The Need to Use Translation Software in the Classroom: Perception of Chinese International Engineering College Students in Language Learning

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

This study aims to analyze students' perception and usage of translation software for language learning. A survey questionnaire was administered to International Engineering College students to gather data on their attitudes, reasons, and experiences related to using translation software. The findings reveal that a significant number of students agree to strongly agree with the use of translation software in various language learning contexts, such as translating simple sentences, long paragraphs, unfamiliar words, and during English classes. The majority of students perceive translation software as a valuable tool for improving language skills and facilitating communication with foreign teachers. However, some students also express dissenting opinions, suggesting that

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translation software may not be the optimal method for learning and improving English proficiency. The discussion highlights the benefits and limitations of translation software, as well as the need for a balanced approach to its usage. While translation software can be a helpful resource in specific language learning tasks, it should not replace authentic language input and independent learning. The findings emphasize the importance of integrating translation software into language learning curricula and providing guidance to students on effective and critical use. This study contributes to the understanding of students' perceptions of translation software and provides insights for educators and learners on maximizing its potential for language learning.

1. INTRODUCTION

With the development of globalization, international exchanges and cooperation have become more frequent and closer. More people start learning a foreign language in order to adapt the change of society. As English is the most important common language in today's globalized world, the importance of English cannot be denied or ignored [1]. For International Engineering College students, English is not only the language of instruction for most of the courses, but also an indispensable learning bridge, because many professional courses are written in English, which means English learning is much more important. Moreover, second language learners still have difficulties in learning English as a tool to understand other courses [2] and in listening to lectures in English.

For this kind of language learning problem, there are many ways to help students learn better, such as listening to English songs and watching English movies. In the era of "Internet + education", college students' information technology and learning styles have become inseparable [3]. Translation is one of the most common and important methods of learning languages and learners at every level find translating very helpful [4]. These days, a variety of translation technologies have been developed to assist professionals and learners alike in improving their performance in producing high-quality translations. These technologies are now widely integrated into translation programs in various universities, institutes, and training centers worldwide due to their usefulness and reliability in improving the performance of professionals and learners alike in the delivery of reliable and professional translation services [5]. The extent and effectiveness of translation software in language learning and teaching have always been an ongoing heated issue.

Although most language educators are adamantly opposed to the use of translation software in language classrooms, translation has been largely disregarded as a legitimate activity for language practice and improvement. However, this viewpoint is beginning to change [6]. Mobile devices have the potential to positively impact classroom activities related to translation, and their systematic integration into the curriculum as one of the tools supporting the development of technological competence is necessary [7]. Niu & Yang, 2022 believe that translation software is a crucial technical means of overcoming language barriers.

The use of translation software can be like a double-edge sword. On the one hand, it can improve students' learning efficiency and provide convenience and accuracy for finding new words and translation. On the other hand, the effect of translation software on improving language ability is limited, it can only provide basic language conversion, and cannot replace the role of human teachers. At the same time, it sometimes has translation errors and makes students lazy to think and reduces their independent learning ability. Therefore, the way translation software is used is of great significance and students need to look critically at the application of translation software. For example, in English classes, students should focus on classroom learning and improve their English listening skills instead of using direct translations on mobile phones. Students should first try to understand the meaning of a word or a sentence when encountering an article that is difficult to understand and not relying too much on translation software. English learners must memorize the unfamiliar words and review them regularly after using translation software to look up English words. However, one of the most important things that English learners need to remember is that English translation software is only a learning tool, students must study carefully and hard if students want to improve English

ability. Therefore, it is necessary to study the need for using translation software in class and use of translation software among students in international colleges, so as to better help English teaching and students' development.

1.1 Research Questions

The purpose of this study is to analyze the perception of students in the use of translation software toward language learning. Particularly the study seeks to answer the following questions:

1. What is the perception of students in the use of translation software toward language learning?
2. Why do college students need to use translation software in language learning?
3. How do college students use translation software in language learning?

2. LITERATURE REVIEW

Nowadays, more students are choosing to use translation software to learn a second language, and translation software has demonstrated many advantages to improve students' level in langauge. According to Klimova and Polakova [8], the majority of study participants were conversant with machine translation (MT) programs, including DeepL (62%) and Google Translator (GT) (100%), among others (50%). Among students, Google Translator is the most often used app (87.5%), with DeepL coming in second (25%). Furthermore, DeepL offers distinct synonyms while translating (31%) and is more accurate (69%) than Google Translate. These are the other two primary distinctions between the two programs. It was also observed that DeepL translates difficult texts more comprehensibly and gives a greater variety of verb forms. These results indicate that college students not only have a high demand for translation software, but also can flexibly and critically use this software.

