along with the disclaimer (Student B Post-Activity Reflection).

Students' opinions about the third option, to omit a disclaimer about whether MT was used, further revealed their distrust in their peers and their instructor. Some students

did express an understanding that the option to omit could offer flexibility based on different students' confidence in their language ability and their varying needs. For example, some articulated that students who truthfully do not use machine translation and put more effort into their writing deserve different or more careful feedback, suggesting the option to omit should only be reserved for those who truly do not use MT as a writing aid. As one student expressed about option three, "As for the students who choose to… not use the Machine Translation, it takes more time to finish their essay, they deserve more care" (Student J Feedback on Guidelines).

Others wanted to retain option three because they consider omission a fair choice when they feel the translation accurately conveys their ideas (see Klekovkina & Denié-Higney, 2022) or when they would like to prioritize content over language in the feedback they receive. For example, a student suggested, "If you choose not to disclose the use of machine translation, it [may] indicate… that you don't need the teacher to pay too much attention to your statement" (Student B Feedback on Guidelines). Similarly, another student reflected:

> We can disclose machine translation when we need feedback, but when we review the sentence and decide it doesn't make a difference to the professor's understanding, or we don't need additional feedback, we can choose not to label the machine translation content or display a disclaimer at the end of the article. (Student H Feedback on Guidelines)

Echoing this sentiment, another student expressed, "as long as we are confident that the machine translation section will do a good job of communicating our original intent to the

professor, we can choose not to disclose that machine translation is used in the essay" (Student E Feedback on Guidelines).

However, more students took issue with this guideline, citing the importance of transparency, considering not disclosing their use of MT as misleading, if not dishonest. One student remarked, "If machine translation is used…, but it is not clearly marked, readers may mistakenly think that it is the result of human translation, thus misunderstanding the accuracy and reliability of the content" (Student R Feedback on Guidelines). Another student simply stated that "If you just copy and paste after translation, it is better to submit the Chinese version" (Student K Feedback on Guidelines). Others recommended consequences for those who might abuse this option, as one student suggested, "If machine translation is used without informing, we should use a different type of scoring as a penalty" (Student A Feedback on Guidelines).

Moreover, similar to feedback about option two, students also conveyed a suspicion that choosing not to disclose their MT usage might have a negative impact on how their instructor perceives them and on the quality of the feedback they receive. One student wrote, "Ignoring the disclaimer makes it difficult to distinguish between machine-translated content and content we write ourselves, and it also affects the type of feedback we receive" (Student F Feedback on Guidelines). Another student expressed, "if I don't write the disclaimer maybe it will have some negative effect" (Student G Feedback on Guidelines).

Students also commented about the general benefits and drawbacks of the guidelines overall. Some expressed the guidelines might deter students from using MT too much. As one interviewee explained, "I think that [the guidelines] can [incentivize]

students to study by oneself [without using MT]" (Student Interview 5.3). Another student's reflection expounded on the idea of the guidelines as a deterrent to MT use, expressing they may have a subconscious effect that "is more psychological, which will make students hesitate to use machine translation when they are writing" (Student I Post-Activity Reflection). Moreover, some students hoped the guidelines would promote fair and objective assessment of their writing. For instance, one student wrote, "If the guidelines can dispel students' concerns [about how instructors will assess them], it will encourage more students to step out of their comfort zones and truly write on their own" (Student K Post-Activity Reflection). Another student expressed hope that the guidelines might discourage cheating, explaining, "For… student[s] who want to get… high points by cheating, their plans couldn't work…. [T]he guidelines can make sure the scores of students are fair… and spur the student[s] who just care about their scores to be honest" (Student S Feedback on Guidelines).

Other comments noted the limitations of the guidelines, also pinpointing issues of fairness. As one student proclaimed, "In some way, [these guidelines are] unfair to people who do not use the [machine] translation. Therefore, I think it is necessary to use two different grading criteria for the use and non-use translators" (Student Q Feedback on Guidelines). A comment from one student interview further articulates the students' sentiments about the guidelines for MT use:

> It is a good way, but I think [there] is a small bug…, because I think some students will still cheat it. Like, I use translate, but I don't want to tell you I use translate. So… how to know if someone was cheating? And how was his grade? (Student Interview 4.3)

As expressed here, the students tend to like the idea of bringing MT guidelines into their classes, but at the same time they do not trust that their peers will apply the guidelines honestly, which may result in unfair assessment by the instructor. The juxtaposition of students' general acceptance of the guidelines and distrust in how their peers and instructors will apply them further exemplifies the students' conflicting stance on the use of MT in their academic context.

Ethical Considerations of Using MT

Results from a survey question focusing on the ethics of MT use for different academic tasks reveal students have a nuanced perspective about using MT depending on the circumstances. The survey asked students to rate the degree to which they considered it ethical (right) or unethical (wrong) to use machine translation for a list of six academic tasks and five different lengths of text on a seven-point Likert scale. Ethical ratings ranged from 1 (*completely unethical*) to 7 (*completely ethical*). Table 4, on the following page, shows a comparison of pre- and post-study survey means of students' responses regarding the ethical use of MT by academic task. Table 5, on page 116, shows a comparison of pre- and post-study survey means of students' responses regarding the ethical use of MT by length of text. In both pre- and post-study surveys students rated using MT for "Taking an Exam" as the least ethical of the tasks (pre-study $M = 2.6$, $SD = 1.5$; post-study $M = 2.9$, $SD = 1.7$) and "Translating an Entire Chapter or Article" as the least ethical of the text lengths (pre-study $M = 3.7$, $SD = 1.7$; post-study $M = 3.4$, $SD = 1.6$). These results suggest a consensus among students that it is generally wrong to use MT during exams and for longer texts, likely due to concerns about academic integrity.

The academic task for which students rated the use of MT as most ethical in both survey administrations was "To Check if Your Guesses About Words or Phrases Are Correct" (pre-study $M = 5.0$, $SD = 2.0$; post-study $M = 5.7$, $SD = 1.5$). The length of texts for which students rated the use of MT as most ethical in both pre- and post-study surveys were "Translating Individual Words" (pre-study $M = 5.2$, $SD = 1.9$; post-study $M = 5.8$, $SD = 1.3$), and "Translating Short Phrases" (pre-study $M = 5.0$, $SD = 1.9$; post-study $M = 5.6$, $SD = 1.3$). These results indicate a general consensus among the students that using MT is more ethical for tasks involving shorter passages of text.

Table 4.

Ethical Use of MT by Academic Task (Pre- and Post-Study Survey Means)

Academic Tasks	Pre-Study		Post-Study	
	M	*SD*	*M*	*SD*
Preparing a class presentation	4.2	1.6	5.0	1.4
Working on a translation assignment	3.6	1.5	4.1	1.7
Writing an essay or a research paper	3.9	1.6	4.5	1.3
Completing homework assignments	3.8	1.7	4.5	1.3
Taking an exam	2.6	1.5	2.9	1.7
To check if your guesses about words or phrases are correct	5.0	2.0	5.7	1.5

Note. Pre-study survey $n = 60$. Post-study survey $n = 50$. Likert scale ratings ranged from 1 (*completely unethical*) to 7 (*completely ethical*). Students rated using MT as more ethical for all six academic tasks in post-study survey responses. A reduction in the standard deviations was observed in four of the six tasks in post-study responses.

Table 5.

Ethical Use of MT by Length of Text (Pre- and Post-Study Survey Means)

Length of Text	Pre-Study		Post-Study	
	M	*SD*	*M*	*SD*
Translating individual words	5.2	1.9	5.8	1.3
Translating short phrases	5.0	1.9	5.6	1.3
Translating full sentences	4.6	1.8	4.9	1.3
Translating full paragraphs	4.0	1.8	3.9	1.4
Translating an entire chapter or article	3.7	1.7	3.4	1.6

Note. Pre-study survey $n = 60$. Post-study survey $n = 50$. Likert scale ratings ranged from 1 (*completely unethical*) to 7 (*completely ethical*). Students rated using MT as more ethical for shorter texts and less ethical for longer texts in both survey administrations. A reduction in the standard deviations of responses across all text length categories was observed from pre-study to post-study survey.

Analysis of descriptive statistics from pre- and post-study surveys reveals an observed overall trend: students rated using MT as more ethical for all six academic tasks in post-study survey responses compared to pre-study survey responses. This upward shift suggests that the students' experience of the in-class elements of the study may have contributed to a change in students' perceptions about the ethical use of MT. These findings echo results from a study by Knowles (2022) who observed a 33% increase in students' responses indicating they considered using MT not cheating after they had engaged in class discussions about MT and implemented guidelines for acceptable use. Notably, in the present study the trend toward a more favorable ethical assessment of MT

usage was accompanied by a reduction in the standard deviations for four of the six tasks, indicating a convergence in students' opinions regarding the ethicality of using MT for these particular tasks. Interestingly, the two tasks for which the standard deviations increased were those for which students rated the use of machine translation as less ethical—"Taking an Exam" and "Working on a Translation Assignment"—highlighting the nuanced nature of students' evolving perceptions about the ethical use of MT across different academic contexts.

Moreover, descriptive statistics also indicate that students rated MT usage for shorter texts—"Translating Individual Words," "Translating Short Phrases," and "Translating Full Sentences"—as slightly more ethical in post-study survey responses, while they rated using MT for longer texts—"Translating Full Paragraphs" and "Translating an Entire Chapter or Article"—as slightly less ethical. These results echo findings in research by Jolley and Maimone (2015) and Kim and LaBianca (2017), who found that faculty members also deemed the use of MT less ethical for longer texts. Markedly, in the present study, across all categories of text length, from individual words to entire chapters or articles, a reduction in the standard deviations was observed in the post-study survey responses. This indicates a greater consensus among students regarding the ethicality of using MT depending on the length of the text, suggesting that the in-class elements of the study may have not only reinforced the students' initial perspectives about the ethical considerations of using MT for different lengths of text in academic settings but also may have contributed to more aligned views among them.

While descriptive statistics from survey results provide a general overview of students' ethical perspectives on the use of MT in academic settings, their comments

from interviews and written responses provide deeper insight into understanding their nuanced stance on this matter. Some students expressed uncertainty regarding when MT usage is considered cheating and when it is acceptable. One interviewee expressed doubt about whether post-editing machine-translated output was ethical. She explained that one of her university instructors considered any use of MT as plagiarism and grounds for academic discipline. However, the student considered MT an essential tool to aid her English writing. She chose to use it, despite the teacher's restriction, but felt uncertain about whether she was cheating. She declared, "sometimes [when] I do this it makes me feel like plagiarism, but I don't know if it was plagiarism. It is like you copy some sentence and you change and you act like [it is] yours" (Student Interview 4.2). Her worries over the distinction between translation and plagiarism, underscore the students' uncertainty on this issue. Lack of clarity regarding acceptable MT use is also echoed in the literature. Some scholars have found that inconsistent interpretation and enforcement of academic honesty policies related to MT use can often leave students confused (Correa, 2011; Knowles, 2022).

However, students' written reflections about the mutually agreed-upon guidelines indicate they have a growing awareness of the need to use MT responsibly. In their feedback on the guidelines, all students unanimously agreed with a statement on ethical use that using MT does not excuse plagiarism. The full text of the statement included the following: "Avoid Plagiarism: Ensure that the use of machine translation does not lead to plagiarism. Always credit original ideas and critiques, whether they are directly quoted or paraphrased" (Post-Activity Reflection Assignment Sheet). The students' consensus in the affirmative on this point suggests an understanding of the importance of originality in

their work and of properly citing sources. In their written responses, several students noted that machine translation should be used responsibly as an aid, not as a means to copy or misrepresent the work of others. For instance, one student expressed that the students "use machine translation, but we can't copy. We ought to use our own words to modify the content of the translation. Advocating originality is the expression of one's true thoughts, otherwise translation becomes meaningless" (Student F Feedback on Guidelines). Likewise, another student wrote, "we use machine translation as a tool for assistan[ce] for only. We use it to show our own idea[s] instead of copy[ing from] others" (Student I Feedback on Guidelines). Another student summed up the general consensus on this matter, reflecting, "The definition and tolerance of plagiarism cannot be changed due to machine translation" (Student C Feedback on Guidelines). The students' nuanced stance on the ethical considerations of MT use echoes findings from a previous study, in which Jolley and Maimone (2015) similarly found that students held multilayered perspectives about the ethical use of MT, expressing the need to use it responsibly and judiciously. Taken as a whole, students' ratings from the surveys about the ethics of using MT for different academic tasks and text lengths, combined with their qualitative responses from interviews and written reflections, provide deeper insight into their nuanced stance regarding the ethics of MT use within the context of their academic studies.

Summing up Stance

The pressure students feel to achieve high academic outcomes in EMI classes foments a duality among students about the use of MT in which it is viewed as an essential tool, helpful for immediate and convenient comprehension of complex academic

texts, despite its potential disadvantages for English development. They recognize a need to balance the convenience of machine translation with efforts to actively improve their English reading and writing skills, but they are caught in a tug-of-war between immediate academic demands and long-term language proficiency goals, often opting for the former due to intense pressure to excel and then feeling guilt and shame about doing so. Students' conflicting stance about using MT is further evidenced by their mutual agreement to guidelines for MT use and their corresponding distrust that their peers will follow the guidelines honestly and their instructors will assess them fairly, as well as their nuanced and shifting perspectives regarding the ethics of using MT for different academic tasks and lengths of text.

Design **and** ***Shift:*** **Practical Application & Dynamic Adaptation**

How the students use MT within their learning context is framed within the *design* strand of the translanguaging model of García et al. (2017) and how the students adapt or modify their MT use is framed within the *shift* strand of the model. García and colleagues (2017) use the *design* and *shift* strands to explain the teacher's pedagogical approach using a translanguaging stance, designing curricula that recognize and integrate the students' linguistic strengths and needs while remaining open to spontaneous adaptation as opportunities arise. In the present study, the model is reinterpreted to consider *design* and *shift* from the students' perspectives, representing these strands in terms of how the students use MT apps as translanguaging tools within the context of their studies, and the innovative and dynamic ways they adapt their use to suit their needs. Drawing from surveys, written reflections, and interview data, this section reports what MT applications students are using, with what frequency they self-report using

them, for what purposes they use MT, and how they use it. Despite their conflicting stance on MT, as outlined in the previous section, the data reveal that students frequently use MT for practical academic tasks, applying it in critical, innovative, and dynamic ways.

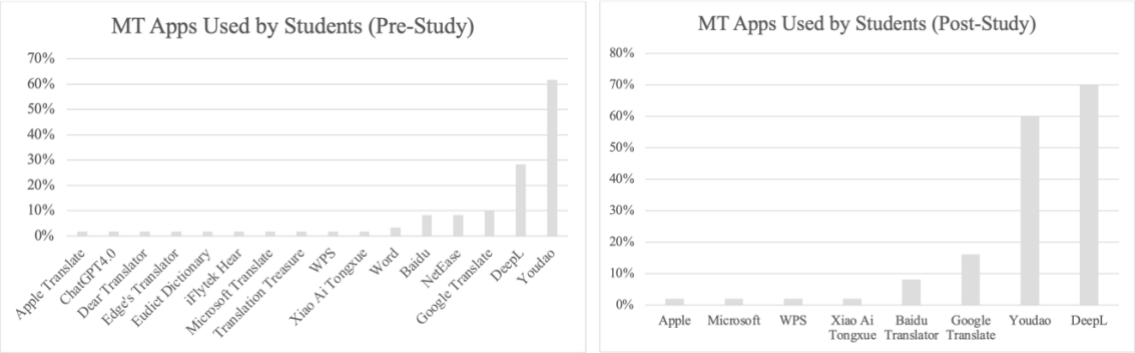
What MT Applications Are Students Using?

Analysis of survey data revealed that students predominantly use one specific MT application, namely 有道翻译 (*yǒudào fānyì;* IPA approximate phonemic pronunciation: /joʊ 'dɑʊ fan 'i/), which is a Chinese-developed machine translation tool made by the Beijing based NetEase company (NetEase, n.d.). The English meaning of 有道 (*yǒudào*) is roughly "knowing the way" and 翻译 (*fānyì*) is the Chinese for "translation." For ease of reporting, 有道翻译 will be referred to as *Youdao* for the remainder of this report. In addition to *Youdao*, students also use several other MT apps, the most common being DeepL and Google Translate. The two charts in Figure 1 on the following page show the MT apps students self-reported using in pre- and post-study surveys. There is a difference in MT tools students self-reported using more frequently between survey administrations. Most notably, more students reported using DeepL in the post-study survey (62%) than in the pre-study survey (28%). While this shift may be attributed to in-class discussions about specific MT applications, including recommendations from the instructor and other students, it also reflects the rapidly changing nature of technology. New apps catch on quickly as technologies develop and trends fluctuate. Likewise, students' preferences in MT applications may shift along with advancements in machine translation, mobile technology, and AI. Also, while DeepL was more popular among students by the time of

the post-study survey, *Youdao* consistently remained a top choice in both survey administrations, with 62% and 60% of students reporting using *Youdao*, respectively.

Figure 1.

MT Apps Used by Students in Pre- and Post-Study Surveys



Note. Pre-study $n = 60$. Post-study $n = 50$. Percentages calculated by number of students reporting use of applications divided by total number of respondents. In both survey administrations, some students reported using more than one MT application, so total percentages are greater than 100.

In the post-study survey, 16% of respondents reported using something other than DeepL, *Youdao*, or Google Translate (notably, Google Translate ranked among the top three choices for the students, despite being officially banned in mainland China), compared to 28% in the pre-study survey. Also, in the post-study survey, only 12% of respondents reported using a single app other than DeepL or *Youdao*, compared to 27%, in the pre-study survey. Another observable difference between pre- and post-study surveys is the total number of MT applications students reported using, amounting to 16 applications in the pre-study survey and nine in the post-study survey.

During interviews, students showed the researcher how they use *Youdao* and DeepL. Student interviewees reported using *Youdao* far more than any other app. They said they liked it for several reasons, including its accessibility on tablets, smartphones, and computers, regardless of the brand or manufacturer (Apple Translate, in contrast, is only available through Apple products). They also report that *Youdao* is not only easy to use but provides additional resources not available in other MT apps. *Youdao* can translate single words, full sentences, and full documents, and users can input text in many ways. For example, *Youdao* has a built-in camera on the mobile app through which users can take a photo of text for immediate in-app translation. Also, users can type or speak to input single words and short phrases or copy and paste up to three sentences of text for translation in the mobile app. However, according to student interviews, if the text is longer than three sentences, the app will request the user to upload a pdf to the desktop app to translate the full document. The *Youdao* desktop app can also translate all text within a selected screenshot using a combination of customized keystrokes and the click of a mouse. Finally, the desktop version of *Youdao* provides Chinese translations by hovering one's mouse over single English words, which many students reported using frequently to look up unfamiliar words. One student also claimed *Youdao* can perform simultaneous translation of spoken English to Chinese and that it keeps a text record of the English and Chinese, though the researcher could not confirm whether this was indeed *Youdao* or another MT app.

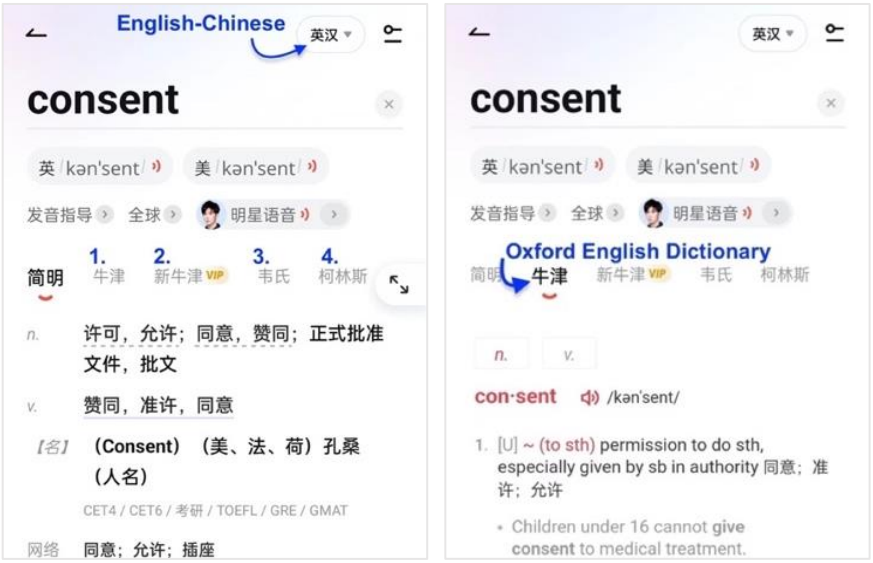
A feature contained in *Youdao*, which many students highlighted as particularly helpful, is access to four well-known English dictionaries, including the Oxford English Dictionary, the New Oxford English Dictionary (available through a paid V.I.P.

subscription only), Webster's Dictionary, and Collin's Dictionary. Both the Oxford English Dictionary and Collin's Dictionary offer definitions in English as well as several examples, all of which include corresponding Chinese translations. Webster's contains only English definitions and examples. Figure 2 shows screenshots from the *Youdao* mobile app of both the main screen (on the left) and the Oxford English Dictionary screen (on the right).

While less robust than the features available for translating single words, the *Youdao* mobile app can also translate short phrases and full sentences. As shown in Figure 3 on the following page, *Youdao* offers not only a translation of the example phrase from English to Chinese but also includes additional examples of the English phrase in context, though this feature does not extend to chunks of text longer than three or four words.

Figure 2.

