

Developing Translation Competence of Undergraduate Translation Students under Computer-aided Translation Technology

Ruichao Li¹, Abdullah Mohd Nawi²

¹Language Academy

Universiti Teknologi Malaysia

Johor Bahru, Malaysia

¹School of Translation Studies, Xi'an Fanyi University

Xi'an, China

liruichao@graduate.utm.my,

²Language Academy

Universiti Teknologi Malaysia

Johor Bahru, Malaysia

abdullahmnawi@utm.my

Abstract—College students who major in translation often face psychological and physiological challenges that affect their learning experience. They have a particular interest in learning translation, but their level is not high; their enthusiasm for translation learning is not high, and they lack confidence. This paper divided them into control and experimental groups comprising 50 students. Before introducing computer-aided translation (CAT), students in both groups were given the same basic training, including language, translation theory, and professional knowledge, thus ensuring that both groups had similar essential competencies. The experimental group introduced CAT and provided them with the necessary training and guidance to ensure their complete understanding and familiarity with CAT technology. Regular translation tests were conducted on two groups of students, mainly examining their performance in vocabulary translation, grammar translation, and discourse cohesion. Meanwhile, feedback and discussion with the experimental group of students can help them improve the quality of their translations. Before the introduction of CAT technology, 25% of vocabulary omissions occurred, while after the introduction of CAT technology, 7% of vocabulary omissions occurred. This article contributed to the cultivation of translation competencies of undergraduate translation students.

Keywords- computer-aided translation technology; translation competence; translation testing; undergraduate translation students

I. INTRODUCTION

Translation competence is a new educational concept in the contemporary world. The study of the composition of translation competence mainly involves the constituent elements and developmental level of translation competence, directly or indirectly impacting curriculum design, teaching arrangement, and translation teaching evaluation. By connecting the relationship between them, considering the advantages of various aspects, and adopting CAT technology, this article proved the feasibility of doing so from both practical and innovative perspectives. The paper used it as a theoretical basis and logical main line.

To provide translation professionals with a clear direction, it is essential to understand the needs of translation students, their language proficiency, and the requirements of the translation profession. Without a clear goal, they may not know how to achieve it or whether they can achieve it after completing some specific tasks. Saud Wafa Ismail aimed to investigate the critical thinking ability of translation undergraduates and explore the relationship between their critical thinking skills and translation achievements [1]. Modarresi Ghasem's research aimed to develop and validate scales for translation participation and examine their relationship with students' translation competence [2]. Su Li believed cultural factors should be considered in the

context of China, and the same applies to translation teaching [3]. Based on the existing research, different researchers have provided detailed explanations of the components of translation competence from their angles and have a complete system and a detailed classification. However, most remain at the theoretical level and cannot directly assist in cultivating the translation competence of translation students.

Translation teaching should be targeted and practical as essential to applied translation studies. Therefore, higher education institutions must better grasp the teaching focus in cultivating the translation competence of translation students. The goal of translation teaching is to produce high-quality translators the translation market requires, so more attention should be paid to translation students' actual situations and needs in the translation teaching process. Every student has different abilities and needs, and the specific analysis needs to be conducted based on different conditions. Although a clear conclusion has not been reached, many similarities exist among undergraduate translation students. This article researched the current translation teaching mode in-depth. It proposed corresponding solutions to the problems, which were presented by combining quantitative and qualitative approaches and macro and micro methods, and the problems presented finally. Based on the established translation competence model, a teaching improvement plan was designed to solve the problems in real

translation teaching. Finally, the theory of skillful translation teaching was returned to integrate it closely with the components of translation competence.

II. METHODS FOR CULTIVATING TRANSLATION COMPETENCE

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CAT Technology

With modern educational technology's continuous innovation and development, translation teaching methods are becoming increasingly diverse. Multimedia, network, and corpus technology are increasingly being applied to translation classrooms, which can enrich the content of translation classrooms and change the previous single approach of "blackboard+chalk+textbooks" [4]. CAT technology allows students to gain a more intuitive experience during translation teaching. The multimedia network system integrates multiple methods, such as texts, sounds, images, and videos, into actual translation teaching with technology development. Knowledge is expressed in static (visual) and dynamic (auditory), providing translation students with more experiences and facilitating communication between teachers and students in the context of translation teaching. Due to the rich amount of information and authentic corpus in online corpora, they have strong operability and convenience in retrieval while they can revolutionize traditional foreign language teaching methods [5-6]. Corpus provides many examples with practical contextual meanings, which help learners understand and construct relevant knowledge through examples. It can be said that in this teaching and learning process, due to the adoption of modern educational technology, significant changes have occurred in both methods, significantly improving teaching efficiency [7].