Translation software also plays an outstanding role in correcting student errors. In the study of Kol et al. [9], students completed an awareness assignment to gauge their knowledge of GT errors and a correction task to gauge their proficiency in fixing the errors found. Awareness and correction tasks revealed that intermediate students found 54% of the faults, whereas advanced students found 73% and fixed 87% of the mistakes. However, we must also acknowledge the limitations of translation software. It would be naive to believe that MT can be depended upon without some degree of post-editing with regard to both contextual and colloquial appropriateness as well as residual lexical and grammatical problems, even with its importance and prominence in the translation market. As Liu et al. [10] point out, Lafeber's research suggests that MT proficiency is not a prerequisite for employment at intergovernmental organizations for translators.

Translation software is not just about using it alone to achieve the expected learning outcomes, but requires us to understand and apply it in order for translation software to play its maximum role. According to Urlaub and Dessein [11], because this repair-oriented approach steers learners toward meaning-based repair techniques rather than grammar-based ones, these interactional patterns are generally regarded as extremely successful for language learners. To make MT technologies as effective as possible in educational settings, they need to interact meaningfully with students. The output should give the learners options to critically analyze rather than a single translation that they must accept. This will allow the learners to participate in a collaborative human-machine process of meaningful negotiation.

Significant shifts in perceptions of translation as a career and an academic field have occurred in recent decades. Re-evaluating the function of translation in language instruction is necessary in light of current discoveries, especially in the field of professional translator training. Nowadays, the majority of translation efforts are computer mediated, and this intricate process is thought of as human–computer interaction. This shift in professional practice and training has led to a technology paradigm in translation [12]. Thus, translation is now inextricably linked to the actual computer, translation technology, online tools and resources, and the connectivity that the Internet offers [13]. Additionally, learners themselves have not stopped employing translation as a tactic in the process of learning a language and developing the ability to comprehend context in another language while utilizing their primary language as the foundation for understanding it. This procedure is comparable to the work translators do in trying to build rapport with speakers of foreign languages and cultures [14]. The use of translation software has become essential for everyone learning a foreign language nowadays.

Foreign language learning involves developing proficiency across many domains, including vocabulary, grammar, listening, speaking, reading, writing, and translation. Translation software tools have been developed to support learning in each of these areas and can be a great help for language learning, as it offers a variety of tools and features to help learners practice and learn a new language.

For vocabulary and grammar acquisition, dictionary software such as YouDao Dictionary provides essential functions. It allows learners to easily look up word translations, definitions, and example sentences to aid understanding [15]. Many digital dictionaries also include audio pronunciations, images, and other multimedia supports to enhance memorization and context for new terminology.

Reading, writing, and translation training have benefited from gamified learning platforms. Duolingo is one example of a popular app that frames literacy development as a game-like challenge. Learners progress through levels by demonstrating growing reading fluency, writing accuracy, and translation abilities [15]. The game mechanics and continuous assessment keep users engaged over longer practice periods.

Translation software can also be classified according to technical standards, application domains, and operating platforms. Machine translation tools including Google Translate provide automated text translation at a basic level for a wide array of languages [16] like specialized dictionaries serve medical, legal, scientific, and other professional fields with terminology relevant to those work contexts. Translation programs are available both as desktop applications, and via mobile-based apps such as YouDao Dictionary [15,16].

As electronic resources have proliferated, foreign language learners now favor online tools over traditional materials due to improved access and efficiency [15]. Google Translate alone translates over 100 billion words per day, benefiting learners globally [16]. Translation apps also aid teachers in communicating with students from diverse linguistic backgrounds, facilitating relationship-building and bilingual education support [17].

In cognizant, translation software fills important educational niches for vocabulary, grammar, listening, speaking, reading, writing, and translation instruction. They provide standardized, specialized, and mobile-friendly resources to vast user communities. With the rapid development of new technologies, translation tools will likely continue enhancing language education through higher accuracy, additional features, and broader availability. Overall, translation applications represent a valuable supplement to traditional foreign language learning methods.