Youdao *Mobile App Screenshots (Single-Word Translation).*



Note. Screenshots show two different views of the *Youdao* app. On the left is the main screen with Chinese translations and examples. On the right is the Oxford English

Dictionary screen, which can be accessed from the main screen (on the left) by clicking the Chinese characters under the number “1” in blue text. The researcher added all blue text to the screenshots for clarity. Number 1 labels the link to the Oxford English Dictionary, and numbers 2 through 4 label the other English dictionaries available in the app (2. New Oxford, 3. Webster’s, 4. Collin’s). On the top right, highlighted by the blue text “English-Chinese,” users can select the language of translation from a drop-down menu, including English to Chinese (as shown in the screenshots) as well as eight other languages, or, from this same menu, they can switch to an English encyclopedia for more information about single English words.

Figure 3.

Youdao *Mobile App Screenshot (Sentence Translation).*

Note. The *Youdao* mobile app, as shown in the screenshot above, can also translate short phrases and sentences.

Other unique features on the *Youdao* desktop app include uploading a pdf for full document translation, which students did report using though not as often as for translating smaller bits of text, such as paragraphs or shorter passages using the screenshot feature. Also, the desktop app has an additional feature called "authority" which offers quotes pulled from recent online sources in which the word has been used, while the mobile app only offers sample sentences for which the source appears not to be specified.

Furthermore, both the *Youdao* desktop app and the online version can translate both from English to Chinese and Chinese to English, similar to Google Translate, which means students can use it for help with their English writing in addition to reading their English course materials in Chinese.

The students talked about using *Youdao* for writing during the interviews, but it was more difficult for them to demonstrate their writing process to the researcher in real time. Students also may have been reluctant to show the researcher how they used *Youdao* as a writing aid, because they tend to consider it more acceptable to use MT for reading than for writing. One of the interviewees said, previously she used *Youdao* more for reading until she felt that she had come to rely on it too much. Now she uses it more for writing, though she was quick to add she does not translate entire paragraphs of her writing like she used to, rather she only translates "like a word or a phrase" (Student Interview 4.1). However, in a subsequent interview, the same student said, "But in [using MT for] reading, I will translate the whole paragraph…. Because… it's normal…, it is just a reading" (Student interview 4.3). Here, the students' comments reveal not only her

belief that using MT for reading is more acceptable than for writing but also the duality that characterizes the students' experience of MT use within their academic setting.

Despite the challenge of showing how to use *Youdao* for writing, one student did show how the desktop app recommends synonyms for words translated from Chinese to English, which he said he used to make sure his English writing expressed what he intended to say as accurately as possible. He expressed appreciation for this feature, because he felt that his knowledge of English was too basic, so he used it to add depth and distinction to his English writing.

Several students touted *Youdao* as the best app both for translating English texts into Chinese and for helping them to translate their own Chinese writing into English. The screenshot feature of the desktop app and the camera feature of the mobile app were the most frequently cited by students as something they use often to translate their English course materials to Chinese, including PowerPoint slides and paragraphs from electronic documents. As one student explained:

> It's very easy to use *Youdao*, because I can just, like take a picture, and it can translate the whole PPT [PowerPoint], the whole text of the whole sentence into… Chinese. And I still use this… today, because it's hard for us to directly understand the knowledge in English. When we translate it into… Chinese, we can have a deeper understanding about this. (Student Interview 3.1)

The ease of *Youdao*, combined with its versatility through its online version and as a mobile, tablet, and desktop app, make it the most popular among the students for translating both English and Chinese texts.

Many students also reported using another MT app called DeepL to help them to both read and write English texts. DeepL is an AI-powered machine translation tool with the capacity to translate 32 languages. It was launched in 2017 by the German-based company of the same name (DeepL Press Information, n.d.). Unlike *Youdao*, DeepL specializes explicitly in machine translation, so it does not include as many additional features. However, DeepL does offer both a list of synonyms and translations back to the original language for all translated words, regardless of the length of the text, accessible by clicking on each word. Synonyms can be accessed by clicking on the word then clicking "Alternatives" from a pop-up menu. Users can then choose from a list of alternative translations for the selected word, though the AI-generated recommendations do not always make sense. Users can also select "Dictionary" after clicking on a translated word, though, unlike *Youdao* dictionaries, DeepL only provides a translation back to the source language.

One student explained that she preferred to use *Youdao* to help her read course materials but that when it came time to writing papers, she believed "DeepL can translate better than… *Youdao*" (Student Interview 3.1). Other students expressed that they only use *Youdao* and may not be willing to use another app. One student expressed that he was so accustomed to using *Youdao* that it was like comfortable clothing he had worn since middle school. "It is like my clothes... I get it when I was at middle school and... I can use the thing many years until it breaks or cannot use anymore. Yeah. Maybe I will use [it] forever if [I] can" (Student Interview 1.1). When asked if he would switch if someone told him about a better app, he said he probably would not, because he might not be willing to take the time to learn how to use something new. While such thinking may not

be characteristic of all the students, they did express a preference for the Chinese-developed *Youdao* over comparable alternatives. Based on the researcher's review of the literature, no other studies include a report of the types of MT apps used by Chinese English learners in mainland China. Of course, rapid advances in technology could very well render today's most popular MT app obsolete tomorrow.

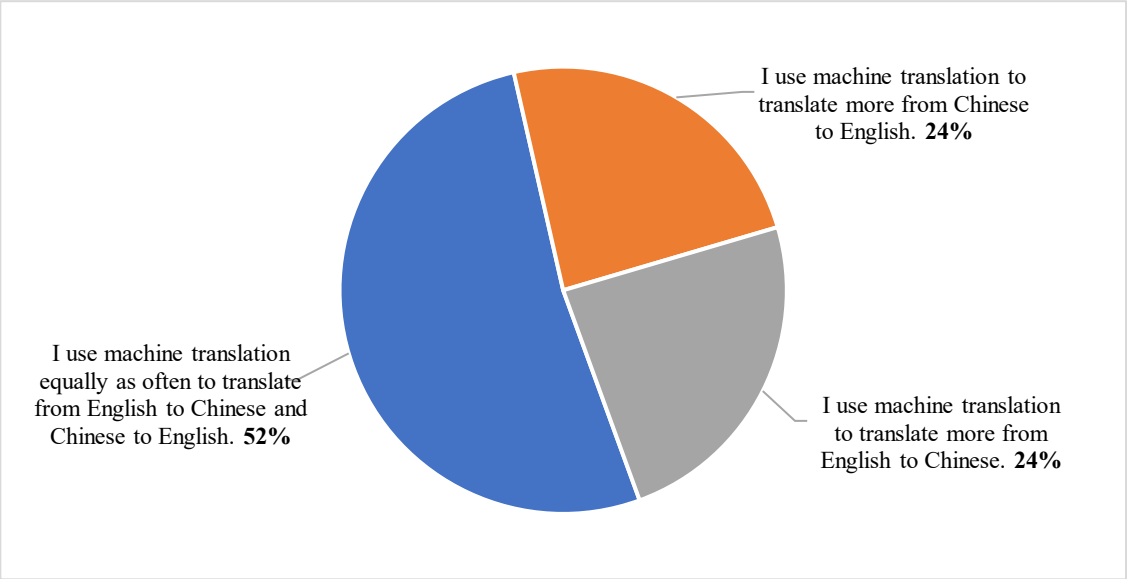
Direction of Translation & Frequency of Use

Student survey data also show students' self-reported direction of translation when using MT as well as their frequency of MT use. Note that only data from the post-study survey are included in this section.

Direction of Translation. The survey asked students to indicate whether they used MT to translate more from English to Chinese, Chinese to English, or equally as often between both languages. The majority of respondents (n = 26) reported using MT equally for translating both from English to Chinese and Chinese to English, suggesting most students use MT to read English texts in Chinese and to write English texts using Chinese as a source language. The remaining responses were evenly divided: 24% (n = 12) preferred using MT to translate from English to Chinese, while the other 24% (n = 12), reported using MT more to translate from Chinese to English. Overall, the results reveal a notable inclination toward translating from English to Chinese. See Figure 4 for a visual representation of students' self-reported direction of translation when using MT.

Figure 4.

Students' Self-Reported Direction of Translation When Using MT



Note. $n = 50$.

Frequency of Use. The survey also asked students to report how often they used MT applications. While only surveys of respondents who indicated they had experienced using MT were considered valid for data analysis, 97% of all pre-study survey respondents (65 of 67) said they had used MT. This statistic echoes findings from other recent studies about MT use among language learners in which virtually 100% of respondents indicated they had used MT apps (Delorme Benites et al., 2021; Knowles, 2022; Ryu et al., 2022; Valijärvi & Tarsoly, 2019). Of the 50 students who completed the post-study survey, seven respondents (14%) claimed they used MT no more than three times a month. The remaining 43 respondents (86%) attested to using MT apps at least once per week, including 28 (56%) who indicated almost daily or daily use. Adding to similar findings from other studies (Delorme Benites et al., 2021), these results reflect a

substantial integration of machine translation into the participants' daily routines. See Table 6 for a breakdown of students' self-reported frequency of MT use.

Table 6.

Students' Self-Reported Frequency of MT Use (Post-Study Survey)

How often do you use machine translation apps?	*Frequency*	*Percentage*
Rarely (less than once a month): I seldom use machine translation applications, generally less than once a month.	1	2%
Occasionally (1-3 times a month): I use machine translation applications occasionally, around 1 to 3 times a month.	6	12%
Regularly (once a week): I use machine translation applications regularly, about once a week.	2	4%
Frequently (2-4 times a week): I use machine translation applications frequently, around 2 to 4 times a week.	13	26%
Very frequently (5-7 times a week): I use machine translation applications very frequently, almost daily.	16	32%
Daily: I use machine translation applications every day.	12	24%

Note. $n = 50$.

Purposes for Students' MT Use

Through analyses of data from surveys and interviews, the researcher identified four primary purposes for which students use MT:

1. To read English texts and course materials (for learning course content).
2. To write papers and complete assignments in English.
3. To look up unfamiliar words (as a dictionary).
4. To learn new vocabulary.

One survey question asked students to rate how often they used MT for a series of eight purposes. Likert scale frequency ratings ranged from 1 (*never*) to 7 (*daily*). In the

post-study survey, the purposes for which students indicated using MT most often were "Looking Up Unfamiliar Words" and "Writing English Texts," 76% and 74%, respectively, reporting "regular" (at least once a week) use. These results echo findings from several previous studies indicating students frequently use MT to look up new vocabulary (Bahri & Mahadi, 2016; Chen, 2020; Klekovkina & Denié-Higney, 2022; Mirzaeian, 2021; Ryu et al., 2022; Valijärvi & Tarsoly, 2019) and to write texts in their target language (Ahn & Chung, 2020; Jolley & Maimone, 2015; Klekovkina & Denié-Higney, 2022; Lee & Briggs, 2021; Tsai, 2019; Xu, 2022). See Table 7 for post-study survey results depicting students' frequency of MT use by purpose.

Table 7.

Frequency of MT Use by Purpose (Post-Study Survey)

Purpose	*Mean*	*SD*
Listening to Spoken English	3.6	1.7
Speaking to Others in English	3.7	1.7
Reading English Texts	4.6	1.5
Writing English Texts	4.2	1.4
Checking Grammar	4.1	1.7
Learning Grammar	3.8	1.6
Looking Up Unfamiliar Words	5.1	1.8
Learning Vocabulary	4.7	1.8

Note. $n = 50$. The survey question asked students to rate how often they used machine translation for each of the above purposes using a 7-point Likert scale. Likert scale frequency ratings ranged from 1 (*never*) to 7 (*daily*).

High percentages of students also indicated regular use of MT for "Reading English Texts" (72%) and "Learning Vocabulary" (68%). Numerous prior studies have also reported reading as one of the most common purposes for which students use MT (Ahn & Chung, 2020; Alm & Watanabe, 2021; Bahri & Mahadi, 2016; Chen, 2020; Clifford et al., 2013; Niño, 2009; Sukkhwan, 2014).

The purposes for which students indicated using MT least often were "Listening to Spoken English" and "Speaking to Others in English," 54% and 46%, respectively, reporting "occasional" (three times a month or less) use.

Using MT for Listening. Notably, despite indicating relatively lower use of MT for listening, most interviewees mentioned either personal experimentation with MT to help them understand spoken English in class or observing their classmates do so. Their anecdotes generally followed a similar pattern of abandoning the practice relatively quickly, citing slow and inaccurate output combined with the realization they were spending more time focusing on their electronic devices than on what the teacher was actually saying. One student claimed to have only tried MT as a listening aid for two or three weeks before giving it up. She admitted, "I found my attention is on [my] phone, not on... what professors [were] speaking…. I forced myself not to use it, because I will look [at] my phone all the time and ignore what people say around me" (Student Interview 4.1). Another student said she had not tried it herself but had noticed her classmates using it, though with substantially less frequency by about the second semester of freshman year. Two interviewees commented on MT for listening as a sort of

"insurance" (Student Interview 4.1) to provide them with text to refer to just in case they did not understand something in class, but they typically would try not to look at it.

Furthermore, regarding using MT for listening, one student recounted that one of his instructors had used a simultaneous translation feature in PowerPoint in class, generating Chinese subtitles as he lectured. The student said he deemed this approach "not very effective," estimating only about 60% to 70% accuracy, and "not very good for students'… listening." He further noted that the translation was "pretty slow, because when the professor is talking about another thing…, the subtitle is still [on] the past thing that he was talking about" (Student Interview 2.3). These examples indicate that students tend to experiment with MT for listening but then begin to critically assess its value, generally concluding that it is not efficient for listening to spoken English in an academic setting.

Using MT to Look Up Unfamiliar Words and Learn New Vocabulary. Data from interviews corroborate the survey results indicating the students frequently use MT to look up unfamiliar words and learn new English vocabulary. In numerous accounts, students referred to MT as a convenient electronic dictionary. One student commented he would have to start carrying around a large paper dictionary if MT did not exist or was strictly banned from classes. Another student indicated he would be "more likely to [use MT] instead of [a] dictionary" (Student Interview 1.2), and another said of Apple's built-in translation tool, "I think it is just a dictionary" (Student Interview 5.1). Previous studies echo the finding that students tend to confound MT apps with electronic dictionaries (Faber & Turrero-Garcia, 2020; Jin & Deifell, 2013).

Some MT apps do have well-known dictionaries built into them, such as *Youdao,* and can offer robust replacements for paper dictionaries. Most popular MT applications, however, specialize only in direct translation, as with DeepL and Google Translate. These apps provide a more convenient replacement for bilingual direct-translation dictionaries for language learners but lack the features of traditional dictionaries.

While students expressed familiarity with paper dictionaries, they were much more versed in using electronic alternatives. Many explained they could not use smartphones in Chinese public schools, but their teachers allowed them to use paper and electronic dictionaries. Several students recounted their experiences using rudimentary electronic dictionaries in primary and secondary school. Some said these devices could translate full sentences, but they typically used them to translate single words. One student explained that in primary school, her teacher taught them "how to use dictionary to search, and I think it's a beginning for us to learn about the translate [apps]" (Student Interview 3.1). Such early exposure to electronic dictionaries may explain their tendency to consider MT as a direct replacement for a dictionary.

Students often recounted using MT for daily use to look up unfamiliar words, but their descriptions of using MT as a dictionary also reveal how they engage with language as developing bilinguals to meet the demands of their coursework and to develop their English skills. Elaborating on how he uses MT to aid in his studies, for example, one student explained, "I use it like [an electronic] dictionary at class or at my apartment. When I met some word I didn't know or professors speak some word I didn't know, I will search it [either] on class or after class" (Student Interview 1.2). Students use MT apps to engage in real-time with the language they hear or read in and out of class, often

employing these tools to translate specific words or phrases rather than entire sentences or paragraphs. Similar to Ahn and Chung's (2020) observation of Korean students with higher English proficiency engaging more critically with MT, the students in the present study appear to approach MT systematically to clarify the meanings of new English terms, rather than for indiscriminate translation of text.

Moreover, students use MT not only to translate words but also to understand their meaning and application within specific contexts. Several students, for instance, demonstrated how MT apps "can show… synonyms [and] specific examples for these words by using [them] in a context" (Student Interview 2.1). As one interviewee articulated, "I will translate the words into Chinese to specifically check the word that is used in which context…. Maybe I can know more about how to use the words in a specific context" (Student Interview 1.2). Students described using MT to learn how words are used in different sentences, indicating a deeper engagement with language learning beyond direct translation. The same student continued, "I will do more, like check the English explanation about words" (Student Interview 1.2). This deeper exploration of words in context, aided by MT, echoes findings from previous studies among both Chinese and Korean learners of English (Chen, 2020; Lee, 2020).

Furthermore, students also described ways they use MT apps for language learning. Some, for example, explained their use of MT to study synonyms as a way to expand their vocabulary, a practice Xu (2022) also observed among Japanese language learners in the United States. Other students talked about using apps that include machine translation but are tailored for language learning to include word study plans, quizzes, and progress tracking. While they claim to use MT tools primarily as electronic

dictionaries, the students also utilize them to study and memorize English words. In essence, they use MT apps not only for translation of unfamiliar words but as multifunctional tools for engaging with English in real time, demonstrating an instinct to seek out and use multiple resources to enhance their current linguistic capacity and develop their language skills.

Using MT to Read English Texts and Course Materials. Student interviewees described using MT applications for reading to help them gain initial understanding of course texts, to add depth to their comprehension of course content, to keep up in a demanding academic environment, and to develop their English skills.

Students explained they frequently employ MT to gain preliminary and quick understanding of course content that is either completely new to them or which they have only previously studied in Chinese. They reported using MT to understand academic articles, PowerPoints, and assignments to get a basic understanding of course materials, especially when they involve complex, academic, or technical language. When faced with reading lengthy and complex academic articles, for example, one student expounded, "I want to use a translate [tool] to get the framework of the logic of the... the articles, and… to get to the [general] concept" (Student Interview 5.1), explaining that MT offers the chance for students to access complex academic concepts they would not be able to comprehend without such assistance. The same student then clarified, "but I read again to get more details about that" (Student Interview 5.1), indicating an awareness of the need for further in-depth study beyond reading a machine-translated text. In a previous study, Valijärvi and Tarsoly (2019) likewise reported students used MT to gain a general overview of the text before reading in more depth. Students in the present study

expressed the need to use MT to understand complicated texts in subjects ranging from economics to business to literature, including textbooks and articles from academic journals. Moreover, students frequently mentioned using MT to help them read instructions or questions for class assignments. In the words of one student, “It’s very academic, and it’s hard for us to understand” (Student Interview 3.1), so she and her classmates use MT to provide an entry point into college-level course content, echoing the findings of Clifford et al. (2013) who reported 60% of participants in their study indicated using MT to read instructions, questions, and assignments.

Students also frequently mentioned using MT to read English texts not only to gain an initial understanding of the content but also to meet the rigorous demands of their EMI courses. They explained a feeling of necessity to use machine translation for reading excessive amounts of academic materials to save time. Students described the need to comprehend complex material quickly and efficiently due to time constraints in their academic schedule. One student expressed, when “I read by myself [it] was taking too long…, and I have… no more time to read… it” (Student Interview 4.1). Students also explained using MT to locate and understand crucial parts of English texts quickly, both in and out of the classroom, allowing them to focus on the most relevant sections of their readings without worrying about the language. They recognize MT as a practical necessity to meet high academic demands. One student summarized this need by declaring, “we need more time.... [Without MT] it will [be] hard for us to understand the knowledge and to learn every day…. [MT] can help us help us to do these things better and fast” (Student Interview 3.3).

Furthermore, students often expressed that they would like to invest more time reading in English without the aid of MT to improve their English skills, but the immediate pressure to complete coursework compels them to prioritize understanding course content over language development. This trade-off is especially evident in students' reports to choose to read machine-translated material in Chinese to save time, with the intention of revisiting the English version for comparison and deeper learning, but rarely doing so. As one student admitted, "80% of time I will read [the machine-translated text in Chinese] only… once" (Student Interview 4.1).

Several students expressed an awareness they may be becoming too dependent on MT for academic reading. To address their concerns, some made a conscious effort to reduce their use of MT for reading, though they admitted completely discontinuing the practice was not realistic given the current demands of their studies. In fact, multiple students spoke of "forcing" themselves to rely on MT less, with the intention of improving their English reading skills. One student explained:

> I'm trying to force myself not [to] use machine translation that often…, [because] I think I need to enhance… my… speed of reading English content. I think if I'm not relying on machine translation, maybe I can have a quicker speed on comprehend those English materials. (Student Interview 2.3)

Students see the utility in using MT for reading college-level academic texts, but they also feel the need to become less reliant on MT to develop their English reading skills. Several previous studies also reported students' concerns that using MT might hinder their ability to improve their language skills (Ahn & Chung, 2020; Faber & Turrero-

Garcia, 2020; Garcia & Peña, 2011; Giannetti, 2016; Ryu et al., 2022; Sukkhwan, 2014; Valijärvi & Tarsoly, 2019).

Despite their awareness of the potential drawbacks of using MT applications, students predominantly view them as essential and practical tools to deepen their understanding of subject matter in their EMI courses. Many students described using MT apps critically and strategically to assist in their reading of course materials to help them gain more in-depth understanding of course content, and, in some cases, also developing their English skills. One student asserted that some academic articles were still too difficult to understand, even after she had used MT to translate them into Chinese. Her efforts to use MT to gain a preliminary understanding had been in vain. She explained her subsequent process of translating only one paragraph at a time to facilitate a comparison of the English and machine-translated Chinese. She reported that this method helped her identify key words in English while also gaining a more in-depth understanding of the text. As she explained, "If I use [MT to translate] the whole article... it's hard for me to… connect these two sentences. But if I use [MT to translate] just a short paragraph it is much easier for me to understand" (Student Interview 3.1). This student's experience exemplifies the adaptive ways students have integrated MT into their learning process.

Another student described his process of deciding what to read in English and what to translate into Chinese using MT. He explained that upon receiving course materials, he differentiates between those that are important to learn for an exam and those that may only provide background or supporting information. For the latter, he uses MT to get the main idea quickly, unless he has time to spare to read them in English. For the former, he "will use… English to understand the document," so he can "connect the

English questions with [his] knowledge" (Student Interview 5.2) to ensure he is well prepared for his exams.