In the classroom, the role of a teacher is to stimulate students' confidence, cultivate their imagination, and serve as the basis for them to ask questions. In translation classrooms, the focus is not on correcting errors; at the same time, they can fully feel how to apply translation skills and strategies in translation practice. While translation students revise and improve their translation techniques, they also broaden their horizons and thinking, improving their translation skills [8].

Translation Competence

Informatization has penetrated all aspects of people's lives, including improving translation students' translation skills. In today's translation industry, as a translator, one must possess language, culture, interpersonal skills, and qualities in word processing. Translation memory tools, terminology software, the internet, and other tools can improve translation efficiency in actual translation settings. Abundant online translation teaching resources provide translation students with learning materials. For translation learners, the frequent use of such textbooks can improve their bilingual proficiency, build personalized vocabulary libraries, and broaden their knowledge. With the help of the internet, many authentic texts can be obtained and used as translation learning materials for translation training [9].

At the same time, it can also bring translation students into real translation situations, making them feel the importance of context in translation and providing a basis for the correct selection and expression of meanings. Regarding translation competence training, formulas written with letters or symbols may not be suitable for accurately describing problems. However, concepts and relationships related to the cultivation of translation competence can be represented through variables and symbols.

The formula for improving translation skills is [10]:

$$FJ = L + P + K \quad (1)$$

L represents language comprehension ability, P represents practical translation experience, and K represents professional knowledge [11].

Translation efficiency FX is:

$$FX = O/T \quad (2)$$

Formula (2) indicates that translation efficiency is the number of completed translation tasks O divided by the required time T [12].

The term management formula is:

$$SG = (C/SL) \times 100 \quad (3)$$

Formula (3) indicates that term management ability SG is the ratio of correctly used terms C to the number of terms SL appearing in the total translation multiplied by 100.

The evaluation formula for translation quality pg is:

$$pg = A - E \quad (4)$$

Formula (4) indicates that translation quality is the result of subtracting the required editing workload E from the evaluation score A of the indicator. In the current translation market, there is a need for high-quality translation talents, which can provide some thinking for establishing university translation majors and promoting the reform of translation programs at universities [13].

Establishing a Translation Teaching Evaluation System

No nationally recognized translation competence exam is suitable for undergraduate translation students. Therefore, evaluation and feedback are very important for supervising the teaching process of translation competence cultivation [14]. A good assessment enables students to understand their knowledge and allows teachers to continuously adjust teaching methods based on evaluation and feedback from their teaching process. Without good evaluation standards, students would not be clear about the level they can achieve after studying a specific translation course [15-16]. Effective evaluation of translation students can promote a more responsible attitude towards cultivating translation skills and help teachers understand their strengths and weaknesses through objective feedback from translation students, thereby improving their translation skills and competence. At the teaching level, translation teachers can use a questionnaire survey method to collect translation students' opinions and suggestions or directly provide constructive views to them. On this basis, by analyzing the feedback information from students, teachers can have a clearer understanding of their training process and make corresponding

adjustments to their training methods and teaching materials, thereby improving training effectiveness. Regarding the educational system, the education regulatory department can include the translation scores of teachers in the teaching assessment of translation teachers when evaluating their professional titles. Meanwhile, higher education institutions would also organize translation students to rate and assess teachers' translation teaching [17].

Once translation teachers are supervised, the quality of translation teaching can be improved, thereby ensuring the quality of students' translation competence cultivation. The students' translation proficiency is tested and evaluated. On the one hand, full attention should be paid to the translation exam, as it tests the effectiveness of translation teaching and learning. A carefully designed set of test questions must include sufficient indicators to ensure the effectiveness of the test questions, which can better reflect students' learning status of the course and play a key role in effective translation teaching. However, the exam content usually includes two parts: sentences and paragraphs. These test questions do not have specific test objectives, involve fewer test knowledge points, and have low structural validity. It cannot detect the translation skills acquired by students. If this technique cannot be used in exams, then the theories and techniques involved in this technique would not be attractive to students. In this context, diversified questioning methods should be adopted in translating articles, such as translation evaluation, error correction, question and answer, translation theory, etc. At the same time, different questions can be set based on translation skills and competence to test students' mastery of them [18].

The translation exam assesses their translation level to improve their competence. Exams are not the ultimate goal but a practical way to enhance translation competence. In addition, teachers can incorporate students' performance in the translation classroom into performance assessment each semester, changing the sole evaluation method that only focuses on the final grade to control students' participation in the translation classroom and stimulate students' learning enthusiasm. Multiple subject evaluation methods can be adopted, including students' self-evaluation. This can help them recognize their translation shortcomings, encouraging them to make targeted corrections and adjustments to their learning priorities, grasp learning priorities, and improve their learning outcomes. Examining students' translation skills and competence from multiple perspectives can help improve their translation competence [19-20].