3. METHODOLOGY

3.1 Research Design

The study design used in this analysis was quantitative-descriptive. The study is classified as quantitative since its goal was to evaluate or quantify the variables taken into consideration in this particular investigation [18]. Furthermore, the study is classified as descriptive since it sought to ascertain the current state of a phenomenon or phenomena [19], pertinent to the investigation that bolstered the goal of determining the respondents' perceptions regarding the application of translation to language learning. Additionally, the study's procedures for gathering, tabulating, analyzing, and describing data support its classification as a descriptive form of research [20], (Rillo & Alieto, 2018). Furthermore, because the study is targeted at certain population members, it is recognized as being population-based [21].

3.2 Research Instrument

A questionnaire was created specifically for this study in order to collect data. The meticulously crafted questionnaire-checklist items were developed by the researcher using the body of current literature as a guide. The statements were changed to better meet the study's goals. The instrument was validated to make sure it was accurate and relevant. The research tool was improved further after consulting with specialists. Every recommendation and modification was taken into account. Items that were determined to be irrelevant were removed from the instrument, and those that were deemed unclear were changed in accordance with the recommendations.

3.3 Validity and Reliability

The concerns of the study and the research literature were taken into consideration when creating the survey questionnaire. The prepared survey questionnaire was given to experts who

independently verified its content in terms of relevance, suitability, and appropriateness to the research problems in order to ensure the validity of the instrument. After combining the expert recommendations, the research instrument was put through reliability testing. To guarantee that the most accurate data would be collected, the researchers took care to ensure that the participants were unaware of the study's intended outcome. about the perception and translation software as variables, the study focuses on engineering college students' perceptions, justifications, and practices about the usage of translation software for language acquisition. The questionnaire underwent pilot testing in order to assess its dependability as a research tool. After giving the survey to a subset of engineering students, the researcher ran the data using Cronbach Alpha analysis. A coefficient of 0.85, or "Good," was found, indicating the results. As a result, the tool is regarded as trustworthy for addressing the study's issues.

3.4 Data Collection and Coding Procedure

In order to gather the perspectives of engineering students in Xi'an, Shaanxi, China regarding attitudes (5 items), needs (5 items), reasons (5 items), and behaviors (5 items) related to using translation software for language learning, an online survey consisting of 20 statements was created. These students were contacted via an online platform called QQdocs, which is a handy survey tool. WeChat, the most widely used social media app in China, was used to share the created link with the students. I personally forwarded the URL to the researchers' contact list as well. Pupils were asked to freely take part in the research. A pilot test was done with twenty engineering students before the final conduct of the online survey. The online survey was done for the duration of one week (October 29 to November 6, 2023). A total number of two hundred eighty-six (286) engineering students who are currently enrolled in International Engineering College, Xi'an University of Technology situated in Xi'an, Shaanxi, China are the sample size in this study and responses were analyzed using descriptive statistics specifically the mean percentage. The gathered data from the research tools were coded to enable analysis through a statistical program. The results were described using an adapted 4-point Likert scale presented as follows: 3.5-4.00 Strongly Agree (4), 2.5-3.49 Agree (3), 1.5-2.49 Disagree (2), 1.0-1.49 Strongly Disagree (1), while the

responses for items with negative statements were reversely coded.

Ethical guidelines were closely followed when conducting the study. There isn't any conflict of interest, and the researchers have no desire to sway the study's findings. Additionally, participant comments and information were kept private and confidential. Since all of the respondents are college students pursuing engineering degrees at universities, the research did not include any vulnerable study populations. The aforementioned responders are capable of giving consent. There is no expectation of payment for taking part in the study; participation is entirely voluntary. The online platform used for the study allowed respondents to complete the questionnaire at their convenience. Additionally, the researchers make sure that participants are free to discuss any topic they like, decline to answer any questions or items, or even decline to complete the questionnaire altogether. Furthermore, the researchers ensure that the participant will have access to the study's outcomes and will have the opportunity to obtain the data upon request.

4. RESULTS AND DISCUSSION

The responses were descriptively treated using frequency, percentages, and mean to determine students' perception in the use of translation software toward language learning. A scale computed with the same intervals was created and used as the basis for the description of the mean scores. The following tables present the analysis:

4.1 Learners' Perception in the Use of Translation Software toward Language Learning

1. What is the perception of students in the use of translation toward language learning?

Table 1 presents the perception of students in translation software. The majority of students express confidence in the reliability and accuracy of translations provided by translation software, with positive responses reaching 57.69% and 59.79% in that order. Impressively, about 45.8% of students consider the use of translation software as an indispensable tool for enhancing their English language learning experience. A notable portion of students (33.22%) holds the perspective that translation software may not be the optimal method for language learning.