Similarly, other students described balancing the use of MT with attempts to read and understand course material in English, often attempting to read first in English and refer to MT only when necessary. One student, for example, outlined his practice of reading course materials in English and then checking the machine-translated version in Chinese to ensure he understands the content correctly. He also explained using MT "if the sentence is too long for me to comprehend, because I need to find out… the main meaning that the writer wants to give me" (Student Interview 2.2). Such comparative and strategic approaches demonstrate more selective and critical MT usage that can help students balance the immediate need to understand and keep up with their coursework with their long-term goal of improving their English.

Moreover, students also strategically use MT to expand their vocabulary and understand the precise meaning of academic terms, indicating a focus not only on understanding course content but also on English language development. They express an understanding that MT can facilitate learning at many levels. This is expressed in one student's statement that "[MT apps are] tools to help me to better express and understand… English… to help me study and learn English" (Student Interview 4.3). Expressions such as this indicate that students use machine translation not only for immediate comprehension but also for longer-term language acquisition.

The students intuitively turn to MT for reading to use the linguistic strengths of their L1 to help them understand complex course texts. According to García et al. (2017), such intuition reflects bilingual students' inclination toward translanguaging. "When

bilingual students engage with texts, they do so while drawing on all their linguistic resources, even if those texts are rendered only in English… the process will always be bilingual" (García et al., 2017, p. 17). The students find ways to use their native Chinese as an asset to help them gain more in-depth understanding of course content, and MT applications provide a fast and convenient option. One student articulated as much by explaining that she has a much richer vocabulary in Chinese. She explained, "if I [translate] into the Chinese, [I] have a deeper understanding" (Student Interview 3.1). This student's comment demonstrates an awareness that she needs to tap into her full linguistic repertoire to comprehend new complex concepts at a deeper level. At the same time, students recognize the limits of MT and understand that translation alone is not sufficient to master course content on which they will be tested in English. They recognize the need to challenge themselves to develop their English reading skills through selective and strategic use of MT rather than fully relying on it as a panacea to meet all their academic needs. In essence, the students use MT strategically for reading in their EMI courses throughout the learning process, as an initial step to access new and complicated course content, to save time and keep up in a demanding academic environment, to clarify challenging concepts within their course materials, to aid in the development of their English skills, and to add depth to their understanding of core knowledge.

Using MT to Write Papers and Complete Assignments. Another frequently cited purpose for which the students said they use MT was to write college-level papers and complete course assignments, describing several ways they have integrated MT into their writing process. Notably, post-study survey results indicated large percentages of

students use MT at least once a week for "Learning Grammar" (56%) or "Checking Grammar" (60%), though grammar was rarely mentioned in the interviews. When students did mention using MT for grammar, the researcher coded it as part of the students' writing process. Moreover, the overlap of using MT for reading to prepare for writing was also evident in the students' accounts, as they recognized reading as an integral part of the writing process, some describing a preference for one MT app (*Youdao*) for reading and another (DeepL) for writing to tap into the different strengths of available tools.

The students described a substantial change from high school to college in their use of MT for writing. In high school, they recalled using it only for writing short English assignments or not at all, explaining the English they were expected to use prior to starting their university studies was simple and formulaic. Upon starting EMI college classes, however, the students quickly recognized the need to improve their English writing skills. Faced with this sudden escalation in expectations, from producing English for simple tasks to writing sophisticated academic papers, the students turned to MT to help them meet the higher standards of university-level writing.

Like their explanations about using MT for reading, students consider MT for writing essential to helping them meet the rigorous demands of their courses. As one student expressed, "I have to [use MT]. If I have more work, I will use it more often. If the homework [is] something less, I will write… some English by my own" (Student Interview 1.1). The heavy workload and the demand for high academic performance compel students to rely on MT tools, though they acknowledge that, under less pressure, their reliance on MT would likely decrease.

The students described using MT to complete course assignments, ranging from writing papers and essays to preparing speeches and presentations to writing shorter passages of text for assignments that require less writing. Using MT for writing academic essays was often mentioned, as one student explained, "when you [have] to write pretty long text…, and we need to write the essays to talk about some maybe social questions, and it's also very hard for us. So we need to use the translator machines" (Student Interview 3.1). Moreover, some students recognized that the appropriateness of using MT for writing can vary between classes. They expressed an understanding that in English language classes, the goal is to enhance their language skills, so teachers require an accurate assessment of their writing abilities without MT assistance to provide effective feedback. In contrast, for content classes, the emphasis is more on in-depth understanding of the subject matter than on language proficiency, in which case they consider MT usage more acceptable. As a case in point, one student declared:

> If this is a[n] English course I will completely write the essays on my own…, but if in some, like global [studies], for instance, maybe I'll use machine translation, because... too much content that I have to write, I have to fit it into my essay, so maybe I will use machine translation to better facilitate me to do so. Because, I think… my English proficiency cannot completely support me to write the essays about like human trafficking, those kind of questions. So I think it is reasonable for using machine translation. (Student Interview 2.2)

While students turn to MT to help them write academic essays, they hold an awareness that it may be less acceptable in some circumstances and express the intention to adjust their use accordingly. Students' nuanced understanding of the tasks for which using MT

is more or less appropriate reflects the general sentiments reported by language instructors in several different studies (Clifford et al., 2013; Faber & Turrero-Garcia, 2020; Stapleton & Leung Ka Kin, 2019), demonstrating that the students may be attuned to the perspectives of their teachers.

As with using MT for listening and reading, students often initially experiment with MT for academic writing. Over time, they come to use MT as an aid to enhance their English writing, rather than as a substitute for engaging in the writing process. Some students recollected learning hard lessons from submitting assignments they had written in Chinese and then submitted for credit without any editing or revision. In some cases, their instructors flagged their writing for MT use and reprimanded the students. In other cases, they got away with it, but carried a sense of guilt that led them to mitigate their MT use later on. To illustrate the students' general feelings about using MT for writing, one student explained, "Reading is more… for myself, but [for] writing… I need to work with my professor together. So…, I think if I use the machine translation on reading it will not upset me. But using in writing, it may upset me" (Student Interview 1.1). The interviewee's expression of feeling "upset" by his use of MT for writing, exemplifies the students' awareness that they should use it more as an aid in the writing process rather than as a shortcut to producing English texts. Several previous studies have likewise found that language students tend to use MT critically as a support for writing rather than to bypass or replace L2 writing (Alm & Watanabe, 2021; Chen, 2020; Niño, 2009).

Students' accounts reflected that they use MT as an integral part of the writing process in innovative ways, echoing findings in other studies that students engage dynamically with MT during writing (Ahn & Chung, 2020; Chen, 2020; Lee, 2020;

Sukkhwan, 2014). In fact, students detailed several MT-based strategies they have integrated into their many different writing processes, demonstrating evolving shifts in how they strategically engage with MT apps to help them with their English writing. These innovative shifts in the students' MT use also confirm their translanguaging instincts by intuitively engaging their full linguistic repertoire as they complete college-level writing tasks. The researcher has identified six of the students' MT writing strategies and expounds them in the following pages. They include pre-editing, post-editing, post-checking, selective translation, concept-searching, and cross-referencing.

MT Writing Strategy: Pre-Editing. One strategic way in which students use MT for writing is through pre-editing Chinese text prior to inputting it into MT. One student said she and several of her classmates had noticed "pretty strange" results that were "deeply influenced by… Chinese structure of the sentence" when they would input Chinese she described as "what we use in our daily life" (Student Interview 3.1). She outlined a process of pre-editing Chinese writing in which she "will change the structure of the sentence. Just more like the English… sentence structure" (Student Interview 3.1) to manipulate the MT output to result in more correct English. She explained that she had come to use this practice through her own experimentation with MT and later discovered that many of her classmates were doing the same. This strategy demonstrates a shift in MT use through thoughtful and critical engagement over time, indicating a sophisticated awareness of the differences between the grammatical and syntactical structures of Chinese and English. In a previous study, Lee (2020) observed this same strategy among Korean learners of English, and Bowker (2020a, 2020b) promoted it to international business students and business English instructors in MT literacy workshops.

MT Writing Strategy: Post-Editing. Another innovative MT writing strategy students frequently referred to is post-editing machine-translated text. Students cited multiple reasons for utilizing this strategy, including to make it sound more like their own voice, to ensure their intended meaning is clear, and to make their language "look beautiful" (Student Interview 4.1). Students shared mixed motives for post-editing machine-translated text to sound more like their own voice. Some explained they did it to make their writing more understandable to themselves, while others said they did it so their teachers would not know they had used MT, either to avoid scrutiny or to get a higher grade. "For example," explained one student, the MT app "uses some… words we never used or never learned…, [so] I will change into similar words I can understand" (Student Interview 3.1). Another student told how she reviews MT output and looks up unfamiliar words to find synonyms she knows and would be more likely to use, because she did not want her teacher to think she had not written it herself. The potential deception in the students' motives aside, their descriptions of post-editing show dynamic engagement between their primary and target languages.

Other students described more academic motives for post-editing machine-translated text. For example, one student pointed out that MT output often does not reflect specific grammatical and syntactical English forms they had learned in class. She recounted that through using a post-editing strategy she inserts targeted English grammar, such as present perfect tense, and syntax, such as "who" to indicate a relative clause, into the text to demonstrate to her teachers she is integrating what she has learned in class. In this case, the student is critically engaging with the text to experiment with more complex forms of English in her writing.

Other reasons students mentioned for post-editing showed a nuanced understanding of the need for different writing styles on different occasions. For instance, one student differentiated between how she would post-edit MT output for a speech compared to an academic essay. She explained, for a speech or a presentation, she "will change… into… easier [words] to help my audience know what I am saying" (Student Interview 4.3). She carefully edits the machine-translated text to ensure her audience can follow along and clearly understand. Conversely, when preparing an essay, she chooses "more academic or more formal" words to meet the demands of the occasion. These strategies for post-editing machine-translated text highlight the students' innovative application of MT in their writing processes. Previous studies echo the finding of students post-editing machine-translated texts (Ahn & Chung, 2020; Chen, 2020).

MT Writing Strategy: Post-Checking. Using MT to post-check what they have already written in English, is another example of how students have strategically integrated MT into their writing processes. In this strategy, rather than translating the Chinese they have already written directly into English, they first write what they would like to say in English without the aid of MT. Next, they write another version of what they would like to say, but this time in Chinese. Then, they use MT to translate their Chinese text to English. Students reported that they then compare the MT output to what they have already written and decide whether the machine-translated version can provide insights for editing their English version or become a possible replacement for what they have already written.

Several students described implementing this post-checking strategy to varying degrees. In one instance, a student demonstrated the process to the researcher. Upon

seeing the MT output, the student declared there was nothing new in the MT version he could use, because it did not quite accurately convey what he wanted to say. He said he would retain his own original English sentence. However, the researcher noticed that the student changed his original sentence by adding something that had not been included before but had shown up in the MT version. He mostly kept his original sentence but added more depth after the MT-assisted post-check. When the researcher asked about the addition, the student explained that sometimes he thinks of things with his "Chinese mind" that he overlooks with his English mind, because his vocabulary is more robust in Chinese (Student Interview 2.2). Utilizing the strategy of post-checking with MT, the student was able to add depth and complexity to his English writing.

Other students further articulated that part of the post-checking strategy included a form of translation that happened in their minds. They described translating in their heads what they think the sentence should be in English to Chinese and then attempting to translate it back to English, turning to MT if necessary. As one student explained, when "I want to know if there is something wrong with my sentences...., I can write [them] with my mind [in] Chinese…. And if I didn't know how to translate… from Chinese [back] to English, maybe I will use [machine] translation" (Student Interview 1.2). Similarly, another student described using MT to check the structure of his English sentences by translating it to Chinese in his head and then determining whether it says what he intended to say. If not, he will modify the Chinese, use MT to translate it back to English, and then review to see if it still says what he intended. Post-checking, then, becomes a way for the students to combine their current knowledge of English with their L1 to systematically improve their English writing. In a prior study, Kennedy (2021)

similarly showed that 58% of students taking a mandatory English class in Japan self-reported utilizing MT as a strategy to proofread their own English writing prior to submission. This finding also generally echoes findings from several other studies reporting students use MT in various ways to check and revise their writing (Clifford et al., 2013; Klekovkina & Denié-Higney, 2022; Lee, 2020; Lee & Briggs, 2021; Mirzaeian, 2021; Xu, 2022).

MT Writing Strategy: Selective Translation. The strategy of selective translation simply involves students using MT when they are unsure about how to write something in English. While it may seem like a small and obvious use for MT, students reported employing this strategy to help them express themselves more clearly in English when they have questions about word use, grammar, or syntax. One students' reflection expresses this strategy well, "I will use translation software only when I can't write a sentence" (Student Q Post-Activity Reflection). When used in this way, MT takes on the role of consultant, offering students a way to experiment with language they may not feel confident enough to try without assistance. Another student reflected, "we can actually try to translate in English by ourselves at the very beginning of writing a paper…. But inevitably, there are some sentences that our scarce vocabulary has no way to express, so we need to use machine translation" (Student D Post-Activity Reflection). Another student's remark about the inefficiency of writing without the assistance of MT echoes the strategy of selective translation:

> It is not a bad thing to combine machine translation with my writing process. On the contrary, it can adjust my improper words and sentences to make my essay

more smoothly. I found… [writing] by myself without machine translation… is inefficien[t]. (Student B Post-Activity Reflection)

A prior study involving college students learning Spanish in Australia (Garcia, 2010) claimed students spent less time engaging with the writing process when using MT for L2 writing. The researcher suggested that less time pausing to think while writing indicated the involvement of less critical thought. However, in the present study, students' descriptions of how they use MT for selective translation suggests substantial engagement and critical thought in their L2 writing process.

MT Writing Strategy: Concept-Searching. The strategy of concept-searching involves using a digital search tool to find common English usage for phrases related to a concept of interest. While not restricted to MT as the tool to employ this strategy, it does show innovative use of digital technologies to enhance English writing. One student described his process of concept-searching using an app called *Baicizhan* (百词斩), which is a Chinese-developed language learning app designed for Chinese speakers to learn English. While *Baicizhan* cannot be considered a machine translation tool like *Youdao* or DeepL, it does include a dictionary and offers sample sentences and synonyms for English words. The student demonstrated inputting a key word into the app to find example sentences in which the word is used, with the aim of determining how the word is commonly used in context, so he can then use it properly in his own writing. The student shared an example in which he wanted to write something about the atmosphere at Christmas time but was not sure whether his choice to write "in Christmas" would reflect common usage. He typed "Christmas" into the app, reviewed the provided sample sentences, and discovered that "during Christmas" would likely be a more common way

of writing what he wanted to say, so he changed his own writing accordingly (Student Interview 5.2). This strategy demonstrates not only resourceful usage of technology but also an awareness that the vast corpora of English content available online can be used as a reference to find examples of English being used in context. This practice is similar to a strategy Ryu et al. (2022) taught American university students studying Korean, instructing students to use Google News searches to find real examples of target vocabulary in context. Likewise, Chang (2022) observed students using internet search engines to find examples of common usage for new L2 words (Chang, 2022). Hofstadter (2018) also demonstrated this strategy to search for specific strings of Chinese words using Google, though his purpose was to prove the inaccuracy of Google Translate rather than to propose a writing strategy.

MT Writing Strategy: Cross-Referencing. The sixth writing strategy for which students employ MT is cross-referencing multiple MT apps to compare output and checking machine-translated text using other available tools. Several students mentioned checking the output from multiple MT apps to see whether they provided similar or better translations. Some students commented on their recognition that the quality of some applications was better than others, denoting attentiveness to variations in possible machine-translated output and citing clear preferences for certain apps. One student, for example, expressed her preference for *Youdao* for reading course materials but insisted that DeepL proved to be a better option for writing. The students are aware of an array of MT apps and often turn to more than one to cross-reference results. One student mentioned using Grammarly, another AI-driven tool designed to enhance English writing, when she was uncertain about the accuracy and quality of machine-translated

text. This cross-referencing of multiple apps to check MT output provides another example of students' innovative and adaptive MT use in which they are combining their own linguistic capital, including English and their L1, with several outside resources to improve their writing. Similar strategic cross-referencing was found by Chang (2022) in a study of foreign students learning Chinese in Taiwan.

Students' creative uses of MT as reflected in these six strategies, reveals a dynamic and thoughtful approach to incorporating MT into their English writing processes. The strategies not only showcase the students' adaptability and resourcefulness but also highlight their ability to leverage their full linguistic repertoires in academic contexts. The students' engagement with MT apps reflects their translanguaging instincts, as they fluidly navigate between languages and across external resources in pursuit of academic success (García et al., 2017). These strategies not only demonstrate the students' *design*, or how they use MT for practical purposes within their academic context, but they also underscore more critical MT use and innovative and dynamic *shifts* in how they engage with MT apps to complete their coursework and improve their English writing skills.

Summing Up Design and Shift

This exploration of how students use MT in their academic context reveals practical day-to-day application and strategic and innovative MT use. Survey data reveal that students are predominantly using two MT apps, namely *Youdao* and DeepL, but several others are also represented in the data, reflecting several available options. These apps offer users not only direct translations in many different languages but also an array of features designed to enhance the users' understanding of their target language. The

survey data also show students express an inclination for English-to-Chinese translation, which corroborates many accounts from interviewees who reported using it often to read their English course materials in Chinese. Furthermore, survey data indicate that the students use MT apps with a high degree of frequency, 86% reporting they use them at least once a week. Moreover, students reported using MT most often to look up unfamiliar words, to learn new vocabulary, to read English texts and course materials, and to write papers and complete assignments. They expressed an awareness that MT can hinder their language development, but they also described using it in strategic ways to enhance their reading and writing skills and to learn course content and new vocabulary.

Chapter Summary

This phenomenological study has explored the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China. Through pre- and post-study surveys, in-depth interviews, and written responses, the researcher collected numerous accounts of the students' perspectives and practices regarding their use of MT.

The researcher reported the findings through a reinterpretation of the three-strand translanguaging model developed by García et al. (2017), each strand corresponding to an element of the students' experience of machine translation: *stance*, reflecting the students' perspectives about MT use; *design,* reflecting how they use MT; and *shift,* representing how they adapt their MT usage to meet their evolving academic needs.

The findings indicate that the students' *stance* on MT use within their academic context is one of duality, of holding conflicting beliefs about the necessity and the drawbacks of MT use at the same time. They simultaneously claim MT is essential for

students in their program and that it will ultimately impede their English development. Such beliefs reflect the convergence of messages they carry from past and present teachers and the immediate reality of needing to meet the demands of college-level academics in a language most of them have only previously used for low-stakes coursework. Thrust into a new EMI environment, they believe they need to use MT to succeed but feel guilty for doing so and attempt to hide their MT use. Moreover, students' expressions of distrust related to mutually agreed-upon guidelines for MT use revealed another layer of duality. Their expression that the guidelines were a good idea, juxtaposed with distrust about whether their classmates would follow the guidelines honestly and whether their instructor would assess them fairly, further demonstrates the state of duality characteristic of how the students experience using MT within their academic setting.

Further findings, presented through the lens of the *design* strand of the translanguaging model, paint a picture of how students use MT. Analyses of survey and interview data show that students draw from a number of MT apps with features that enhance two-way translation. They also reveal students as frequent MT users for multiple purposes to enhance understanding of course materials, complete assignments, and improve their English skills.

Finally, the *shift* strand of the translanguaging model represents how students adapt or modify their MT use. Students' accounts explain how they turn to MT for help in their EMI classes and then discover more critical and innovative applications through experimentation. Moreover, descriptive statistics from survey data show students rated using MT as more ethical for the academic tasks measured in their post-study survey

responses compared to their pre-study survey responses. This shift in stance may be, in part, a reflection of the students' participation in open discussion about MT with their instructor and application of the mutually agreed-upon guidelines for MT use.

Overall, the students' experience of using machine translation in the Chinese-foreign, English medium instruction, joint degree program in southern China, where this study took place, comprises a convergence of conflicting perspectives and innovative practices that are constantly shifting depending on instructors' positions and class policies, students' evolving needs, and the advancement of technology.

CHAPTER 5 DISCUSSION AND CONCLUSIONS

This study set out to explore the research question: What is the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China? The findings presented in the previous chapter portray the students' experience of using MT as a convergence of duality, practical application, and dynamic adaptation, each framed within a corresponding translanguaging strand: *stance*, *design*, and *shift*, respectively, from the translanguaging pedagogy model of García et al. (2017). In the discussion that follows, the researcher interprets these findings and explores their potential pedagogical implications. Additionally, the discussion highlights the study's limitations, offers recommendations for educators, and suggests directions for future research.

Interpretation and Implications

Stance: Duality

A predominant theme characterizing the students' stance on using MT is duality, reflected in their conflicting beliefs that MT is simultaneously essential and detrimental, and contributing to feelings of guilt for using it. This contradiction was also revealed in their response to mutually agreed-upon guidelines for MT use. While students accepted the guidelines, they also expressed distrust that their classmates would honestly follow them and that their instructor would apply them fairly to assessment. Such duality is not unique to the students in this study, as it parallels findings in the literature indicating that teachers also hold disparate views about MT use, considering it beneficial for some learners and less valuable for others (Kelly & Hou, 2021; Lyddon, 2018; Niño, 2009), or acceptable in some situations but not in others (Jolley & Maimone, 2015; Merschel &

Munné, 2022; Stapleton & Leung Ka Kin, 2019). Kelly and Hou (2021), for example, found that teachers considered MT valuable only for newly arrived English learners, while other researchers have reported that many foreign language teachers see greater potential for application with learners at more advanced levels (Clifford et al., 2013). Students' expressions about the need for MT at the beginning of their university studies compared to their perception that they should need it less later on, mirror the duality among educators expressed in the literature, not to mention the messages the students received about MT from teachers prior to starting their university studies. Considering the array of conflicting opinions on the matter, the students may be influenced by the contrasting views about MT that permeate academic settings.