III. EASE OF USE EXPERIMENTAL PROCESS OF CULTIVATING UNDERGRADUATE STUDENTS' COMPETENCE

Setting up the experimental and control groups: A group of university undergraduates majoring in translation was divided into two groups: one for the control group and one for the experimental group. It is necessary to ensure that both groups have the same number of people (both 50) and level of ability.

Basic skills training: before CAT was introduced, the two groups of translation students were given the same basic skills training, including language, translation theory, and professional knowledge, to ensure that the two groups had similar basic skills.

CAT experiment was introduced to the experimental group, and necessary training and guidance were provided to ensure their understanding and familiarity with CAT technology and its

application. The research object of this paper can use computer translation tools such as translation memory, vocabulary, and automatic alignment to improve the efficiency and accuracy of the translation.

Translation tests were conducted on two groups of students at regular intervals. It mainly examines translation students' achievements in vocabulary translation, grammar translation, and discourse cohesion. These evaluations can be completed through specially designed translation tests or actual translation assignments.

Feedback and discussion: Feedback and discussion with the experimental class students can help them improve the quality of their translations. Based on the problems identified in the evaluation results, guidance can be provided to help students overcome such issues as vocabulary omissions, grammatical errors, or discourse coherence.

Results analysis and summary: A comprehensive analysis was conducted on the translation competence of the two groups of students, and a comparison was made between the experimental group's grades before and after CAT was introduced. The two groups' progress in lexical omission, syntax error translation, and textual coherence was obtained through comparative analysis.

In addition, to ensure the credibility of the experimental results, the other environmental conditions of the experimental and control groups should be consistent.

The 'translation competence' study in China has undergone interdisciplinary development, not limited to studying foreign languages. Although 58% of the research is based on other languages, the information it contains, such as computers, education, economics, medicine, etc., shows that the research in this field is becoming broader and more profound. The distribution of disciplines that are related to translation competence is demonstrated in Fig. 1

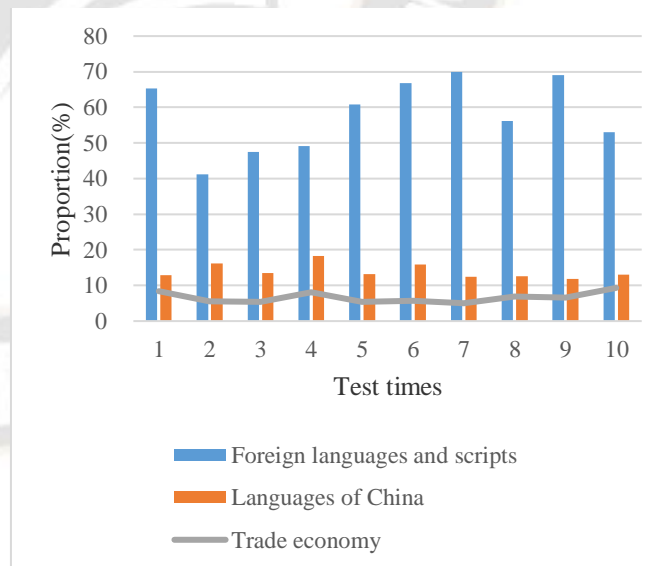


Fig. 1 Distribution of disciplines related to translation competence

Taking "translation competence" as the research object, China has successively researched "translation teaching," "translation," "college English," "teaching models," "strategies," and other aspects. The research results of overall translation competence have been extended to other fields, thus promoting the development of this field. However, there is still very little

research on “strategies” (accounting for 6%), and the proportion is uneven. The frequency of research words related to “translation competence” is shown in Fig. 2.