Despite this, the average score of responses suggests a positive attitude among students with the translation software, particularly regarding the reliability and accuracy of translations. This indicates a prevailing sentiment of contentment with the overall performance of the translation software.

A noteworthy discovery arising from this study is the widespread acknowledgment among respondents that translation software serves as a valuable aid in language learning. This aligns with González-Davies' [22] assertion that the use of translation does not hinder language acquisition; instead, it fosters the development of multi-componential knowledge and various cognitive, meta-cognitive, and socio-affective learning strategies. This assertion resonates with our findings, emphasizing a positive correlation between translation software utilization and language learning.

The result in Table 1.a shows that 40.21% of students agree that they need to use translation software to talk to foreign teachers, only 6.99% of students think they can talk to foreign teachers without translation software. There are 30.07% of

students feels confident with their English sentences without translation software. Almost half of students agree that they need to use translation software to explain in English to foreign teachers, accounting for 49.3% of students, but 4.55% students strongly disagree about this statement. A great number of students disagree that they don't need translation software to improve their English Language with 45.1%. When students write their essay, over half of students accounting for 53.85% agree they need the help form the translation software, only 5.24% students strongly disagree about using translation software.

According to the results above, most students find it difficult to stop using translation software when studying English, particularly when writing and speaking. This outcome validates Almusharraf & Bailey's [23] investigation. Students from Saudi Arabia and Korea reported that translation tools were user-friendly and beneficial for language learning. When learning English, students routinely use machine translation technologies, and they want to do so in the future. The use of translation software is essential for learning foreign languages [24].

Table 1. Responses per Item on Learners' Perception

Statements	SA	A	D	SD	M	D
Translation is always reliable.	72 (25.17%)	165 (57.69%)	32 (11.19%)	17 (5.94%)	3.02	A
Translation is always accurate.	55 (19.23%)	171 (59.79%)	43 (15.03%)	17 (5.94%)	2.92	A
Translation is a must in learning language.	110 (38.46%)	131 (45.8%)	31 (10.84%)	14 (4.9%)	3.18	A
Translation helps students learn English language better.	116 (40.56%)	136 (47.55%)	19 (6.64%)	15 (5.24%)	3.23	A
Translation is the best way to learn language.	58 (20.28%)	103 (36.01%)	95 (33.22%)	30 (10.49%)	2.66	A

Scale: 3.25-4.00– Strongly Agree (SA) 2.50-3.24 – Agree (A) 1.75-2.49 – Disagree (D) 1.00-1.74 – Strongly Disagree (SD)

Table 1a. Responses per Item on the need to use translation software

Statements	SA	A	D	SD	M	D
I need to use translation software to talk to foreign teachers.	68 (23.78%)	115 (40.21%)	83 (29.02%)	20 (6.99%)	2.81	A
I am confident with my English sentences even without using translation software.	45 (15.73%)	86 (30.07%)	113 (39.51%)	42 (14.69%)	2.47	A
I need to use translation software to explain in English to foreign teachers.	83 (29.02%)	141 (49.3%)	49 (17.13%)	13 (4.55%)	3.03	A
I don't need translation software to improve my English Language.	41 (14.34%)	58 (20.28%)	129 (45.1%)	58 (20.28%)	2.29	A
I need the translation software to finish essay writing and report writing in English.	71 (24.83%)	154 (53.85%)	46 (16.08%)	15 (5.24%)	2.98	A

Scale: 3.25-4.00– Strongly Agree (SA) 2.50-3.24 – Agree (A) 1.75-2.49 – Disagree (D) 1.00-1.74 – Strongly Disagree (SD)

4.2 Reasons for Using Translation Software

2. Why do college students need to use translation in language learning?

The result in Table 2 presents that students in IEC agree that translation software can make it easier to learn English language with positive responses reaching 51.75%, while only 5.24% of students strongly disagree. With a mean of 3.28, almost half of students agree that translation is able to help them better understand the meaning of the sentences. At the same time, the perspectives that translation can provide simple help for students to write sentences, and enhance their confidence in language learning are in agreement, with a mean score of 3.09. Additionally, there are 48.95% of students agreeing that translation can offer a more convenient way for them to read and comprehend long paragraphs. In general, the average score of 3.17 suggests a universal agreement among students with the use of translation software in language learning,

particularly for understanding the meaning of sentences and long paragraphs. This indicates the reasons for students using translation focus on the convenience and easiness of understanding temporary language problems. This result was consistent with the statement of Omar et al. [5], that this technological shift has a beneficial impact on students' motivation to pursue faster and more accurate translations of languages. In a single click, students can access and process vast amount of information without taking out the paper and consulting a heavy dictionary. This assertion resonates with our findings, pointing out that it is more convenient for students to use translation software to learn English conveniently in every regard.