An understanding of the students' conflicting stance toward MT use can offer valuable insights into how to work with students taking EMI classes. Rather than banning MT, teachers can recognize students' strategic MT use as a translanguaging tool and explore ways to integrate it into their pedagogy. Such recognition legitimizes students' translanguaging practices, facilitating what Pennycook (2019) calls the "translingual advantage" (p. 170) of students from multilingual backgrounds. Pennycook (2019) further emphasizes that "as educators we need ways to appreciate and facilitate what learners may be bringing to the table" (p. 170). Indeed, a translanguaging stance toward MT affirms the breadth of students' linguistic strengths, including the multiple strategies and tools they use to communicate and make meaning. By integrating MT into their pedagogy, teachers can work in tandem with students to establish clear guidelines that help build content knowledge, develop academic language skills, and mitigate guilt and confusion around MT use.

Moreover, adopting a translanguaging stance toward MT can support content teachers' efforts to help students in EMI programs learn novel discipline-specific language in context. As García et al. (2017) state, a translanguaging approach to pedagogy can provide instructors with tools to "leverage students' bilingualism for learning… [and] help level the playing field for bilingual students at school" (p. 8). Integrating MT into the classroom as a translanguaging tool may also help "demystify… [the learning of] academic language" (García et al., 2017, p. 11), demonstrating to students that they can access their full linguistic repertoires while learning specialized and scholarly vocabulary.

Furthermore, fomenting a translanguaging environment in which students are encouraged to draw from all available resources, including MT apps, can help to minimize anxiety and foster students' confidence and motivation for enhanced learning (García et al., 2017; Klekovkina & Denié-Higney, 2022).

Shifting Perspectives Through Integration of MT into Pedagogy. Another salient finding about the students' stance on MT shows that class discussions, combined with development and application of agreed-upon guidelines for MT use may have influenced students' views on the ethics of using MT for certain tasks. The potential impact of intentionally integrating MT into pedagogy is indicated by a shift in students' perspectives about the ethical considerations of using MT for academic tasks. In their post-study survey responses, students considered it more ethical to use MT for the six academic tasks measured in the survey after they had participated in open discussions about MT, developed and applied MT guidelines, and submitted reflections on their experiences. Notably, this shift in students' perspectives echoes Knowles' (2022)

findings from a study on Spanish learners in a U.S. university in which she introduced a teacher-developed guide for MT use on class assignments combined with open discussions about MT. Comparing results from pre- and post-intervention surveys, Knowles (2022) noted a 33% increase, from 50% to 83%, in students reporting using Google Translate was not cheating.

The students' shifting perspectives about the relative ethics of using MT for different tasks highlights the potential impact of open discussion about MT in the classroom and integration of MT into pedagogy. As the students reported in the in-depth interviews, prior messages from their teachers about MT played a role in shaping their views about the pitfalls of using it for academic purposes. Given the influence of teachers past, it is reasonable to conclude that a shift in tone about how teachers approach the topic of MT use may have a similar impact in guiding them to see it in a different light. In the present study, the instructor's views about MT may have swayed the students' perspectives between pre- and post-study surveys. Findings from a study by Kim and LaBianca (2017) may provide some explanation for this conclusion. In a comparison of the perspectives of students and teachers, they found that students considered using MT for academic purposes less ethical than teachers did. It is possible that the students in the present study initially had more conservative views on the ethics of MT use than their instructor, and engaging in open dialogue in class may have exposed them to a more nuanced perspective, influencing their post-study survey responses.

Furthermore, the relatively larger shifts in students' responses regarding the ethical nature of MT use for completing homework assignments (pre-study $M = 3.8$, $SD = 1.7$; post-study $M = 4.5$, $SD = 1.3$) and writing an essay or a research paper (pre-study *M*

= 3.9, *SD* = 1.6; post-study *M* = 4.5, *SD* = 1.3), observed through increases in post-study means and decreases in post-study standard deviations, may be attributed to the focus on these types of assignments during the in-class elements of the study. Through both in-class discussions and receiving feedback on their writing for which the guidelines were implemented, the students gained greater insight into what it means to use MT ethically and how to avoid plagiarism when using MT to aid their own writing. This implies that deliberate integration of MT into pedagogy, including involving students in establishing guidelines for MT use, may contribute to students' understanding of academic honesty relative to MT use. Moreover, clear and open discussion, combined with encouraging students to use MT according to guidelines they have helped to establish, may also help reconcile their conflicting views about MT use in academic settings.

Of course, it is essential to underscore that, due to the nature of descriptive statistics, the observations of shifts in students' perspectives regarding the ethical use of MT are limited to surface-level trends and cannot definitively establish causality or the magnitude of impact. However, these findings raise compelling questions about the potential influences of integrating MT into pedagogy, demonstrating intriguing patterns that warrant deeper investigation.

Design: Practical and Critical Application

Predominant themes from the findings characterizing the students' *design,* or how they use MT, consist of frequent usage combined with practical and critical application. Survey results showed that 86% of respondents reported using MT at least once a week, and 52% indicated they use it to translate both from English to Chinese and Chinese to English, supporting comments from interviews that students use it both for reading and

writing with relatively similar frequency. Moreover, students' MT use for both reading and writing demonstrate practical application and complex critical thinking.

Initially, students turn to MT out of practical necessity, as a sort of survival instinct in a new environment in which they are expected to use higher levels of English than most of them are capable of without assistance. This early use tends to start out through experimentation, which may include testing the boundaries of what is acceptable for their EMI coursework and learning to critically assess MT tools through the process. Students' accounts include experimenting with MT for listening, reading, and writing. Students spoke of trying out MT apps for simultaneous translation to listen to class lectures before realizing it distracted them from what was happening in class more than it helped them understand, or until noticing the translations were slow and not very accurate, and then abandoning the effort. Others spoke of using MT to translate full academic articles only to discover they could not make sense of the machine-translated text, even in their L1. In response, they tried translating the articles in smaller chunks, comparing the original English to the MT-produced Chinese to comprehend the complex content. Some students also discovered they could use MT to help them understand the meaning of English words in context, which involved moving from translating single words to translating full sentences for precise understanding of the text. Other experimentation included submitting fully machine-translated assignments and then feeling guilty, getting a low grade, or witnessing someone else getting singled out in class for using it, and so learning not to abuse it. Eventually, the students' experimentation leads them to critical evaluation of one kind or another. They come to a point when they must assess whether MT tools are helping them or harming them, whether the output is

accurate, or whether they are relying on them too much. This journey through experimentation to more critical use exemplifies how the students use MT in their academic setting.

A similar progression, from using MT for survival to more critical use, is reflected in the literature. Many studies have found that students' initial MT use is born from necessity, to facilitate access to course materials and curricula, as well as to enhance communication with their teachers (Kelly & Hou, 2021; Sukkhwan, 2014; Valijärvi & Tarsoly, 2019). This pragmatic MT use continues as students use it to get the general idea of lengthy and complex texts to help them understand academic English as well as novel and specialized course content (Kelly & Hou, 2021; Valijärvi & Tarsoly, 2019), though such use for MT has been criticized by Hofstadter (2018) as ineffective due to a loss of nuanced meaning.

In addition to using MT for practical purposes, other studies found that students also engage with MT apps critically to support their L2 writing (Alm & Watanabe, 2021; Xu, 2022). In numerous examples within the literature, students expressed doubt about the accuracy of MT-generated texts, reporting modifying the MT output to achieve the intended results, rather than simply copying and pasting the translations without critical review (Alm & Watanabe, 2021; Clifford et al., 2013; Kelly & Hou, 2021; Lee, 2020; Sukkhwan, 2014; Ryu et al., 2022; Xu, 2022). Similarly, Chen (2020) found that students did not trust MT output when translating single words with multiple meanings, so they reviewed machine translated texts with more scrutiny, and Xu (2022) reported that students used MT as a thesaurus to make their L2 writing sound more professional (Xu, 2022). Likewise, the students in the present study expressed engaging in critical thinking

when using MT apps, not only for survival in their new academic environment but as a tool to enhance their English for more formal and academic expression.

While many studies acknowledge critical MT use among students, some suggest guidance and instruction is necessary for students to use MT more effectively (Urlaub & Dessein, 2022; Valijärvi & Tarsoly, 2019). For example, Urlaub and Dessein (2022) suggest students might not realize the power of MT to provide contextualized translations on a sentence level compared to decontextualized single-word translation. They recommend direct instruction on MT strategies to help students maximize benefits from its use. In fact, several studies report enhanced MT use after direct instruction, such as a shift from single word translation to sentence level translation (Chen, 2020; Lee, 2020). However, findings from the present study offer a slightly more nuanced perspective. The students in the study appear to have come to more critical MT use on their own, without direct instruction to guide them. Of course, MT was integrated into the classroom as part of this study, but such integration did not include direct instruction on strategies for MT use. In fact, the instructor did not presume to be an MT expert. Rather, the students' perspectives and experiences were considered as valuable contributions to class discussions and the development of the guidelines. Of course, in-class discussions about MT use may also have influenced students' perspectives and applications of MT, but their accounts referred to critical usage well before the beginning of the study. This is not to say that direct instruction on effective strategies for MT usage is not valuable. Rather, it suggests that students engage in natural experimentation and exploration of MT tools that can lead them to more critical use on their own. It may be that educators need not compile lists of MT strategies to share with their students to help them learn more

effective ways to use MT tools. An alternative approach that calls for open in-class discussion about MT and incorporates students' perspectives into the development of class guidelines for MT use may offer similarly beneficial results.

Moreover, engaging in natural experimentation that fosters more critical use of MT may typify the experiences of Chinese students in EMI programs more broadly, potentially fostering a unique resilience among this population. This aspect of their educational journey may nurture long-term critical thinking skills, potentially aiding their future transitions as they go abroad to finish their undergraduate studies or to pursue post-graduate degrees and careers. A similar idea has been proposed by Dai and García (2019) who claim that Chinese students who transfer abroad after finishing their first two years in EMI programs in China develop a resilience they would not have otherwise obtained due to the experience of adapting to an entirely new education system out of sheer necessity. While they point to the experience of transferring abroad as the catalyst to such resilience, the same could be said for the experience of learning how to thrive in EMI courses while still in their home country. Dai and Garcia (2019) observed that the experience of beginning a learning experience with a high degree of stress and the need to "continually negotiate with the new system" (Dai and Garcia, 2019, p. 371) can lead students to develop skills to help them thrive under challenging circumstances. Similarly, the stress experienced by Chinese students who begin their higher education in an EMI program in China parallels that of those who transfer to a new institution abroad. Through a process of negotiation, which could also be framed as experimentation, these students determine how best to cope with the demands of their new environment, developing invaluable skills in the process.

Furthermore, the students in the present study seem to have an intuitive understanding, commonly held by teachers with a translanguaging stance, of the "interrelationship of language features that form [their own]… linguistic repertoire" (García at al., 2017, p. 42). The students discern that they can use the strengths of their L1 to understand and convey complex ideas even as they are still developing their English skills. Turning to MT for practical reasons shows the students' instinct to use the linguistic resources of their L1 to survive in their new academic setting, while continued experimentation that leads to using MT critically shows their awareness that they need both to learn the content of their courses and develop their English skills to meet their long-term goals. Engaging in these distinctive cognitive processes builds resilience and critical thinking skills that can benefit them beyond their current academic setting.

Recognition of the students' natural progression to developing more critical use of MT can reframe educators' views on how to integrate MT into their pedagogy. Rather than assuming they must be MT experts who teach proper use of MT, teachers can validate the students' experimentation and experiences with MT, encouraging exploration, and engaging in open discussion that provides opportunities for sharing with their peers what has worked for them. In this way, teachers take on more of a facilitator role, co-creating what acceptable use looks like based on the needs of the students and the goals of the course. Such a stance may empower the students to develop a more conscious and critical approach to responsible MT use and increase their confidence in their instinctual translanguaging practices.

Shift: Innovative and Dynamic Adaptation

An additional theme from the findings exemplifies the students' *shift,* or how they modify or adapt their MT use, portrayed through innovative dynamic adaptation depending on their evolving needs and the development of MT technology. Of course, there is substantial overlap between *design* and *shift,* represented through the students' experimentation leading to critical use of MT, as previously discussed. However, further innovation is demonstrated in the students' cyclical exploration of MT, as they experiment with available features of different apps and learn about new ones and determine how to use them in both practical and creative ways. Students reported several innovative adaptations in how they use MT, including using it for more critical and close reading of complicated texts, pre-editing their Chinese writing to improve the English syntax of MT output, post-editing MT output with a critical eye, evaluating the way in which words are used in context through examples provided by the apps, and cross-referencing machine-translated output across MT apps and other electronic resources. Such adaptations reinforce that the students are not merely using these apps indiscriminately, rather they are engaging in critical practices that contribute to the application of innovative and strategic MT use.

Some previous studies suggest that students may not come to such innovative and strategic usage of MT on their own accord, recommending teacher-led workshops and direct instruction targeting specific guidelines and strategies for MT use (Bowker 2020a, 2020b; Lee, 2020; Mirzaeian, 2021; O'Neill, 2019). For example, Bowker (2020a, 2020b) implemented MT literacy workshops encompassing six elements, two of which resemble the strategies students in this study implemented on their own, including an

awareness that different MT tools exist and can offer different features and strengths, and pre-editing input to change the output. Other elements of the workshops included warnings about online privacy, academic integrity, and the "potential for algorithmic bias" in MT output (Bowker, 2020b, p. 35; see also Hofstadter, 2018), such as tendencies to associate some words with male pronouns and others with female pronouns due to the corpora on which the apps were trained. Another element touched on in Bowker's (2020a, 2020b) workshops was encouraging students to think critically about whether using MT for the task at hand would be the best option, given that it may not be able to translate as accurately for some disciplines compared to others and that it will likely need to go through a post-editing process before it is usable.

There is certainly value in direct instruction on specific elements of MT, such as academic integrity, ethical use, and critical thinking. However, as expressed in the previous section, incorporating students' own perspectives and strategies into open in-class discussion on the topic may prove to be equally, if not more, effective. This may especially be true when working with students taking EMI courses in non-English speaking countries, as such students may have more experience using MT than their instructors. Students' extensive experience and knowledge of MT apps is evident in the findings of the present study. Through experimentation and frequent engagement, the students have developed both a nuanced perspective of the potential drawbacks of MT and their own innovative strategies for MT use.

Similar innovative and strategic use of MT among students is reflected in the literature. Some, for example, have reported students discovering that simplifying, or pre-editing, their L1 input resulted in more accurate MT output (Lee, 2020). Others have

found that students use MT for checking the accuracy of their own writing and helping with revisions (Clifford et al., 2013; Kennedy, 2021; Klekovkina & Denié-Higney, 2022; Lee, 2020; Mirzaeian, 2021; Xu, 2022), often despite recognizing the limitations of MT in providing grammatical feedback (Lee, 2020; Valijärvi & Tarsoly, 2019). Some have also reported students, especially at higher L2 proficiency levels, engaging in meticulous post-editing of MT output to select language that more accurately portrays their intended meaning or that they deem sounds more like their own voice (Ahn & Chung, 2020; Xu, 2022). Other research shows that students cross-reference MT output by consulting with teachers and peers and checking additional external reference materials (Alm & Watanabe, 2021; Chen, 2020; Ryu et al., 2022). Many have also observed that students find MT most beneficial during the process of writing initial drafts of English texts (Alm & Watanabe, 2021; Ahn & Chung, 2020; Chen, 2020), utilizing it for tasks such as comparing MT translations to their own writing (Chen, 2020; Kennedy, 2021; Sukkhwan, 2014, Xu, 2022) and looking up phrases to check for accuracy (Ryu et al., 2022), indicating a trend toward leveraging MT as a tool both to enhance their writing and to aid rather than replace language learning. All these findings are corroborated in the present study, as the students have reported considerable integration of MT into their own writing processes in ways that demonstrate innovative and strategic use that engages their critical thinking.

These parallel findings reveal that students' use of MT is more complex and critical than what is reported in the literature about teachers' suspicions about students' MT use. Studies report, for example, that teachers insist using MT will hinder the development of the students L2 (Clifford et al., 2013; Klekovkina & Denié-Higney,

2022; Knowles, 2022; Merschel & Munné, 2022), because it fosters dependence on the technology and bypasses the hours of hard work and critical thinking necessary for true language acquisition (Alm & Watanabe, 2021; Cribb, 2000; Faber & Turrero-Garcia, 2020; Klekovkina & Denié-Higney, 2022; Stapleton & Leung Ka Kin, 2019). Others further express skepticism about the effectiveness of MT as a language learning tool in general (Merschel & Munné, 2022; Lee & Briggs, 2021; Xu, 2022). As a case in point, Merschel and Munné (2022) found that 77% of teachers considered MT "not useful" for L2 development and 84% considered it "useful" only for teachers to show students the limits of this technology. However, the findings from this study, echoing those from several others, support a virtually opposite stance among students, contradicting the skepticism of many educators that MT stifles critical thought and hinders language learning. In fact, these findings suggest that MT can stimulate students to think more critically and engage with language in more innovative and creative ways that not only were unavailable but were unfathomable to prior generations to which many of their teachers belong. As Pennycook (2019) states, "we need to be wary of that trap that links learning only to forms of language and literacy with which we may be familiar" (p. 170).

Students' innovative applications of MT apps further support the notion that they are using them as translanguaging tools that facilitate their ability to move between their L1 and L2 in accessible, convenient, and powerful ways. García et al. (2017) explain, "Knowledge is… developed intrapersonally, as students try out new concepts and new languaging in internal dialogue and private speech" (p. 8). When multilingual students engage with MT in critical and innovative ways, they access this internal dialogue with the full strength of their internal linguistic resources. They use MT as a source of instant

feedback with which the intrapersonal learning process can carry on in a cyclical and dynamic manner. Moreover, Godwin-Jones (2022) posits that integrating MT into the learning process provides students with opportunities to develop metalinguistic awareness by comparing the similarities and differences between their L1 and L2. In essence, the students' strategic use of MT to complete assignments as well as to learn content and develop language skills demonstrates "the development of critical and resourceful language users who have good access to a range of linguistic resources," which Pennycook (2019) describes as a "central goal of language education" (p. 171).

Of course, while they are certainly powerful tools, MT apps in and of themselves do not guarantee that students will engage with them critically and creatively. Nor do they promise to develop intrapersonal knowledge, enhance critical thinking, or expand language proficiency. For MT to benefit them, students must use the apps strategically, to apply them in ways that go beyond the purposes for which they were originally developed. Indeed, rather than merely accepting these apps at face value, the students' descriptions of how they engage with MT in the present study do show strategic use, as they integrate them into their learning processes, critically assess their value, and continuously explore additional ways MT can extend their ability to access and produce academic English texts.

Moreover, as Davis (2006) states, "a great deal of the success and failure of any technology rests in sound teaching practices," supporting the conclusion that purposeful integration of MT into pedagogy can further guide students' strategic and critical use of these tools. By acknowledging and encouraging students' dynamic and innovative use of MT rather than prohibiting it—which would likely only drive students to use it more

clandestinely—educators can foster a classroom environment in which students have ready access to tools that can leverage the strengths of their L1 in the learning process. As advocated by Yip and García (2015), "Bilingual students can only acquire new linguistic features in interrelationship with the ones that they can already access. It is when students can reflect on all their language practices that language development takes place" (Translanguaging in instruction section). In essence, adopting a translanguaging stance toward the use of MT and recognizing it as a tool for translanguaging can enable students to leverage their full linguistic repertoires, thereby enhancing their existing language skills. Furthermore, integrating MT as part of a translanguaging approach can provide educators with opportunities to deliver more complex material, because students will have the tools to make the material comprehensible, which can also enhance student learning (see García et al., 2017).

This phenomenological study contributes a deeper understanding of the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China. As discussed above, the findings have the potential to provide program administrators and teachers insights into how students in similar programs may experience using MT in an academic setting and may contribute to shaping guidelines or policies on MT use and informing pedagogical practices that integrate MT into the classroom as a translanguaging tool to support content learning and language development.

Limitations

This study was, by design, limited to the experiences of Chinese undergraduate students in the same cohort in one Chinese-foreign, English medium instruction, joint

degree program in southern China. Survey administration was limited to a relatively small target population of around 75 students, and in-depth interviews were conducted with a small sample of five students. Any findings from this study, therefore, cannot be generalized to all students in similar programs in other Chinese universities or in other parts of the world, though they may provide a starting point for additional research with similar populations.

Additionally, while all participants did have a shared experience of the phenomenon of using MT, the final report cannot claim that it completely describes the experiences of each individual student in the program, rather it aims to provide the essence of how students typically experience the phenomenon in general. Therefore, differences in MT use based on factors such as relative or demonstrated English proficiency, academic performance, socioeconomic status, or regional Chinese dialect were not taken into consideration in describing the essence of the students' overall experience of the phenomenon.

Moreover, the researcher, as an administrator at the research site and a native English speaker, occupied a dual position that augmented the power dynamics between himself and the participants. All participants were aware of the researcher's prominent role within the program, and some had interacted with him before the study. This familiarity, along with his prominent position and native English-speaking background, may have influenced their willingness to participate in the study and their responses to interview questions. Moreover, this effect may have been amplified by the fact that all interviews were conducted in English, rather than in the native Chinese languages of the students.