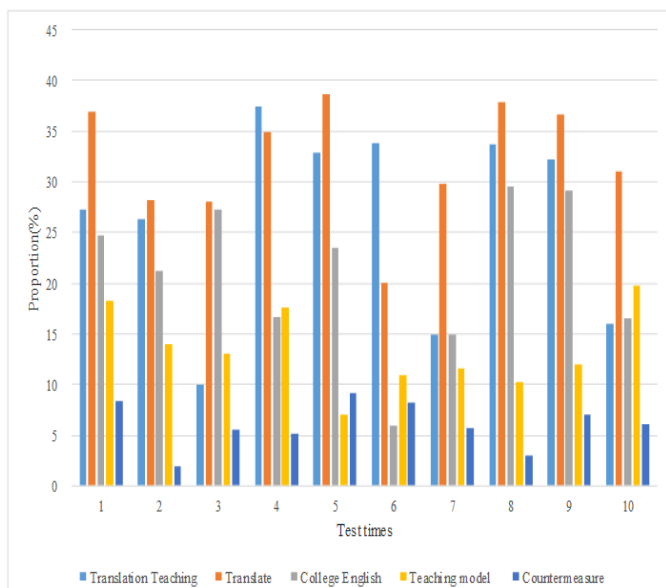


Fig. 2 Frequency of research words related to translation competence

Translation students’ understanding of translation knowledge is mainly at a static level. They only understand translation as a collection of translation units and do not realize the connection between the entire translation text. From these phenomena, the professional literacy of college students is not high, and the professional knowledge of translation is not rich enough. In translation practice, the level of language expression ability is directly related to the choice of the translation process, methods, strategies, and quality of the translation. Therefore, suppose translation students want to become professional translators in the future and adapt to the environment of the translation profession in the modern world. In that case, they not only need to acquire knowledge about language, culture, and the use of translation tools and software and CAT but also need to learn some relevant knowledge in one or two specific fields, which they are familiar with and adept at, to give full play to their strengths better in the competitive translation market in China and beyond.

Bilingual skills refer to procedural knowledge that must be possessed when communicating in two languages. The main contents are sociolinguistics, grammar, vocabulary, etc. In English and Chinese, communicative competence refers to communicating in specific contexts. In the following section, this article selected some representative indicators to analyze the problems that students encounter with bilingualism. This article conducted statistics on 10 test papers and obtained the number and proportion of various problems in the indicator. The proportion of people with typical bilingual proficiency problems is shown in Fig.3. The number of missing vocabulary translations accounted for 25%; the number of grammatical errors accounted for 29%; the number of people lacking coherence in discourse accounted for 35%.

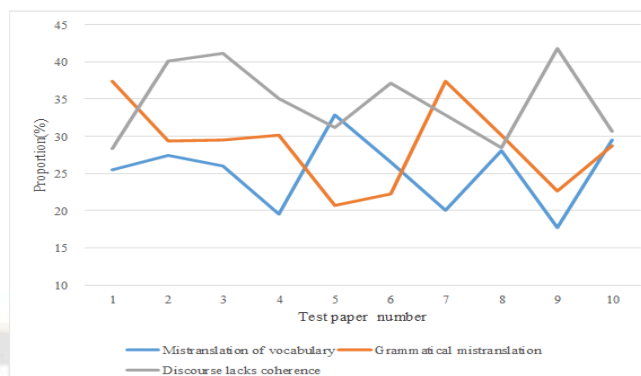


Fig. 3 The proportion of students with typical bilingual proficiency problems

In the context of economic globalization and reform and opening up, China needs more translation talents. According to the Reports on Development of the Translation and Language Service Industry in China, in 2020, the number of Chinese enterprises covering translation and language services was 581,913, and the number of translation agencies in China mainly engaged in translation and language services was 10,592. The total output value of the primary translation business exceeded 60 billion yuan for the first time, an increase of 17.2% compared with 2021, higher than the world growth rate. All these figures suggest that translation in China is a large and potential market for promoting Chinese development and disseminating Chinese culture. Therefore, China needs more translators to engage in translation services for national progress and economic development. Naturally, translation programs bear the responsibility of cultivating professional translators, and a significant task for them is to develop the translation competence of translation students to prepare them for engaging in translation circles. In translation teaching, many experts and scholars are paying attention to how to improve students’ translation competence. Improving students’ translation competence is a vital task of translation teaching, and the process is to strengthen their understanding of translation competence and the requirements that the translation market puts forward in the translation profession. The proportion of students with typical bilingual proficiency issues under CAT technology is shown in Table 1. The number of missing vocabulary translations accounted for 7%; the number of grammatical errors accounted for 6%; the number of people lacking coherence in discourse accounted for 3%.

Table 1 The proportion of students with typical bilingual proficiency problems under CAT technology

Test paper number	Mistranslation of vocabulary (%)	Grammatical mistranslation (%)	Discourse lacks coherence (%)
1	7	6	2
2	10	6	3
3	6	7	3
4	9	7	2
5	6	7	3
6	7	5	3
7	6	6	4

8	6	6	3
9	8	5	3
10	7	6	5

IV. CONCLUSION

With the social and economic development and the implementation of China’s cultural internationalization strategy, the translation market is facing an increasing number of opportunities in China while it is also placing higher demands on the quality of translators. As the main body of future translators, higher education institutions urgently need to cultivate translation students’ translation skills to adapt to society’s needs and present Chinese culture to the world in the context of China. In the translation practice, specific problems with translation students’ vocabulary, grammar, and other aspects result in an insufficient understanding of cohesion and coherence. After the CAT technology was introduced in higher education institutions, translation students’ vocabulary, grammar, and discourse coherence competence improved significantly. Although this article has shortcomings, it still explores translation major learners from theoretical and practical perspectives. At the same time, the study of translation quality is expected to be developed in the coming years in China and beyond.

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