4.3 Using Translation Software

3. How do college students use translation in language learning?

The result in Table 3 shows that Students agree that they use translation software in simple

Table 2. Responses per Item on Reasons

Statements	SA	A	D	SD	M	D
Translation can help students better understand the meaning of the sentence.	119 (41.61%)	141 (49.3%)	14 (4.9%)	12 (4.2%)	3.28	SA
Translation makes it easier for students to read long paragraphs/texts.	110 (38.46%)	140 (48.95%)	23 (8.04%)	13 (4.55%)	3.21	A
Translation helps students to write sentences.	98 (34.27%)	133 (46.5%)	37 (12.94%)	18 (6.29%)	3.09	A
Translation gives confidence to students in learning language.	92 (32.17%)	141 (49.3%)	39 (13.64%)	14 (4.9%)	3.09	A
It is easy to learn English language with translation.	101 (35.31%)	148 (51.75%)	22 (7.69%)	15 (5.24%)	3.17	A

Scale: 3.25-4.00– Strongly Agree (SA) 2.50-3.24 – Agree (A) 1.75-2.49 – Disagree (D) 1.00-1.74 – Strongly Disagree

Table 3. Responses per item on usage

Statements	SA	A	D	SD	M	D
Students use translation in simple sentences.	70 (24.48%)	103 (36.01%)	82 (28.67%)	31 (10.84%)	2.74	A
Students use translation in long paragraphs.	108 (37.76%)	132 (46.15%)	29 (10.14%)	17 (5.94%)	3.16	A
Students use translation to unfamiliar or new words.	143 (50%)	122 (42.66%)	11 (3.85%)	10 (3.5%)	3.39	SA
Students use translation in every English class.	69 (24.13%)	122 (42.66%)	70 (24.48%)	25 (8.74%)	2.82	A
Students take pictures of an English text and use translation.	85 (29.72%)	131 (45.8%)	47 (16.43%)	23 (8.04%)	2.97	A

Scale: 3.25-4.00– Strongly Agree (SA) 2.50-3.24 – Agree (A) 1.75-2.49 – Disagree (D) 1.00-1.74 – Strongly Disagree (SD)

sentences and long paragraphs with a mean of 2.74 and 3.16 respectively. With the mean score of 3.39, students strongly agree that they use translation to unfamiliar or new words. Students agree that they use translation in every English class with 42.66, contrary to 8.74% of students strongly disagree on the statement. A total of 45.8% of students agree that they take pictures of an English text and use translation to understand the concept. The result is similar to other study, according to Xu & Wang [15], translation allows learners to easily look up word translations, definitions, and example sentences to aid understanding. The similarity suggests that most of students use translation when they meet some difficulty. The translation help English learners understand new words and the meaning of sentences.

5. CONCLUSION

This study set out to most students needing the support of translation software in the communication process with foreign teachers, classwork, and at the same time, to improve their foreign language proficiency. In the survey on perception with translation software, students highly agree with the accuracy, reliability and necessity of translation software, while also recognizing that long-term use of translation software is not an effective way to improve foreign language proficiency. At the same time, in terms of using translation software, students generally believe that translation software can better assist them in foreign language learning and deepen their understanding and application of knowledge.

Through the survey, it has been found that students are still in a state of high demand and recognition for translation software, and cannot leave its assistance in the process of foreign language learning. In daily learning, it does help students better understand difficult texts and promote their daily communication with foreign teachers. This study has identified translation software has become an indispensable part of students' learning.

Translation software is certainly user-friendly and convenient in the learning process, but we should still consider whether we can still rely on its help in continuous and in-depth learning. At the same time, translation software may develop more suitable software for different types of people's learning needs under continuous updates and iterations in the future. In essence, the role of translation software in supporting students' English language learning endeavors is seen as largely positive. However, there remains an opportunity for refinement and optimization. Educational institutions and schools can leverage these insights to enhance the overall user experience of translation software, thereby contributing to more effective language learning outcomes.

CONSENT

As per international standards or university standard, Participants' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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