Furthermore, the complex layer of power dynamics between researcher and participants may have been further complicated by cultural factors. In Chinese culture, educators are viewed as highly respected authority figures. Consequently, the students' knowledge of the researcher's educational leadership role may have necessitated a higher level of deference, which also may have influenced students' interview responses. They might have aimed to reflect what they presumed were the desired answers or to adhere more strictly to perceived academic English standards, thinking such responses would be more valued. Additionally, the sense of cultural deference could have prompted students to filter their responses not just to align with what they believed the researcher wanted to hear but also to show respect in a manner deeply ingrained in their cultural understanding of the student-educator dynamic.

Recommendations

Based on the findings of this study, the researcher offers the following recommendations.

Dynamic Integration of MT into Pedagogy

Drawing from the students' dynamic approach to using MT, as revealed in the present study—which progresses from initial experimentation to critical and innovative application—it is suggested that educators in EMI programs adopt a similar strategy for incorporating MT into their teaching methods. From the stance of seeing MT as a valuable tool for translanguaging, educators can explore and experiment with its integration into their pedagogy (see Karnal & Pereira, 2015; Kennedy, 2021; Urlaub & Dessein, 2022). This process can allow them to discover, alongside their students, new and creative ways to use MT, while also promoting mindful use that promotes critical

thinking and language development (see Knowles, 2022). In this way, the students' dynamic and cyclical approach to using MT serves as a model for educators to follow, facilitating a foray into engagement with evolving MT technology in the classroom.

Like the instructors' approach in the present study, the researcher recommends educators begin their experimentation of integrating MT into their pedagogy by engaging in open discussion and developing dynamic guidelines for MT use for their specific class for a specific point in time, involving students in the process. The following recommendations, based on lessons learned from this study, can help to guide such experimentation.

First, student involvement is key. Students' active participation in creating class guidelines for MT use is key to the process to ensure their cooperation and buy-in. The instructor laying down rules for MT use or including a fixed statement in the syllabus would defeat the purpose, which is to experiment and explore along with the students rather than to govern or restrict their use of MT from the perspective of the teacher. This may involve facilitation of initial discussions to foster awareness among students of their own stance towards MT, and subsequent discussions in anticipation of possible shifting student perspectives. It may also involve teachers adjusting or changing their perspectives as they learn from the students.

Second, the evolving and dynamic nature of MT guidelines must be clearly conveyed to students. Any guidelines for MT use developed through this process should not be considered static. There are several reasons for this. For one, allowing for flexibility in the guidelines honors the spirit of experimentation, providing opportunities to revisit and further discuss them throughout the term and make corresponding

modifications in tandem with the students. Also, because MT technology is continuously evolving, guidelines developed by students in one semester might not be relevant in the next. Regularly revisiting the guidelines within the term and establishing new ones at the beginning of each semester addresses the ever-changing nature of MT applications, which has been identified by many researchers as a major challenge in incorporating MT into pedagogy (Enkin & Mejías-Bikandi, 2016; Faber & Turrero-Garcia, 2020). Finally, similar to what was mentioned above, regular reassessment of the guidelines can help to ensure they are aligned with the current attitudes and understandings of the students.

Third, clarity is paramount. While the guidelines must be considered malleable, it is also important they be clear. This includes clarity in how students will apply them and how they will be assessed by the instructor (see Knowles, 2022). In the present study, ambiguity about how the students would be assessed, raised concerns among the students which manifested as distrust in both the instructor and their peers. They expressed distrust about whether their instructor would assess them fairly and about whether their peers would apply the guidelines honestly, even when the associated practice assignment was ungraded. The need for clarity also highlights the importance of flexibility. If concerns arise about fairness and honesty, the instructor can openly discuss them with the students as part of their ongoing collaborative exploration of integrating MT into the class. Of course, clarity from the start can also help to mitigate confusion and potential distrust among students.

Fourth, the instructor must ensure discussion and guidelines align with standards of academic honesty. While the students can be considered experts when it comes to using MT, the teacher remains the expert on what is considered acceptable MT use given

the purposes and goals of the course. The present study found that students show a general understanding that MT use is more acceptable for some tasks compared to others, but they still look to their instructors for guidance to confirm their perspectives about the ethical considerations of using MT (see Pellet & Myers, 2022). In fact, this study found a shift in the students' perspectives from pre- to post-study survey about the ethics of using MT for certain academic tasks. The instructor's position on MT use and academic honesty may have influenced the students' shift in perspective, demonstrating the value of engaging in open discussion about MT and integrating reasonable MT use into pedagogy in ways that mitigate students' conflicting perspectives on the matter.

Finally, there is potential for wider application of this approach. These recommendations provide a general framework that educators could apply to integrate other technologies into pedagogy as well. This framework could serve as a template, for example, for how guidelines for using generative AI could be developed in tandem with students and revised regularly as AI technology continues to advance.

Exploring Students' Stance and Presenting It Back to Them

Another recommendation for integrating MT into pedagogy is for instructors to administer a survey at the beginning of each term to discover their students' stance regarding MT use, and then present the findings back to them. Teachers could pair this recommendation with the framework presented above or implement it on its own. Showing students their own stance on MT use can both act as a catalyst for in-class discussion and inform the development of guidelines for MT use within the class. Regular surveys on students' perspectives of MT can also help educators gauge the shifts in students' attitudes and applications of MT tools compared to previous cohorts,

revealing which MT apps students are currently using and new strategies they may be implementing. Even if teachers do not present the results of such surveys back to their students, the information gleaned can help them keep up with students' shifting attitudes, behaviors, and needs.

Recommendations for Future Research

Future research could include expanding on the current study with a larger sample size using grounded theory methodology. Interviews with many more students about their experiences of using MT within their academic context could provide a more detailed and refined picture of how students engage with this technology. Moreover, increasing the number of interviewees could contribute to the development of a working theory of students' MT usage grounded in patterns and themes identified through the iterative process involved in grounded theory methodology. Moreover, this research could be expanded to include students in similar EMI programs, both in mainland China as well as in other countries, to provide a broader perspective of trends in MT use across different student populations taking EMI courses. It could also be extended over a longer period of time with a focus on shifts in students' perspectives and uses of MT. Such research could deepen the understanding of how students in EMI programs use MT and inform educators' decisions regarding strategic integration into pedagogy. Also, additional studies could explore the perspectives among teachers in EMI programs on students' MT use.

Additionally, the quantitative elements of the pre- and post-study surveys from this research could provide a foundation for designing a quasi-experimental study comparing students' potentially shifting perspectives. A carefully designed study in

which pre- and post-study surveys are paired for more robust statistical analysis may provide further insight into the impacts of involving students in open discussion and development of guidelines for MT use within EMI courses. Another modification of the quantitative element of this study could further expand survey administration to include students enrolled in similar EMI programs across China and further afield, providing data for a comparison of student responses based on geographical or national boundaries and cultural or linguistic background.

Other future research could explore how various factors, such as cohort, self-reported or demonstrated English proficiency, academic performance, socioeconomic status, or regional Chinese dialect, might impact or correlate with students' views and uses of MT. Such research could enable educators to pinpoint students who might benefit from more personalized teaching strategies. Additionally, it could offer insights for crafting alternative methods of incorporating MT into teaching or tailoring interactions to meet diverse student needs more effectively.

Furthermore, the present exploration into students' usage of MT raises questions about the students' deeper cultural perspectives regarding languages and the language ideologies in which they are embedded. Future research could delve into what language means to them within the students' cultural and sociopolitical contexts. Such research could include investigating the students' motivations for learning English as seen from the dual contexts of national and global language ideologies. Future studies could aim to understand how these language ideologies—both in relation to students' native languages and English—impact their perspectives and uses of MT. By exploring these areas, future research can contribute to a more nuanced understanding of the complexities surrounding

students' usage of MT, revealing the interplay between language practices, cultural identities, power and privilege, and educational technologies.

As a final note, in this study on machine translation, three of the five interviewees mentioned generative AI (ChatGPT), each in a single interview, and only briefly. None talked about it as a tool for machine translation. Also, in the pre-study survey, one of 60 respondents listed ChatGPT 4.0 in response to a question asking them to list the names of MT apps they typically use. Notably, at the time of the interviews, ChatGPT had not been officially released to users in mainland China. However, through conversations with students and colleagues, the researcher is aware that students in the program do use ChatGPT and other generative AI tools for purposes other than translation. Despite the overall virtual absence of ChatGPT as a translation tool in the present study, it is clear to the researcher that it provides a powerful alternative to tools explicitly designed for machine translation. While it is possible the students in the study may opt to replace their preferred MT apps with generative AI, at the time of this study it did not stand out as part of the students' experience with machine translation. Future research on MT could incorporate or single out generative AI to explore whether and to what degree students have begun to experiment with it as an alternative or replacement for other MT apps. Similarly, additional research could use the present study as a model to explore the experiences of using generative AI more broadly among students in EMI programs.

APPENDIX A REFLEXIVE POSITIONALITY OF THE RESEARCHER

Phenomenology stipulates researchers "make explicit" (van Manen, 1997/2016, p. 47) their own experiences and associated preconceptions and biases, through a process of "bracketing" (Anderson & Spencer, 2002; Bhattacherjee, 2012; Creswell & Poth, 2018; Daly, 2007), or consciously acknowledging what they have personally experienced, by actively reflecting on their biases and assumptions and maintaining them within their awareness throughout the research process. Phenomenological researchers' intentional efforts to maintain awareness of their presuppositions makes way for the emergence of themes from the participants' words and experiences, fostering a more authentic picture of how participants experience the phenomenon (Anderson & Spencer, 2002; Bhattacherjee, 2012; Creswell & Poth, 2018; Daly, 2007; van Manen, 1997/2016). Accordingly, the following first-person reflexive positionality narrative includes the researcher's own experiences with machine translation, the context and the circumstances that have shaped his experiences, and his preconceived ideas of how the students may have been experiencing it prior to the study. This description serves the dual purpose of helping the researcher to keep his beliefs and assumptions "at bay" (van Manen, 1997/2016, p. 47) by keeping them in the forefront of his consciousness throughout the study, while simultaneously offering readers the opportunity to judge for themselves the degree to which the researcher's biases are present in his interpretation of the meaning of the participants' experiences (Creswell & Poth, 2018).

I first encountered machine translation (MT) in the fall of 2000 during my undergraduate studies. That semester, as a 22-year-old junior, I chose to study abroad in Cordoba, Argentina. This was a return to South America for me, following two years

spent in Venezuela between my freshman and sophomore years, where I volunteered in various cities and municipalities. During that time, I had become proficient in Spanish, largely through self-directed study and daily interactions with locals. However, I soon realized that my time in Argentina would be different, not only because it presented distinct linguistic and cultural differences compared to Venezuela but also because I would need to learn more advanced academic Spanish for my university courses. Despite feeling quite confident in my Spanish language skills prior to going to Argentina, I was quickly humbled by the linguistic rigor necessary for me to succeed, especially in the face of writing several essays, working with native Spanish-speaking classmates on course projects, and preparing and delivering presentations, all in Spanish. While I do not recall how I was introduced to it, I do remember using a machine translation website called BabelFish to help me when I encountered unfamiliar words while reading course texts, or when writing essays which demanded the use of vocabulary that I had not yet acquired in Spanish. Mostly, I used BabelFish like a dictionary, though I also had an English-Spanish/Spanish-English paper dictionary which I referenced frequently.

Different from a traditional bilingual dictionary, however, using BabelFish offered two novel features: 1) a greater degree of convenience and speed for looking up words and 2) the capacity to translate full sentences. I remember experimenting with the sentence translation feature, mostly as a tool for checking whether my grammar was accurate. I found BabelFish to be a helpful reference for my academic writing.

However, I noticed right away that the machine-generated translation from BabelFish was not always accurate, so I had to review any MT output through liberal post-editing to be sure the words I was using conveyed my intended meaning. I recall a

specific instance when I received critical feedback from my host sister who proofread one of my papers. She pointed out that I had used an archaic form of a word, and she expressed surprise that I would use such a word, asking where I had heard it. The situation provided an interesting learning experience for me as a Spanish learner trying out new MT technology, and I was more careful about my approach to using BabelFish after that.

As I reflect on my own introduction to MT, I think it is important to note that I did not use MT for any purposes other than those stated above. Of course, in 2000, smartphones, tablets, and Wi-Fi did not yet exist, so it would have been virtually impossible to reference the BabelFish website during classes, group meetings, or in social settings. Therefore, to understand my professors, classmates, and friends, I had to rely on my own grasp of the language, which I recall was an exhausting, yet fruitful, endeavor.

After my semester abroad in Argentina, it wasn't until 2012 that I used MT again. This time, I was in China for two months, studying how Chinese high school students prepared academically and linguistically for undergraduate studies abroad. During this period, I used the Google Translate smartphone application to enhance my limited Chinese. Having taken only an entry-level university course in Mandarin, I was still very much a beginner at the time. The Google Translate app was invaluable as it worked without Wi-Fi or cellular data and helped me string together simple Chinese survival phrases. This experience marked my first use of smartphone technology to aid communication in a foreign language, and I consider it a meaningful moment in my experience with MT, highlighting the convenience, utility, and reassurance that such technologies can offer when navigating new linguistic landscapes.

As I have slowly improved my Mandarin Chinese since relocating to China in 2015, I have continued to use Google Translate (though it was discontinued in mainland China in 2022 and is now accessible only through a VPN). I have also used Apple's Translation app, the translation function in the ubiquitous Chinese social media app called WeChat, and I have experimented with the Chinese developed Baidu Translator. My current uses of MT primarily revolve around translating Chinese websites (often through Apple Translation), deciphering messages from Chinese colleagues (usually via WeChat, though sometimes Google Translate when WeChat's translation output is unclear or confusing), and understanding official announcements and policies from the Chinese institution where the American undergraduate program for which I work is hosted (in my experience, Google translate is still the best for this, though ChatGPT has recently proven more accurate). I also use WeChat translation to read menus, posters, and product labels, especially since my knowledge of Chinese characters is not as advanced as my Mandarin speaking ability. For conversations with locals, I tend to use Pleco, an electronic dictionary app, which offers translations at the word or character level and has been more suitable for my needs as I continue to develop my Mandarin language skills. Moreover, some of the Chinese individuals with whom I interact daily use MT to varying degrees to communicate with me, depending on their proficiency in English. It is quite common for our exchanges to involve both parties using MT to facilitate clearer and more effective communication in both professional and casual situations.

In short, MT has become an indispensable tool in my multilingual world. It helps to bridge the communication gap with my Chinese colleagues who have limited English skills and is equally invaluable in daily practical and social interactions with local

residents and friends, enhancing both professional and personal exchanges. I can clearly see the practical benefits of using MT, especially for individuals, like myself, who live and work in multilingual settings.

My own experiences with MT have undoubtedly shaped my perspective of its impact on students' usage, particularly in academic settings. When I first encountered MT during my study abroad in 2000, it was a nascent technology. By 2015, its advancements were evident, yet it was still easy to spot essays in which students had relied heavily on MT to translate their work from Chinese to English. Some of the telltale signs of MT use included direct literal translations, sentences structured in Chinese syntax making them confusing to an English speaker, and the use of obscure words or vocabulary unlikely to be part of my students' English repertoire. The most glaring examples were essays in which entire paragraphs, if not the full text, were translated from Chinese without any attempt to adapt or edit the MT output, resulting in awkward and syntactically strange English.

When I suspected students had used MT for an assignment, I began the practice of asking them directly if they had done so. Often, they would confess that they had, and I would allow them to rewrite and resubmit, cautioning them against over-reliance on MT. I advised them to do their best to express themselves using English syntax and vocabulary they were familiar with and to take risks with new forms and words as they practiced developing their writing skills.

I also began to share examples of wildly inaccurate or unintelligible machine-translated English writing with my students to warn them against using MT. While I recognized the practical value of MT from personal experience, I was concerned that

students might rely on it too much, hindering their English learning. This concern stemmed from the idea that the convenience of MT could potentially undermine the essential process of learning and practicing English, especially in the context of my classes in which the primary goal was to develop students' English writing skills.

Over several years, I repeatedly encountered variations of the scenarios I have described above involving my students and their use of MT. Over that same time period, I also engaged in numerous discussions with fellow faculty members who shared similar concerns, which centered on the suspicion of machine-translated student writing and instances where students resorted to MT apps during conversations with their foreign instructors in English. Our conversations often revolved around strategies to discourage MT use, emphasizing the importance of students using their own cognitive skills to develop university-level academic English skills, rather than relying on technology.

Furthermore, in 2018, prompted by growing concerns about students' seemingly stagnating English proficiency—which some identified as being partially attributed to over-reliance on MT—a formal meeting with a diverse group of faculty and staff was convened to address this issue. The prevailing sentiment was one of increasing alarm that our students might not be achieving the English proficiency necessary for an American bachelor's degree, with MT usage being identified as a contributing factor.

Following the return to in-person classes in the fall of 2020, amidst the COVID-19 pandemic, I observed a notable shift in how students engaged with MT. They openly used their smartphone cameras to translate class materials, such as PowerPoint slides and handouts, appearing to bypass any effort to read them in English. This evolution in MT technology, and students' more overt usage of it, marked a pivotal moment which

prompted me to question whether students had indeed become excessively dependent on MT, potentially at the expense of their English language development. It was at this time that I also began to consider an investigation into the students' use of MT applications to gain further insight regarding this phenomenon.

APPENDIX B INVITATION TO PARTICIPATE (INSTRUCTOR)

The School of Education
Department of Education Specialties
PhD in Literacy Program

September 13, 2023

Dear [redacted] English Department Faculty Members:

I am writing this letter to invite you to take part in a research study focused on exploring the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program. This study will be conducted by me, Corey Larsen (Principal Investigator), as part of my doctoral dissertation. My faculty mentor is Dr. Olivia Stewart, Assistant Professor of Literacy in the St. John's University Department of Education Specialties Ph.D. in Literacy program. I will need to collaborate with one faculty member and one section of an English or Literary and Cultural Studies course for this study.

If you agree to be in this study, you will be asked to:

1. Collaborate with the principal investigator to develop one to three lessons on strategic and responsible use of machine translation that you will deliver to your class followed by one to three sessions of guided practice of the lessons' content.
2. Allow the principal investigator to sit in on two class sessions prior to the above-mentioned lessons and observe and video-record your class during the above-mentioned lessons and guided practice.
3. Complete a survey on students' use of machine translation before and after the instruction and guided practice.
4. Take part in a series of three or four sixty-minute interviews concerning your experiences of your students using machine translation.

Planning and preparing for the lessons will require an estimated four to five hours of your time. The lessons and guided practice will take place during your regularly scheduled class times. The survey will take approximately fifteen minutes to complete each time. Participation in the interviews will involve approximately three to four hours of your time spread over a period of three or four weeks.

The date and time of the interviews and in-class observations will be determined by your availability and convenience in coordination with the principal investigator. All interviews, instruction, and guided practice sessions will be video-recorded. You may review these recordings and request that all or any portion of the recordings be destroyed.

There are no known risks associated with your participation in this research beyond those of everyday life.

Although you will receive no direct benefits, this research may help the investigator better understand the experience of using machine translation among Chinese undergraduate students in an English medium instruction setting.

Confidentiality of research records will be strictly maintained by removing identifying information from the survey results, field notes, interview recordings, and interview transcripts, all of which will be stored in a secure location. Also, your consent form and identifying demographic information will be stored separately from data to ensure your name and identity will not be revealed without your consent or linked to any information you have provided.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For interviews, questionnaires, or surveys, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your professional relationship with the principal investigator or employment standing in any way.

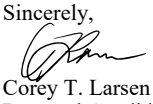
If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Corey Larsen via email at corey.larsen20@my.stjohns.edu or mobile at 13192216952 or the faculty sponsor, Dr. Olivia Stewart, at stewarto@stjohns.edu.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu +1-718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu +1-718-990-1440.

If you are interested in participating in this study, please contact Corey Larsen via email at corey.larsen20@my.stjohns.edu or mobile at +8613192216952 to express your interest, and I will contact you with more information.

Thank you for your consideration in participating in this study.

Sincerely,



Corey T. Larsen
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+86 13192216952

APPENDIX C INVITATION TO PARTICIPATE (STUDENTS GENERAL)

The School of Education
Department of Education Specialties
PhD in Literacy Program

November 23, 2023

Dear Students:

I am writing this letter to invite you to take part in a research study exploring the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program. This study will be conducted by me, Corey Larsen (Principal Investigator), as part of my doctoral dissertation. My faculty mentor is Dr. Olivia Stewart, Assistant Professor of Literacy in the St. John's University Department of Education Specialties Ph.D. in Literacy program. **I plan to interview three to five [redacted] students for this study.**

If you are interested in artici atin in this study, please respond to this email or contact Corey Larsen at corey.larsen@[redacted] or corey.larsen20@my.stjohns.edu or mobile at 13192216952 to express your interest, and I will reply with more information.

Details:
If you agree to be in this study, **you will be asked to take part in a series of three or four interviews (45 to 60 minutes each) over a period of three or four weeks (one interview per week) concerning your experiences using machine translation.**

The date and time of the interviews will be determined by your availability and. All interviews will be audio and video recorded. You may review these recordings and request that all or any portion of the recordings be destroyed.

There are no known risks associated with your participation in this research beyond those of everyday life.

Although you will receive no direct benefits, this research may help the investigator better understand the experience of using machine translation among Chinese undergraduate students in an English medium instruction setting.

Confidentiality of research records will be strictly maintained by removing identifying information from the interview recordings and transcripts, all of which will be stored in a secure location. Also, your consent form and identifying demographic information will be stored separately from data to ensure your name and identity will not be revealed without your consent or linked to any information you have provided.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. You have the right to skip or not answer any questions you prefer not to answer.

Nonparticipation or withdrawal will not affect your grade in any of your classes or your academic standing in any way.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Corey Larsen via email at corey.larsen20@my.stjohns.edu or mobile at 13192216952 or the faculty sponsor, Dr. Olivia Stewart, at stewarto@stjohns.edu.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu +1-718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu +1-718-990-1440.

If you are interested in artici ating in this study, please contact Corey Larsen via email at corey.larsen@[redacted] or corey.larsen20@my.stjohns.edu or mobile at 13192216952 to express your interest, and I will contact you with more information.

Thank you for your consideration in participating in this study.

Sincerely,
Corey

Corey T. Larsen
Doctoral Candidate
Department of Education Specialties
The School of Education
St. John's University
corey.larsen20@my.stjohns.edu
+86 13192216952

APPENDIX D INVITATION TO PARTICIPATE (INDIVIDUAL STUDENTS)

As a follow-up to getting no direct responses from potential student participants for the interviews, a simpler email was sent to individual students as an invitation to participate in the study. Individual students were identified through referrals by the instructor and based on the researcher's observations in the class, the criterion being perceived willingness on the part of the student to engage in a discussion about MT. This invitation was sent to selected students until five students had agreed to participate in the interviews. Invitations were sent on November 28 and 29, 2023, and five participants had been selected by December 3, 2023.

The text of the simple email invitation was as follows:

Hello [student's first name],

> I hope this email finds you well. I am writing to invite you to help out with my research by participating in a few short interviews about your experiences using machine translation apps. My aim is to interview you three times, once per week, starting this week, for about 20 to 40 minutes per interview. Is this something you would be willing to do?

Sincerely,
Corey T. Larsen

Upon expressing their willingness to participate in the series of interviews, student participants were sent the bilingual (English and Chinese) Consent Form for Student Interviewees (see Appendix G) to review prior to the first interview when the researcher gave them two copies of the consent form to sign, one for them to keep for their own records and the other for the researcher to keep on file.

APPENDIX E CONSENT FORM FOR INSTRUCTOR

The School of Education
Department of Education Specialties
PhD in Literacy Program

Consent Form for Instructor

You have been invited to take part in a research study focused on exploring the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program. This study will be conducted by Corey T. Larsen (Principal Investigator) as part of his doctoral dissertation. His faculty mentor is Dr. Olivia Stewart, Assistant Professor of Literacy in the St. John's University Department of Education Specialties Ph.D. in Literacy program.

If you agree to be in this study, you will be asked to:

1. Collaborate with the principal investigator to develop one to three lessons on strategic and responsible use of machine translation that you will deliver to your class followed by one to three sessions of guided practice of the lessons' content.
2. Allow the principal investigator to sit in on two class sessions prior to the above-mentioned lessons and observe and video-record your class during the above-mentioned lessons and guided practice.
3. Complete a survey on students' use of machine translation before and after the instruction and guided practice.
4. Take part in a series of three or four sixty-minute interviews concerning your experiences of your students using machine translation.

Planning and preparing for the lessons will require approximately five hours of your time. The lessons and guided practice will take place during your regularly schedule class times. The survey will take approximately fifteen minutes to complete each time. Participation in the interviews will involve approximately three to four hours of your time spread over a period of three or four weeks.

The date and time of the interviews and in-class observations will be determined by your availability and convenience in coordination with the principal investigator. All interviews, instruction, and guided practice sessions will be video-recorded. You may review these recordings and request that all or any portion of the recordings be destroyed.

There are no known risks associated with your participation in this research beyond those of everyday life.

Although you will receive no direct benefits, this research may help the investigator better understand the experience of using machine translation among Chinese undergraduate students in an English medium instruction setting.

Confidentiality of research records will be strictly maintained by removing identifying information from the survey results, field notes, interview recordings, and interview transcripts, all of which will be stored in a secure location. Also, your consent form and identifying demographic information will be stored separately from data to ensure your name and identity will not be revealed without your consent or linked to any information you have provided.

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For interviews, questionnaires, or surveys, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your professional relationship with the principal investigator or employment standing in any way.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Corey T. Larsen via email at corey.larsen20@my.stjohns.edu or mobile at 13192216952 or the faculty sponsor, Dr. Olivia Stewart, at stewarto@stjohns.edu or 718-990-8098.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu +1-718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu +1-718-990-1440.

Please select the appropriate statement below to indicate whether you grant the primary investigator permission to use your name in quotations from interviews:

___ Yes, I give the investigator permission to use my name when quoting material from our interview in his dissertation.

___ No, I would prefer that my name not be used.

You have received a copy of this consent document to keep for your records.

Agreement to Participate

By signing your name below, you are agreeing to participate in this study.

_____
Participant's Name (please print)

_____ _____
Participant's Signature Date

APPENDIX F CONSENT FORM FOR STUDENTS (GENERAL)

The School of Education
Department of Education Specialties
PhD in Literacy Program

Consent Form for Students 学生同意书

You have been invited to participate in a research study on the experiences of using machine translation apps among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program. This study will be conducted by Corey T. Larsen (Principal Investigator) as part of his doctoral dissertation. His faculty mentor is Dr. Olivia Stewart, Assistant Professor of Literacy in the St. John's University Department of Education Specialties Ph.D. in Literacy program.
您受邀参与一项关于在中外合作、以英语为媒介的双学位项目中，中国本科生使用机器翻译应用的经验的研究。此研究由 Corey T. Larsen（主要研究者）作为他博士论文的一部分来进行。他的学术导师是 St. John's University 教育专业系文学博士课程的扫盲学助理教授 Olivia Stewart 博士。

If you agree to participate in this study, you will be asked to do the following:

1. Complete two questionnaires about your experiences using machine translation.
2. Take part in three-to-five in-class instructional sessions and discussions about strategic and responsible use of machine translation.

如果您同意参与此研究，您将被要求完成以下任务：

1. 完成两份关于您使用机器翻译经验的问卷调查。
2. 参加三至五次的课堂教学和关于机器翻译战略和负责任使用的讨论。

Your participation in this study will take place during your regularly scheduled class over the course of approximately four or five weeks. All instructional sessions and discussions will be video recorded. You may review these recordings and request that any portion of the recordings that includes your participation be destroyed.
您的参与将在您正常安排的课程中进行，大约为期四至五周。所有的教学课程和讨论将被视频记录。您可以回顾这些录像，并要求销毁包含您参与的任何部分。

There are no known risks associated with your participation in this research beyond those of everyday life.
在您参与这项研究中，除了日常生活中的风险外，没有已知的与您的参与相关的风险。

Although you will receive no direct benefits, this research may help the investigator better understand the experience of using machine translation among Chinese undergraduate students in an English medium instruction setting.
虽然您将不会直接获得任何好处，但这项研究可能有助于研究人员更好地了解在以英语为媒介的环境中使用机器翻译的中国本科生的经验。

Confidentiality of research records will be strictly maintained by removing identifying information from survey results, field notes, video recordings and transcripts, all of which will be stored in a secure location. Also, your consent form and identifying demographic information will be stored separately from data to ensure your name and identity will not be revealed without your consent or linked to any information you have provided.
研究记录的保密性将严格维护，通过从调查结果、野外笔记、视频录像和文本中删除识别信息的方式来实现，这些信息都将存储在安全的位置上。此外，您的同意书和身份识别信息将与数据分开存储，以确保未经您同意不会透露您的姓名和身份，也不会与您提供的任何信息关联。

Your real name will not be used in any quotations or references in the reports or publications related to this study. Pseudonyms will be used to protect your privacy.
您的真实姓名不会在与本研究相关的报告或出版物中的任何引用或参考中使用。将使用化名来保护您的隐私。

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For questionnaires or in-class conversations you may have with the principal investigator, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your grades in LCS121 nor your academic standing.
参与本研究是自愿的。您可以随时拒绝参与或撤回，不会受到任何处罚。对于您与主要研究者的问卷调查或课堂交流，您有权跳过或不回答您不愿意回答的任何问题。不参与或撤回将不会影响您在 LCS121 课程中的成绩或您的学术地位。

If there is anything about the study or your participation in it that is unclear or that you do not understand, or if you have questions or wish to report a research-related problem, you may contact Corey T. Larsen via email at corey.larsen20@my.stjohns.edu or mobile at 13192216952 or the faculty sponsor, Dr. Olivia Stewart, at stewarto@stjohns.edu.
如果有关于研究或您在其中的参与有任何不清楚或不理解的地方，或者如果您有问题或希望报告与研究相关的问题，您可以通过电子邮件联系 Corey T. Larsen，邮箱地址为 corey.larsen20@my.stjohns.edu，手机为 13192216952，或者联系教职赞助人 Olivia Stewart 博士，邮箱地址为 stewarto@stjohns.edu。

For questions about your rights as a research participant, you may contact the university's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu +1-718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu +1-718-990-1440.
如需了解您作为研究参与者的权利问题，您可以联系大学的伦理审查委员会，圣约翰大学，主席 Raymond DiGiuseppe 博士，邮箱 digiuser@stjohns.edu，电话 +1-718-990-1955，或者 IRB 协调员 Marie Nitopi，邮箱 nitopim@stjohns.edu，电话 +1-718-990-1440。

You have received a copy of this consent document to keep for your records.
您已获得一份此同意文件的副本，供您保留备查。

Agreement to Participate 参与协议

By signing your name below, you are agreeing to participate in this study. Please sign below if you have decided to participate. Your signature indicates that you are at least 18 years of age and have read the information provided above. Note that your signature does not obligate you to participate, and you may withdraw from the study at any time without consequences.
在下面签署您的姓名，表示您同意参与此研究。如果您决定参与，请在下面签字。您的签名表示您至少 18 岁，并已阅读上面提供的信息。请注意，您的签名并不会强制您参与，您可以随时退出研究而不会受到任何后果。

Participant's Name 参与者的姓名 (please print both in Chinese characters and pinyin 请以中文字符和拼音写下您的姓名)
。

Participant's Signature 参与者的签名

Date 日期

APPENDIX G CONSENT FORM FOR STUDENT INTERVIEWEES

ST. JOHN'S UNIVERSITY

The School of Education
Department of Education Specialties
PhD in Literacy Program

Consent Form for Student Interviewees 学生访谈参与同意书

You have been invited to take part in a research study on the experiences of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program. This study will be conducted by Corey T. Larsen (Principal Investigator) as part of his doctoral dissertation. His faculty mentor is Dr. Olivia Stewart, Assistant Professor of Literacy in the St. John's University Department of Education Specialties Ph.D. in Literacy program.
您受邀参与一项机器翻译应用的研究项目，研究对象为中外合作、以英语为媒介的双学位中国本科生。此研究将作为 Corey T. Larsen（主要研究者）博士论文的一部分。他的学术导师 Olivia Stewart 博士是 St. John's University 教育系的助理教授，研究方向是文学博士课程的文化教育学。

If you agree to participate in this study, you will be asked to do the following:
如果您同意参与本研究，请完成以下任务:

Take part in **a series of three or four interviews** concerning your experiences of using machine translation.
参加一系列关于您使用机器翻译经验的三到四次访谈。

Each interview will last between 45 and 60 minutes. Your participation in the interviews will involve approximately three to four hours of your time and will be spread over the course of three to four weeks (one interview per week). The date and time of the interviews will be determined by your availability and convenience in coordination with the principal investigator. All interviews will be audio- and video-recorded. You may review these recordings and request that all or any portion of the recordings be destroyed.
您参与的访谈将占用您大约三到四小时的时间，分布在三到四周的时间内（每周一次访谈），每次访谈将持续 45 到 60 分钟。访谈的日期和时间将在您方便的前提下与主要研究者协调确定。所有访谈将以音频和视频方式记录。您可以回放这些音频和视频，也可以要求销毁全部或任何部分的录音。

There are no known risks associated with your participation in this research beyond those of everyday life.
在您参与的这项研究中，除了日常生活中的风险外，没有其它已知的与研究相关的风险。
Although you will receive no direct benefits, this research may help the investigator better understand the experience of using machine translation among Chinese undergraduate students in an English medium instruction setting.
虽然您不会直接获得任何利益，但这项研究可能有助于研究人员更好地了解在以英语为媒介的环境中使用机器翻译的中国本科生的经验。

Confidentiality of research records will be strictly maintained by removing identifying information from survey results, field notes, interview recordings, and interview transcripts, all of which will be stored in a secure location. Also, your consent form and identifying demographic information will be stored separately from data to ensure your name and identity will not be revealed without your consent or linked to any information you have provided.
研究将严格维护记录的保密性。您的身份信息在调查结果、田野调查笔记、视频录像和文本中都将删除，这些保密性信息都将存储在安全的位置。此外，您的同意书和身份信息将与数据分开存储，以确保未经您同意不会透露您的姓名和身份，也不会与您提供的任何信息关联。

Your real name will not be used in any quotations or references in the reports or publications related to this study. Pseudonyms will be used to protect your privacy.

您的真实姓名不会在与本研究相关的报告或出版物中引用或参考中使用。将使用化名来保护您的隐私。

Participation in this study is voluntary. You may refuse to participate or withdraw at any time without penalty. For questionnaires or in-class conversations you may have with the principal investigator, you have the right to skip or not answer any questions you prefer not to answer. Nonparticipation or withdrawal will not affect your grades in LCS121 nor your academic standing.
参与本研究是自愿的。您可以随时拒绝参与或中途退出，不会受到任何处罚。对于问卷调查和与主要研究者的课堂交流，您有权跳过或不回答您不愿意回答的任何问题。不参与或退出将不会影响您在 LCS121 课程中的成绩或您的学习状况。

If there is anything about the study or your participation in it that is unclear or that you do not understand, or if you have questions or wish to report a research-related problem, you may contact Corey T. Larsen via email at corey.larsen20@my.stjohns.edu or mobile at 13192216952 or the faculty sponsor, Dr. Olivia Stewart, at stewarto@stjohns.edu.
如果有关于研究或您的参与有任何不清楚或不理解的地方，或者如果您有问题或希望报告与研究相关的问题，您可以通过电子邮件联系 Corey T. Larsen，邮箱地址为 corey.larsen20@my.stjohns.edu，手机为 13192216952，或者联系研究赞助人 Olivia Stewart 博士，邮箱地址为 stewarto@stjohns.edu。

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu +1-718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu +1-718-990-1440.
如需了解您作为研究参与者的权利问题，您可以联系大学的伦理审查委员会，圣约翰大学，主席 Raymond DiGiuseppe 博士，邮箱 digiuser@stjohns.edu，电话 +1-718-990-1955，或者 IRB 协调员 Marie Nitopi，邮箱 nitopim@stjohns.edu，电话 +1-718-990-1440。

You have received a copy of this consent document to keep for your records.
您已获得一份此同意文件的副本，供您保留备查。

Agreement to Participate 参与协议

By signing your name below, you are agreeing to participate in this study. Please sign below if you have decided to participate. Your signature indicates that you are at least 18 years of age and have read the information provided above. Note that your signature does not obligate you to participate, and you may withdraw from the study at any time without consequences.
在下面签署您的姓名，表示您同意参与此研究。如果您决定参与，请在下面签字。您的签名表示您至少 18 岁，并已阅读上面提供的信息。请注意，您的签名并不会强制您参与，您可以随时退出研究，无需承担任何责任。

Participant's Name 参与者的姓名 (please print both in Chinese characters and pinyin 请以中文字符和拼音写下您的姓名)

Participant's Signature 参与者的签名 Date 日期

APPENDIX H ONLINE SURVEY ON MACHINE TRANSLATION

The researcher developed the following online survey based on input from several previous surveys on MT referenced in the literature (Ahn & Chung, 2020; Bahri & Mahadi, 2016; Faber & Turrero-Garcia, 2020; Giannttti, 2016; Jolley & Maimone, 2015; Merschel & Munné, 2022; Niño, 2009; Ryu et al., 2022; Sukkhwan, 2014). Note that pre- and post-study surveys contained the same questions.

Student Machine Translation Survey

This survey is part of a research study about the use of machine translation (MT) among Chinese undergraduate students who are enrolled in English medium instruction (EMI) courses in international programs in China. This study is being conducted by Corey T. Larsen, from the Department of Education Specialties at St. John's University, for his doctoral dissertation.
这项调查是一项关于中国参加国际课程英语授课的本科生使用机器翻译的研究的一部分。此研究由St. John's University教 育专业部门的Corey T. Larsen为其博士论文而进行。

There are no known risks and no costs for those who choose to participate in this survey. The information you provide will help the researcher understand your perceptions and experiences surrounding MT use. While the information collected may not benefit you directly, it may provide data that could be beneficial to students, teachers, and administrators in international, EMI, undergraduate programs in general. The survey will take approximately ten minutes to complete.
对于选择参与本调查的人，没有已知的风险，也不会产生任何费用。您提供的信息将帮助研究者了解您对使用机器翻译的 看法和经历。虽然收集到的信息可能不会直接对您有益，但它可能提供对国际英语授课本科项目中的学生、教师和管理人 员普遍有益的数据。本调查大约需要十分钟来完成。

This online survey is anonymous. IP addresses and other identifying information will not be collected, though absolute anonymity cannot be guaranteed on the internet. Your participation in this survey is completely voluntary, no one will know whether or not you completed the survey, and choosing not to participate will have no negative consequences to you. You are also free to choose not to respond to any of the questions for any reason. By completing and submitting the survey, you are giving your voluntary consent to participate in the study. 本在线调查是匿名的。我们不会收集IP地址或其他任何识别信息，但请注意，在互联网上无法保证绝对的匿名性。您参加 本调查完全是自愿的，无人会知道您是否完成了调查，选择不参加不会对您造成任何负面影响。您也可以自由选择不回答 任何问题。通过完成并提交调查，即表示您自愿同意参加本研究。

If you have any questions about this survey or the study in general, you may contact Corey T. Larsen via email at corey.larsen20@my.stjohns.edu or mobile at 13192216952. 如果您对本调查或

整体研究有任何疑问，可以通过corey.larsen20@my.stjohns.edu或手机号码13192216952联系Corey T. Larsen。

Thank you for your participation.
感谢您的参与。

Demographic Information

1. Age

- ◯ Under 18
- ◯ 18
- ◯ 19
- ◯ 20
- ◯ 21
- ◯ 22
- ◯ 23
- ◯ 24
- ◯ 25 or older

2. Gender (write in the space below)

3. I am a

- ◯ Freshman
- ◯ Sophomore
- ◯ Junior
- ◯ Senior

4. Which of the following would you say best describes your level of English proficiency?

- ◯ **Beginner or no proficiency:** Little or no ability to use English beyond possibly a few isolated words or expressions.
- ◯ **Elementary proficiency:** Can understand and use familiar, everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type, can introduce yourself and others, can ask and answer questions about personal details.
- ◯ **Low-Intermediate proficiency:** Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters, can handle very short social exchanges but can't usually understand enough to keep conversation going yourself.
- ◯ **Intermediate proficiency:** Can handle general social and work situations, understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc., and can describe experiences and events, dreams, hopes, and ambitions and briefly give reasons and explanations for opinions and plans.
- ◯ **Upper-intermediate proficiency:** Can handle general work and social communication, understand the main points of complex text on both concrete and abstract topics, and interact with a degree of fluency and spontaneity.
- ◯ **Professional working proficiency:** Can discuss a wide range of topics with relative ease and understand most of what is being said in a conversation, comfortable in most work settings, but might have minor difficulties with highly specialized or nuanced content.
- ◯ **Full professional proficiency or advanced fluency:** Can communicate effectively in any kind of formal or informal situation, understand virtually all texts, and hold detailed discussions or presentations on complex topics.

Survey on Machine Translation

For questions where you can write an answer, you can use either English or Chinese. Both are okay.

5. Have you ever used a machine translation app or computer program?

- ◯ Yes
- ◯ No

6. What are the names of the machine translation apps you typically use? Remember, it's okay to write the names of the apps in Chinese.

7. How often do you use machine translation apps?

- ◯ Never: I have never used machine translation applications.
- ◯ Rarely (less than once a month): I seldom use machine translation applications, generally less than once a month.
- ◯ Occasionally (1-3 times a month): I use machine translation applications occasionally, around 1 to 3 times a month.
- ◯ Regularly (once a week): I use machine translation applications regularly, about once a week.
- ◯ Frequently (2-4 times a week): I use machine translation applications frequently, around 2 to 4 times a week.
- ◯ Very frequently (5-7 times a week): I use machine translation applications very frequently, almost daily.
- ◯ Daily: I use machine translation applications every day.

8. **On average, how many times do you use machine translation applications in a day?**

- ◯ 0 times (I don't use machine translation daily): I do not use machine translation applications on a daily basis.
- ◯ 1-2 times: I use machine translation applications 1 to 2 times a day.
- ◯ 3-5 times: I use machine translation applications 3 to 5 times a day.
- ◯ 6-9 times: I use machine translation applications 6 to 9 times a day.
- ◯ 10-14 times: I use machine translation applications 10 to 14 times a day.
- ◯ 15 times or more: I use machine translation applications 15 times or more in a day.
- ◯ I am constantly using machine translation throughout the day: I frequently engage with machine translation applications multiple times an hour throughout the day.

9. Select the response that most accurately describes your MT use:

- ◯ I use machine translation to translate more from English to Chinese.
- ◯ I use machine translation to translate more from Chinese to English.
- ◯ I use machine translation equally as often to translate from English to Chinese and Chinese to English.

10. How often do you use machine translation for each of the following purposes?

	Never	Rarely (less than once a month)	Occasionally (1-3 times a month)	Regularly (once a week)	Frequently (2-4 times a week)	Very Frequently (5-7 times a week)	Daily (every day)
Listening to spoken English	○	○	○	○	○	○	○
Speaking to others in English	○	○	○	○	○	○	○
Reading English texts	○	○	○	○	○	○	○
Writing English texts	○	○	○	○	○	○	○
Checking grammar	○	○	○	○	○	○	○
Learning grammar	○	○	○	○	○	○	○
Looking up unfamiliar words	○	○	○	○	○	○	○
Learning vocabulary	○	○	○	○	○	○	○

11. For what other purposes do you typically use machine translation apps other than those listed in the previous question? (Note: if you do not use them for any other purposes, you can leave this question blank.)

12. When you use machine translation, how often do you accept the results recommended by the app?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Very Often
- ○ Almost Always
- ○ Always

13. What are the reasons you typically choose not to accept the results recommended by the machine translation app?

14. What are the reasons you typically choose to accept the results recommended by the machine translation app?

15. Please rate the degree to which you consider it ethical (right) or unethical (wrong) to use machine translation for each of the following:

	Completely Unethical	Mostly Unethical	Somewhat Unethical	Depends on the Situation	Somewhat Ethical	Mostly Ethical	Completely Ethical
Preparing a class presentation	○	○	○	○	○	○	○
Working on a translation assignment	○	○	○	○	○	○	○
Writing an essay or a research paper	○	○	○	○	○	○	○
Completing homework assignments	○	○	○	○	○	○	○
Taking an exam	○	○	○	○	○	○	○
To check if your guesses about words or phrases are correct	○	○	○	○	○	○	○
Translating individual words	○	○	○	○	○	○	○
Translating short phrases	○	○	○	○	○	○	○
Translating full sentences	○	○	○	○	○	○	○
Translating full paragraphs	○	○	○	○	○	○	○
Translating an entire chapter or article	○	○	○	○	○	○	○

16. What strategies do you use when using machine translation apps? Please explain.

17. What would you say are your primary motivations for choosing to use machine translation apps?

18. In your opinion, what are the advantages of using machine translation apps? Please explain.

19. In your opinion, what are the disadvantages of using machine translation apps? Please explain.

20. If one of your friends told you they were planning to use machine translation to complete a writing assignment, what advice would you give them?

21. Did you use a machine translation app to help you complete this survey?

- ◯ Yes
- ◯ No

APPENDIX I IN-DEPTH INTERVIEW PROTOCOLS

Following Seidman's (2005) in-depth phenomenologically-based interviewing structure, all participants were interviewed three times with approximately one-week intervals between each interview. This structure ensured both depth of data collection and trustworthiness of participant responses by establishing context for their experiences, reducing the potential impact of a participant's mood on their responses during a single interview, and allowed the researcher to check for "internal consistency" in participants' responses over time (Seidman, 2005, p. 24; see also Daly, 2007). Each interview was no longer than forty-five minutes and was both audio and video recorded. The focus of each of the three interviews is outlined in the protocols below:

- Interview 1: Focused on participants' backgrounds and explore past experiences that may contribute to how they experience MT in the present (see also Daly, 2007).
- Interview 2: Dedicated to "the concrete details of the participants' present lived experience" (Seidman, 2005, p. 18) to gain insight into their daily routines and interactions regarding MT as well as their experiences of the direct instruction on MT and guided practice in class.
- Interview 3: In the third interviews participants were be asked to "reflect on the meaning of their experience" (Seidman, 2005, p. 18).

Interview Protocol: Interview #1 (Students)

Introduction

Thank you for agreeing to participate in this study, which is part of my doctoral dissertation. As reminder, this is the first in a series of three interviews that will focus on your experience of using machine translation. Your responses will contribute to developing an overall understanding of how Chinese undergraduates in English medium instruction, Chinese-foreign joint degree programs perceive and use machine translation. This interview will last no longer than forty-five minutes.
Do I have your permission to start recording now?

Consent and Confidentiality

As is stated in the consent form, I just want to remind you that confidentiality of the records of this interview will be strictly maintained, and I will not use your name in the research report. I know you have already signed the consent form, but I'd like to take this moment to confirm that you still consent to participating in this study [pause for verbal consent, be prepared to clarify if necessary]. Also, participation in this interview is voluntary. You are welcome to skip or not answer any questions you prefer not to answer, and you can stop and/or withdraw from the interview at any time. Do you have any questions about consent and confidentiality before we begin? Do you have any questions about the study?

Interview #1 Questions
In this interview, I am interested in hearing about your **past experiences** with machine translation before the start of this school year. What are some of the prior experiences with machine translation you have had as a young child, into your teenage/middle/high school years, and as you started university classes?

Possible probing questions:

- Tell me about the first time you remember using machine translation. How did you find out about it? For what purpose did you use it?
- Talk about a positive experience you had using machine translation in middle or high school.
- Talk about a negative experience you had using machine translation in middle or high school.
- Can you tell me more about that?
- What machine translation apps have you used in the past? How did you use them? What did you use them for? Have you used different MT apps for different purposes?

Conclusion
That's everything I would like to cover for this first interview. Before we conclude, is there anything you would like to add to the things you have said regarding your past experiences of using machine translation? Do you have any questions for me?

Interview Protocol: Interview #2 (Students)

Introduction
I am looking forward to continuing our series of interviews. Thank you, once again, for agreeing to participate in this study. This is the second in a series of three interviews that will focus on your experience of using machine translation. As I mentioned in our first interview, your responses will contribute to developing an overall understanding of how Chinese undergraduates in English medium instruction, Chinese-foreign joint degree programs perceive and use machine translation. This second interview will also last no longer than forty-five minutes.
Do I have your permission to start recording now?

Consent and Confidentiality
I just want to remind you that, as I mentioned in our previous interview and as is written in the consent form, confidentiality of the records of this interview will be strictly maintained, and I will not use your name in the research report. I know you have already signed the consent form, but I'd like to take this moment to confirm that you still consent to participating in this study [pause for verbal consent, be prepared to clarify if necessary]. Also, participation in this interview is voluntary. You are welcome to skip or not answer any questions you prefer not to answer, and you can stop and/or withdraw from the interview at any time. Do you have any questions about consent and confidentiality before we begin? Do you have any questions about the study?
Okay, let's get started.

Interview #2 Questions
In this interview, I am interested in hearing about your **present experiences** with machine translation as a student in this program. How do you use machine translation from day-to-day as a student in an English medium instruction program? Talk to me about experiences you have had using machine translation since you started school here.

Possible probing questions:

- Explain how you use machine translation. Take me step-by-step through the process of how you use it. What decisions do you make when you use MT?
- Talk about a positive experience you have had using machine translation since starting university.
- Talk about a negative experience you had using machine translation since starting university.
- Can you tell me more about that?
- Tell me about how your use of machine translation has changed since you started this program.
- How are you engaging with machine translation currently in your class [the class where direct instruction and guided practice has begun]? Tell me about this experience.
- How has your use of machine translation changed over the years?
- What machine translation apps do you use now? How do you use them? What do you use them for? Do you use different MT apps for different purposes?

Conclusion
That's everything I would like to cover for the second interview. Before we conclude, is there anything you would like to add to the things you have said regarding how you presently experience using machine translation? Do you have any questions for me?

Interview Protocol: Interview #3 (Students)

Introduction
Welcome back to the third and final interview. Thank you, once again, for agreeing to participate in this study. As in the previous interviews, we will continue focus on your experience of using machine translation in this final interview. As I have mentioned in the previous inteviews, your responses will contribute to developing an overall understanding of how Chinese undergraduates in English medium instruction, Chinese-foreign joint degree programs perceive and use machine translation. This final interview will also last no longer than forty-five minutes.
Do I have your permission to start recording now?

Consent and Confidentiality
I just want to remind you that, as I mentioned in our previous interviews and as is written in the consent form, confidentiality of the records of this interview will be strictly maintained, and I will not use your name in the research report. I know you have already signed the consent form, but I'd like to take this moment to confirm that you still consent

to participating in this study [pause for verbal consent, be prepared to clarify if necessary]. Also, participation in this interview is voluntary. You are welcome to skip or not answer any questions you prefer not to answer, and you can stop and/or withdraw from the interview at any time. Do you have any questions about consent and confidentiality before we begin? Do you have any questions about the study?
Okay, let's get started.

Interview #3 Questions
In this interview, I am going to ask you to reflect on the **meaning** of your experiences with machine translation. Given what you have said in prior interviews about your past experiences with machine translation and how you interact with machine translation in the present as a student in the English medium instruction program, what does it mean for you to use machine translation? How do you make sense of your overall experience with machine translation?

Possible probing questions:

- What would it mean for you if you were not allowed to use machine translation? If MT did not exist?
- What opinions do you have regarding machine translation? For personal use? As a student? For different purposes (e.g., preparing for an oral presentation vs. writing a research paper)?
- Can you tell me more about that?
- How has your perspective of machine translation changed through experiences you have had in class over the past few weeks? [referring to in-class discussions and implementation of guidelines for MT use]
- What does the experience of openly discussing MT in class and implementing mutually agreed-upon guidelines for MT use mean for you in regards to how you perceive and use machine translation now?
- How do you envision that you will interact with/use machine translation in the future?

Conclusion
That's everything for the final interview. Before we conclude, is there anything you would like to add to the things you have said regarding what the experience of using machine translation means to you? Do you have any questions for me?

Thank you, once again, for agreeing to participate in this series of interviews. I appreciate your taking the time to talk to me over the past few weeks and to answer my questions. I have thoroughly enjoyed hearing your responses. If you have any questions about this study or would like to see the final research report, feel free to get in touch with me at any time. You can find my contact information on your copy of the consent form.

APPENDIX J ST. JOHN'S UNIVERSITY IRB APPROVAL

Federal Wide Assurance: FWA00009066

Jul 28, 2023 8:37:11 AM EDT

PI: Corey Larsen
CO-PI: Olivia Stewart
Dept: The School of Education, Education Specialties

Re: Initial - IRB-FY2024-8 *A phenomenological inquiry into the experience of machine translation use among Chinese undergraduates*

Dear Corey Larsen:

The St John's University Institutional Review Board has rendered the decision below for *A phenomenological inquiry into the experience of machine translation use among Chinese undergraduates*.

Decision: Exempt

PLEASE NOTE: If you have collected any data prior to this approval date, the data must be discarded.

Selected Category: Category 7. Storage or maintenance for secondary research for which broad consent is required: Storage or maintenance of identifiable private information or identifiable biospecimens for potential secondary research use if an IRB conducts a limited IRB review and makes the determinations required by §46.111(a)(8).

Sincerely,

Raymond DiGiuseppe, PhD, ABPP
Chair, Institutional Review Board
Professor of Psychology

APPENDIX K ST. JOHN'S UNIVERSITY IRB MODIFICATION APPROVAL

Date: 3-3-2024

IRB #: IRB-FY2024-8
Title: A phenomenological inquiry into the experience of machine translation use among Chinese undergraduates
Creation Date: 6-10-2023
End Date:
Status: Approved
Principal Investigator: Corey Larsen
Review Board: St John's University Institutional Review Board
Sponsor:

Study History

Submission Type Initial	Review Type Exempt	Decision Exempt
Submission Type Modification	Review Type Expedited	Decision Approved

Key Study Contacts

Member Olivia Stewart	Role Co-Principal Investigator	Contact stewarto@stjohns.edu
Member Corey Larsen	Role Principal Investigator	Contact corey.larsen20@my.stjohns.edu
Member Corey Larsen	Role Primary Contact	Contact corey.larsen20@my.stjohns.edu

APPENDIX L PARTNER UNIVERSITY IRB APPROVAL

Thursday, January 25, 2024 at 15:11:17 Mountain Standard Time

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Subject: Re: Inquiry about IRB process for off-site dissertation research
Date: Tuesday, October 24, 2023 at 10:34:41 AM Mountain Daylight Time
From: Sukki Yoon
To: Corey Larsen
Attachments: image001.jpg, image002.png

Corey, I am honoring the IRB approval you got from St. John's University. Please use this email correspondence as proof of that approval. Good luck with your research!

Best,

Sukki Yoon, Ph.D.
Professor of Marketing, College of Business
Faculty Fellow, Center for Health and Behavioral Sciences
Chair, Institutional Review Board
Editor-in-Chief, Journal of Current Issues and Research in Advertising
Bryant University
1150 Douglas Pike, Smithfield RI 02917
sukkiyoon.com; syoon@bryant.edu; 401-232-6997

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Listen to Podcast "Curious and Interesting" on Apple Podcast, Google Podcasts, Spotify, and YouTube: jcira.buzzsprout.com

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From: Corey Larsen <clarsen@bryant.edu>
Date: Tuesday, October 24, 2023 at 9:30 AM
To: Sukki Yoon <syoon@bryant.edu>
Subject: Re: Inquiry about IRB process for off-site dissertation research

Hi Sukki,

Thanks again for your quick response. I have attached the consent forms for students. There are two separate forms, one for interviews and the other for surveys and class observations. Note that I added the statement you provided to the bottom of each form. The original versions simply stated "By signing your name below, you are agreeing to participate in this study," which is according to the St. John's University consent form format. This same language has been retained in the consent form for instructors, which is also attached here.

As for ensuring that the student participants are at least 18 years old, I will only be working with second-year students for this study, so it is very unlikely that any of them would be under 18. We do occasionally get 17-year-old freshmen, but they will have turned 18 before staring their sophomore year. Even so, I have included the language you provided in the updated consent forms.

If anything else is needed, do let me know. I'm happy to send you anything you need.

All the best,
Corey

From: Sukki Yoon <syoon@bryant.edu>
Date: Tuesday, October 24, 2023 at 8:14 PM
To: Corey Larsen <clarsen@bryant.edu>
Subject: Re: Inquiry about IRB process for off-site dissertation research

Corey,

Thank you for sharing the documents. Everything seems in order except for one detail. Could you ensure that all participants are at least 18 years old? Additionally, your consent forms should be updated to include the following statement:

"Please sign below if you have decided to participate. Your signature indicates that you are at least 18 years of age and have read the information provided above. Note that your signature does not obligate you to participate, and you may withdraw from the study at any time without consequences."

For more guidance, please refer to our IRB website.

https://info.bryant.edu/institutional-review-board

Please share the revised consent form. Then I will approve it immediately.

Thanks.

From: Corey Larsen <clarsen@bryant.edu>
Date: Tuesday, October 24, 2023 at 4:54 AM
To: Sukki Yoon <syoon@bryant.edu>
Subject: Re: Inquiry about IRB process for off-site dissertation research

Hello, Sukki. Thank you for your quick response! Sure, I am happy to share my survey and interview questions. Attached you will find a draft of the interview protocols for both student and faculty participants as well as a draft of the survey questions (as submitted to St. John's IRB) as well as the pilot version of the survey (note: as approved, the survey includes a pilot with the goal of refining questions before the study). If you need any additional information, just let me know. Thanks!

Corey

From: Sukki Yoon <syoon@bryant.edu>
Date: Tuesday, October 24, 2023 at 1:10 AM
To: Corey Larsen <clarsen@bryant.edu>
Subject: Re: Inquiry about IRB process for off-site dissertation research

Corey, thanks for reaching out to me. Could you share your survey/interview questions? Then I can grandfather the IRB approval from St. John's right away. Thanks.

Best,

Sukki Yoon, Ph.D.
Professor of Marketing, College of Business
Faculty Fellow, Center for Health and Behavioral Sciences
Chair, Institutional Review Board
Editor-in-Chief, Journal of Current Issues and Research in Advertising
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Listen to Podcast "Curious and Interesting" on Apple Podcast, Google Podcasts, Spotify, and YouTube: jcira.buzzsprout.com

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From: Corey Larsen <clarsen@bryant.edu>
Date: Monday, October 23, 2023 at 5:34 AM
To: Sukki Yoon <syoon@bryant.edu>
Subject: Inquiry about IRB process for off-site dissertation research

Hello Professor Yoon,
I hope this email finds you well. I am writing to inquire about whether I need to seek institutional approval from Bryant for my dissertation research for which I plan to begin data collection at the end of November. I have received IRB approval from St. John's University where I am currently a Ph.D. candidate (see attached approval letter). Note that I will use the CITI certification of my Co-PI from St. John's University, Olivia Stewart (see attached certification as well as my certificate of completion for the St. John's IRB course).

I have looked into an equivalent to the IRB process here at Beijing Institute of Technology, Zhuhai, which is Bryant's partner institution here in China, but they do not require any such process. However, since I do plan to engage with Bryant Zhuhai students in this research, I want to find out whether I will need to also secure IRB approval from Bryant.

My study will use a phenomenological research design to explore the experiences of using machine translation (MT) among Chinese undergraduate students and their instructor and the affordances of machine translation for teaching and learning among this population. I plan to collect data through surveys, interviews, and observations of students and faculty at Bryant Zhuhai here in China, and this will include audio and video recordings. The primary research question is: What is the experience of using machine translation among Chinese undergraduate students in a Chinese-foreign, English medium instruction, joint degree program in southern China?

To gain IRB approval from St. John's, I submitted drafts of the survey questions, interview and observation protocols, and consent forms. I am happy to provide all these materials to the Bryant IRB as well, but I am writing this email first to find out whether it is necessary. Please let me know, and I will be glad to comply.

Sincerely,
Corey Larsen

REFERENCES

Abdulaal, M. A. A.-D. (2022). Tracing machine and human translation errors in some literary texts with some implications for EFL translators. *Journal of Language and Linguistic Studies*, *18*(Special Issue 1), 176–191. http://www.jlls.org/index.php/jlls/article/view/3073

Ahn, S., & Chung, E. S. (2020). Students' perceptions of the use of online machine translation in L2 writing. *Multimedia-Assisted Language Learning*, *23*(2), 10–35. https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artiId=ART002597529

Alm, A., & Watanabe, Y. (2021). Online translators for L2 writing: A comparison of student and teacher perspectives. In N. Zoghlami, C. Brudermann, C. Sarré, M. Grosbois, L. Bradley, & S. Thouësny (Eds.), *CALL and Professionalisation: Short Papers from EUROCALL 2021* (1st ed., pp. 23–28). Research-publishing.net. https://doi.org/10.14705/rpnet.2021.54.1303

Al-Tuwayrish, R. K. (2016). An evaluative study of machine translation in the EFL scenario of Saudi Arabia. *Advances in Language and Literary Studies*, *7*(1), 5–10. https://doi.org/10.7575/aiac.alls.v.7n.1p.5

Anderson, D. D. (1995). Machine translation as a tool in second language learning. *CALICO Journal*, *13*(1), 68–97. https://doi.org/10.1558/cj.v13i1.68-97

Anderson, E. H., & Spencer, M. H. (2002). Cognitive representations of AIDS: A phenomenological study. *Qualitative Health Research, 12*(10), 1338-1352. https://doi.org/10.1177/1049732302238747

Augustyn, P. (2013). No dictionaries in the classroom: Translation equivalents and vocabulary acquisition. *International Journal of Lexicography*, *26*(3), 362–385. https://doi.org/10.1093/ijl/ect017

Awadh, A. N. M., & Khan, A. S. (2020). Challenges of translating neologisms comparative study: Human and machine translation. *Dil ve Dilbilimi Çalışmaları Dergisi*, *16*(4), 1987–2002. https://doi.org/10.17263/jlls.851030

Bahri, H. (2016). Google Translate as a supplementary tool for learning Malay: A case study at Universiti Sains Malaysia. *Advances in Language and Literary Studies, 7*(3), 161–167. https://doi.org/10.7575/aiac.alls.v.7n.3p.161

Bangura, A. K., Obando, J. A., Munene, I. I., & Shisanya, C. (2019). *Conducting research and mentoring students in Africa*. Council for the Development of Social Science Research in Africa.

Bavendiek, W. U. (2022). Using machine translation as a parallel text to access literature for modern language learning. In C. Hampton & S. Salin (Eds.), *Innovative language teaching and learning at university: Facilitating transition from and to higher education* (pp. 57–67). Research-publishing.net. https://doi.org/10.14705/rpnet.2022.56.1373

Benboujja, F., Hartnick, E., Zablah, E., Hersh, C., Callans, K., Villamor, P., Yager, P. H., & Hartnick, C. (2024). Overcoming language barriers in pediatric care: A multilingual, AI-driven curriculum for global healthcare education. *Frontiers in public health, 12,* 1337395. https://doi.org/10.3389/fpubh.2024.1337395

Bhattacharya, K. (2017). *Fundamentals of qualitative research: A practical Guide.* Routledge.

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices.* Global Text Project. http://scholarcommons.usf.edu/oa_textbooks/3

Bowker, L. (2020a). Chinese speakers' use of machine translation as an aid for scholarly writing in English: A review of the literature and a report on a pilot workshop on machine translation literacy. *Asia Pacific Translation and Intercultural Studies*, *7*(3), 288–298. https://doi.org/10.1080/23306343.2020.1805843

Bowker, L. (2020b). Machine translation literacy instruction for international business students and business English instructors. *Journal of Business & Finance Librarianship*, *25*(1–2), 25–43. https://doi.org/10.1080/08963568.2020.1794739

Briggs, N. (2018). Neural machine translation tools in the language learning classroom: Students' use, perceptions, and analyses. *JALT CALL Journal*, *14*(1), 2–24. https://doi.org/10.29140/jaltcall.v14n1.221

Cardona, M. A., Rodríguez, R. J., & Ishmael, K. (2023, May). *Artificial Intelligence and the future of teaching and learning: Insights and recommendations.* U.S. Department of Education. https://www2.ed.gov/documents/ai-report/ai-report.pdf

Carreres, A., & Noriega-Sánchez, M. (2011). Translation in language teaching: Insights from professional translator training. *The Language Learning Journal*, *39*(3), 281–297. https://doi.org/10.1080/09571736.2011.567356

Chang, L. -C. (2022). Chinese language learners evaluating machine translation accuracy. *The JALT CALL Journal*, *18*(1), 110–136. https://doi.org/10.29140/jaltcall.v18n1.592

Chen, C. W. (2020). Using Google Translate in an authentic translation task: The process, refinement efforts and student perceptions. *Current Trends in Translation*

Teaching and Learning, *E*(7), 213–238. http://www.cttl.org/uploads/5/2/4/3/5243866/cttl_e_2020_7_cheryl_chen_wei-yu.pdf

Chung, E. S. (2020). The effect of L2 proficiency on post-editing machine translated texts. *The Journal of AsiaTEFL*, *17*(1), 182–193. https://doi.org/10.18823/asiatefl.2020.17.1.11.182

Chung, E. S., & Ahn, S. (2021). The effect of using machine translation on linguistic features in L2 writing across proficiency levels and text genres. *Computer Assisted Language Learning*, *35*(9), 1–26. https://doi.org/10.1080/09588221.2020.1871029

Clifford, J., Merschel, L., & Munné, J. (2013). Surveying the landscape: What is the role of machine translation in language learning? *Revista D'innovació Educativa*, *10*, 108–121. https://doi.org/10.7203/attic.10.2228

Correa, M. (2014). Leaving the "peer" out of peer-editing: Online translators as a pedagogical tool in the Spanish as a second language classroom. *Latin American Journal of Content and Language Integrated Learning*, *7*(1), 1–20. https://doi.org/10.5294/laclil.2014.7.1.1

Creswell, J. W. (2016). *30 essential skills for the qualitative researcher.* SAGE Publications, Inc.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications, Inc.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications, Inc.

Cribb, V. M. (2000). Machine translation: The alternative for the 21st century? *TESOL Quarterly*, *34*(3), 560–569. https://doi.org/10.2307/3587744

Crossley, S. A. (2018). Technological disruption in foreign language teaching: The rise of simultaneous machine translation. *Language Teaching*, *51*(4), 541–552. https://doi.org/10.1017/S0261444818000253

Dai, K., & Garcia, J. (2019). Intercultural learning in transnational articulation programs: The hidden agenda of Chinese students' experiences. *Journal of International Students, 9*(2). https://doi.org/10.32674/jis.v9i2.677

Daly, K. J. (2007). *Qualitative methods for family studies & human development.* SAGE Publications, Inc. http://dx.doi.org/10.4135/9781452224800

Davis, R. (2006). Utopia or chaos? The impact of technology on language teaching. *The Internet TESL Journal*, *XII*(11). http://iteslj.org/Articles/Davis-ImpactOfTechnology.html

DeepL Press Information. Setting Records! (n.d.). https://www.deepl.com/press

Delorme Benites, A., Cotelli Kureth, S., Lehr, C., & Steele, E. (2021). Machine translation literacy: A panorama of practices at Swiss universities and implications for language teaching. In N. Zoghlami, C. Brudermann, C. Sarré, M. Grosbois, L. Bradley, & S. Thouësny (Eds.), *CALL and professionalisation: Short papers from EUROCALL 2021* (1st ed., pp. 80–87). Research-publishing.net. https://doi.org/10.14705/rpnet.2021.54.1313

Donley, K. (2022). Translanguaging as a theory, pedagogy, and qualitative research methodology. *NABE Journal of Research and Practice.* https://doi.org/10.1080/26390043.2022.2079391

Ducar, C., & Schocket, D. H. (2018). Machine translation and the L2 classroom: Pedagogical solutions for making peace with Google translate. *Foreign Language Annals*, *51*(4), 779–795. https://doi.org/10.1111/flan.12366

Duke, N. K., & Mallette, M. H. (2011). *Literacy research methodologies* (2nd ed.). The Guildford Press.

Enkin, E., & Mejías-Bikandi, E. (2016). Using online translators in the second language classroom: Ideas for advanced level Spanish. *Latin American Journal of Content & Language Integrated Learning*, *9*(1), 138–158. https://doi.org/10.5294/laclil.2016.9.1.6

Eser, O., & Dikilitaş, K. (2017). Learners' perceptions of translation in English as the medium of instruction (EMI) at university level. *Journal of Education and Practice*, *8*(8), 124–129. https://iiste.org/Journals/index.php/JEP/article/view/36041/37035

Faber, A., & Turrero-Garcia, M. (2020, March 10). Online translators as a pedagogical tool. *The FLT Mag*. https://fltmag.com/online-translators-as-a-pedagogical-tool/

Fang, W., & Wang, S. (2014). Chinese Students' Choice of Transnational Higher Education in a Globalized Higher Education Market: A Case Study of W University. *Journal of Studies in International Education, 18*(5), 475–494. https://doi.org/10.1177/1028315314523989

Flores, N., & Rosa, J. (2015). Undoing appropriateness: Raciolinguistic ideologies and language diversity in education. *Harvard Educational Review 85*(2), 149–171. https://doi.org/10.17763/0017-8055.85.2.149

Fredholm, K. (2019). Effects of Google translate on lexical diversity: Vocabulary development among learners of Spanish as a foreign language. *Revista Nebrija de Lingüística Aplicada a La Enseñanza de Lenguas*, *13*(26), 98–117. https://doi.org/10.26378/rnlael1326300

Gallagher, S. (2022). Phenomenology and pragmatism: From the end to the beginning. *European journal of pragmatism and American philosophy [Online], XIV*(2), 1-14. https://doi.org/10.4000/ejpap.2985

Garcia, I. (2010). Can machine translation help the language learner? *ICT for Language Learning, 3rd Edition.*, *3*. https://conference.pixel-online.net/conferences/ICT4LL2010/common/download/Proceedings_pdf/TRAD02-Garcia.pdf

Garcia, I., & Peña, M. I. (2011). Machine translation-assisted language learning: Writing for beginners. *Computer Assisted Language Learning*, *24*(5), 471–487. https://doi.org/10.1080/09588221.2011.582687

García, O., Ibarra Johnson, S., & Seltzer, K. (2017). *The translanguaging classroom: Leveraging student bilingualism for learning.* Caslon, Inc.

Giannetti, T. R. (2016). *Google Translate as a resource for writing* [Doctoral Dissertation]. https://fisherpub.sjf.edu/cgi/viewcontent.cgi?article=1358&context=education_ETD_masters

Godwin-Jones, R. (2022). Partnering with AI: Intelligent writing assistance and instructed language learning. *Language Learning & Technology*, *26*(2), 5–24. https://doi.org/10125/73474

Henshaw, F. (2020, June 15). Online translators in language classes: Pedagogical and practical considerations. *The FLT Mag*. https://fltmag.com/online-translators-pedagogical-practical-considerations/

Hoff, M. A., & Reynolds, J. S. (2022). "It's a different world": Language ideologies, literacies, and college readiness. *Adult Literacy Education, fall 2022,* 4–19. http://doi.org/10.35847/MHoff.JReynolds.4.3.4

Hofstadter, D. (2018, January 30). The shallowness of Google Translate. *The Atlantic*. https://www.theatlantic.com/technology/archive/2018/01/the-shallowness-of-google-translate/551570/

Horwitz, E., Horwitz, M., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal, 70*(2), 125-132. https://doi.org/10.2307/327317

Jiménez-Crespo, M. A. (2017). The role of translation technologies in Spanish language learning. *Journal of Spanish Language Teaching*, *4*(2), 181–193. https://doi.org/10.1080/23247797.2017.1408949

Jin, L., & Deifell, E. (2013). Foreign language learners' use and perception of online dictionaries: A survey study. *MERLOT Journal of Online Learning and Teaching*, *9*(4), 515–533. https://jolt.merlot.org/vol9no4/jin_1213.pdf

Jolley, J. R., & Maimone, L. (2015). Free online machine translation: Use and perceptions by Spanish students and instructors. In A. J. Moeller (Ed.), *Learn Language, Explore Cultures, Transform Lives: Selected Papers from the 2015 Central States Conference on the Teaching of Foreign Languages*. Robert M. Terry.

Jolley, J. R., & Maimone, L. (2022). Thirty years of machine translation in language teaching and learning: A review of the literature. *L2 Journal*, *14*(1), 26–44. https://doi.org/10.5070/L214151760

Kadhim, K. A., Habeeb, L. S., Sapar, A. A., Hussin, Z., & Abdullah, M. (2013). An evaluation of online machine translation of Arabic into English news headlines: Implications on students' learning purposes. *The Turkish Online Journal of Educational Technology*, *12*(2).

Karnal, A. R., & Pereira, V. V. (2015). Reading strategies in a L2: A study on machine translation. *The Reading Matrix: An International Online Journal*, *15*(2), 69–79. https://www.readingmatrix.com/files/13-5728575a.pdf

Kelly, R., & Hou, H. (2021). Empowering learners of English as an additional language: Translanguaging with machine translation. *Language and Education, 36*(6), 544–559. https://doi.org/10.1080/09500782.2021.1958834

Kennedy, O. (2021). Independent learner strategies to improve second language academic writing in an online course. In N. Zoghlami, C. Brudermann, C. Sarré, M. Grosbois, L. Bradley, & S. Thouësny (Eds.), *CALL and professionalisation: Short papers from EUROCALL 2021* (1st ed., pp. 184–188). Research-publishing.net. https://doi.org/10.14705/rpnet.2021.54.1330

Kim, E-Y. J., & LaBianca, A. S. (2017). Ethics in academic writing help for international students in higher education: Perceptions of faculty and students. *J Acad Ethics 16,* 39–59. https://doi.org/10.1007/s10805-017-9299-5

Klekovkina, V., & Denié-Higney, L. (2022). Machine translation: Friend or foe in the language classroom? *L2 Journal*, *14*(1), 105–135. https://doi.org/10.5070/L214151723

Knowles, C. L. (2022). Using an ADAPT approach to integrate Google Translate into the second language classroom. *L2 Journal*, *14*(1). https://doi.org/10.5070/L214151690

Krashen, S. D. (1982). *Principles and practice in second language acquisition.* Pergamon Press.

Lawton, R. & de Kleine, C. (2020). The need to dismantle "standard" language ideology at the community college: An analysis of writing and literacy instructor attitudes. *Journal of College Reading and Learning, 50*(4), 197- 219. https://doi.org/10.1080/10790195.2020.1836938

Lee, S. -M. (2020). The impact of using machine translation on EFL students' writing. *Computer Assisted Language Learning*, *33*(3), 157–175. https://doi.org/10.1080/09588221.2018.1553186

Lee, S. -M. (2022). An investigation of machine translation output quality and the influencing factors of source texts. *ReCALL*, *34*(1), 81–94. https://doi.org/10.1017/S0958344021000124

Lee, S. -M., & Briggs, N. (2021). Effects of using machine translation to mediate the revision process of Korean university students' academic writing. *ReCALL*, *33*(1), 18–33. https://doi.org/10.1017/S0958344020000191

Lee, Y. -J. (2021). Still taboo? Using machine translation for low-level EFL writers. *ELT Journal*, *75*(4), 432–441. https://doi.org/10.1093/elt/ccab018

Leung, C., & Valdés, G. (2019). Translanguaging and the transdisciplinary framework for language teaching and learning in a multilingual world. *The Modern Language Journal*, *103*(2), 348–370. https://doi.org/10.1111/modl.12568

Li, W. (2018). Translanguaging as a practical theory of language. *Applied Linguistics*, *39*(1), 9–30. https://doi.org/10.1093/applin/amx039

Lichtman, M. (2012). *Qualitative research in education: A user's guide* (3rd ed.). SAGE Publications, Inc.

Lippi-Green, R. (2012). *English with an accent: Language, ideology, and discrimination in the United States.* Routledge. (Original work published 1997)

Lyddon, P. A. (2018). From computer-assisted language learning to digitally mediated intercultural communication. In P. Taalas, J. Jalkanen, L. Bradley, & S. Thouësny, *Future-proof CALL: Language learning as exploration and encounters – short papers from EUROCALL 2018* (pp. 171–175). Research-publishing.net. https://doi.org/10.14705/rpnet.2018.26.832

Lyu, J. (2020). The modularized construction on translation competence for business English majors in China. *English Language Teaching*, *13*(7), 124–129. https://doi.org/10.5539/elt.v13n7p124

Macedo, D. (2003). Literacy matters. *Language Arts, 81*(1), 12–13. https://jstor.org/stable/41484168

Maghsoudi, M., & Mirzaeian, V. (2020). Machine versus human translation outputs: Which one results in better reading comprehension among EFL learners? *The JALT CALL Journal*, *16*(2), 69–84. https://doi.org/10.29140/jaltcall.v16n2.342

Merschel, L., & Munné, J. (2022). Perceptions and practices of machine translation among 6th-12th grade world language teachers. *L2 Journal*, *14*(1), 60–76. https://doi.org/10.5070/L214154165

Mirzaeian, V. R. (2021). The effect of editing techniques on machine translation-informed academic foreign language writing. *The EUROCALL Review*, *29*(2), 33–43. https://doi.org/10.4995/eurocall.2021.13120

Morley, J. (1991). The pronunciation component in teaching English to speakers of other languages. *TESOL Quarterly, 25*(3), 513-520. https://www.jstor.org/stable/3586981

Murata, M. (2016). The professional linguist: Language skills for the real world. In E. Corradini, K. Borthwick, & A. Gallagher-Brett (Eds.), *Employability for languages: A handbook* (pp. 73–82). Research-publishing.net. https://doi.org/10.14705/rpnet.2016.cbg2016.466

NetEase. (n.d.). *Youdao* translation (有道翻译). https://fanyi.youdao.com/

Niño, A. (2008). Evaluating the use of machine translation post-editing in the foreign language class. *Computer Assisted Language Learning*, *21*(1), 29–49. https://doi.org/10.1080/09588220701865482

Niño, A. (2009). Machine translation in foreign language learning: Language learners' and tutors' perceptions of its advantages and disadvantages. *ReCALL*, *21*(2), 241–258. https://doi.org/10.1017/S0958344009000172

Ohashi, L. (2022). The use of machine translation in L2 education: Japanese university teachers' views and practices. In B. Arnbjörnsdóttir, B. Bédi, L. Bradley, K. Friðriksdóttir, H. Garðarsdóttir, S. Thouësny, & M. J. Whelpton (Eds.), *Intelligent*

CALL, granular systems and learner data: Short papers from EUROCALL 2022 (1st ed., pp. 308–314). Research-publishing.net. https://doi.org/10.14705/rpnet.2022.61.1476

Olivas, M., & Li, C. (2006). Understanding stressors of international students in higher education: What college counselors and personnel need to know. *Journal of Instructional Psychology, 33*(3), 217–222. https://www.proquest.com/scholarly-journals/understanding-stressors-international-students/docview/213904809/se-2?accountid=14068

Olkhovska, A., & Frolova, I. (2020). Using machine translation engines in the classroom: A survey of translation students' performance. *Advanced Education*, *7*(15), 47–55. https://doi.org/10.20535/2410-8286.197812

O'Neill, E. M. (2013). Online translator usage in foreign language writing. *Dimension*, *11*(1), 74–88. https://files.eric.ed.gov/fulltext/EJ1211306.pdf

O'Neill, E. M. (2014). Real-life technology and the L2 French classroom: Online translation usage among intermediate French students. *Selected Proceedings of the AATF Convention 5*, 36–42. https://www.researchgate.net/publication/331306272

O'Neill, E. M. (2016). Measuring the impact of online translation on FL writing scores. *IALLT Journal of Language Learning Technologies*, *46*(2), 1–39. https://doi.org/10.17161/iallt.v46i2.8560

O'Neill, E. M. (2019). Training students to use online translators and dictionaries: The impact on second language writing scores. *International Journal of Research*

Studies in Language Learning, *8*(2), 47–65. https://doi.org/10.5861/ijrsll.2019.4002

OpenAI. (2022, November 30). Introducing ChatGPT. Retrieved November 25, 2023, from https://openai.com/blog/chatgpt

Pellet, S., & Myers, L. (2022). What's wrong with "What is your name?" > "Quel est votre nom?": Teaching responsible use of MT through discursive competence and metalanguage awareness. *L2 Journal*, *14*(1), 166–194. https://doi.org/10.5070/L214151739

Pennycook, A. (2019). From translanguaging to translingual activism. In D. Macedo (Ed.), *Decolonizing Foreign Language Education* (1st ed., pp. 169–185). Routledge.

Powell, N., Baldwin, J., & Manning, J. (2022). Graduate STEM student perspectives and implementation of machine translators in South Korea. *International Journal of Technology in Education and Science*, *6*(2), 237–253. https://doi.org/10.46328/ijtes.322

Privitera, G. J., & Ahlgrim-Delzell, L. (2019). *Research methods for education.* SAGE Publications, Inc.

Ribeiro, S., & Cunha, S. (2015). Language tools: Communicating in today's world of business. *Teaching English with Technology*, *15*(2), 67–80. https://tewtjournal.org/download/6-language-tools-communicating-in-todays-world-of-business-by-sandra-ribeiro-suzana-cunha-and-manuel-moreira-da-silva/

Rohmana, W. I. M., Kamal, S., Amani, N., & As-Samawi, T. A. (2023). Academic dishonesty in online English as a Foreign Language classroom. *EnJourMe*

(English Journal of Merdeka): Culture, Language, and Teaching of English, *7*(2), 230–240. https://doi.org/10.26905/enjourme.v7i2.8827

Ryu, J., Kim, Y. A., Park, S., Eum, S., Chun, S., & Yang, S. (2022). Exploring foreign language students' perceptions of the guided use of machine translation (GUMT) model for Korean writing. *L2 Journal*, *14*(1), 136–165. https://doi.org/10.5070/L214151759

Saldaña, J. (2009). *The coding manual for qualitative researchers.* SAGE Publications, Inc.

Saleh Mahdy Mohammed, O. S. M. M., Samad, S. S., & Mahdi, H. S. (2020). The attitudes of professional translators and translation students towards computer-assisted translation tools in Yemen. *Dil ve Dilbilimi Çalışmaları Dergisi*, *16*(2), 1084–1095. https://doi.org/10.17263/jlls.759371

Seidman, I. (2005). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). Teachers College Press.

Shei, C. -C. (2002). Teaching MT through pre-editing: Three case studies. *Proceedings of the 6th EAMT Workshop on Teaching Machine Translation*, 89−98.

Somers, H., Gaspari, F., & Niño, A. (2006). Detecting inappropriate use of free online machine translation by language students. *11th Annual Conference of the European Association for Machine Translation–Proceedings*, 41−48. https://aclanthology.org/2006.eamt-1.6.pdf

Stapleton, P., & Leung Ka Kin, B. (2019). Assessing the accuracy and teachers' impressions of Google Translate: A study of primary L2 writers in Hong Kong.

English for Specific Purposes, *56*, 18–34. https://doi.org/10.1016/j.esp.2019.07.001

Sukkhwan, A. (2014). *Use of Google Translate- A survey of Songkhla Rajabhat University students* [Thesis]. https://kb.psu.ac.th/psukb/bitstream/2010/9459/1/387714.pdf

Tilley, S. A. (2003). "Challenging" research practices: Turning a critical lens on the work of transcription. *Qualitative Inquiry, 9*(5), 750–773. https://doi.org/10.1177/1077800403255296

Tongpoon-Patanasorn, A., & Griffith, K. (2020). *Google Translate and translation quality: A case of translating academic abstracts from Thai to English*. *60*, 134–163.

Tourmen, C., & Hoffmann, D. (2022). A "hands-on" approach to raise awareness of technologies: A pilot class and its lessons. *L2 Journal*, *14*(1). https://doi.org/10.5070/L214151734

Tsai, S. -C. (2019). Using google translate in EFL drafts: A preliminary investigation. *Computer Assisted Language Learning*, *32*(5–6), 510–526. https://doi.org/10.1080/09588221.2018.1527361

Tsai, S. -C. (2022). Chinese students' perceptions of using Google Translate as a translingual CALL tool in EFL writing. *Computer Assisted Language Learning*, *35*(5–6), 1250–1272. https://doi.org/10.1080/09588221.2020.1799412

Tsang, E. (2013). The quest for higher education by the Chinese middle class: Retrenching social mobility? *Higher Education (00181560), 66*(6), 653–668. https://doi.org/10.1007/s10734-013-9627-7

Urlaub, P., & Dessein, E. (2022a). From disrupted classrooms to human-machine collaboration? The pocket calculator, Google Translate, and the future of language education. *L2 Journal*, *14*(1), 45–59. https://doi.org/10.5070/L214151790

Urlaub, P., & Dessein, E. (2022b). Machine translation and foreign language education. *Frontiers in Artificial Intelligence*, *5*. https://doi.org/10.3389/frai.2022.936111

Valijärvi, R. -L., & Tarsoly, E. (2019). Language students as critical users of Google Translate: Pitfalls and possibilities. *Practitioner Research in Higher Education Journal*, *12*(1), 61–74. https://files-eric-ed-gov.jerome.stjohns.edu/fulltext/EJ1212983.pdf

van Manen, M. (2016). *Researching lived experience: Human science for an action sensitive pedagogy* (2nd ed.). Routledge. (Original work published 1997)

Vinall, K., & Hellmich, E. (2022). Do you speak translate?: Reflections on the nature and role of translation. *L2 Journal*, *14*(1). https://doi.org/10.5070/L214156150

Vogel, S., Ascenzi-Moreno, L., & García, O. (2018). An expanded view of translanguaging: Leveraging the dynamic interactions between a young multilingual writer and machine translation software. In J. Choi & S. Ollerhead (Eds.), *Pluralingualism in teaching and learning: Complexities across contexts* (1st ed., pp. 89–106). Routledge. https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1494&context=gc_pubs

Williams, L. (2006). Web-based machine translation as a tool for promoting electronic literacy and language awareness. *Foreign Language Annals*, *39*(4), 565–578. https://doi.org/10.1111/j.1944-9720.2006.tb02276.x

Xu, J. (2022). Proficiency and the use of machine translation: A case study of four Japanese learners. *L2 Journal*, *14*(1), 77–104. https://doi.org/10.5070/L214151328

Xu, M., & Wang, C. (2011). Translation students' use and evaluation of online resources for Chinese-English translation at the word level. *Translation and Interpreting Studies*, *6*(1), 62–86. https://doi.org/10.1075/tis.6.1.04xu

Zhang, H. (2022). Training in machine translation post-editing for foreign language students. *Language Learning & Technology*, *26*(1), 1–17. http://hdl.handle.net/10125/73466

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