Retraction

Retracted: A Study on the Impact of International Translation Levels Based on Multiple Correlation Analysis

Mathematical Problems in Engineering

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] W. Zheng, "A Study on the Impact of International Translation Levels Based on Multiple Correlation Analysis," *Mathematical Problems in Engineering*, vol. 2022, Article ID 9120772, 11 pages, 2022.

Hindawi

Research Article

A Study on the Impact of International Translation Levels Based on Multiple Correlation Analysis

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Since my country's accession to the World Trade Organization, the opening up of the financial industry has gradually deepened, and the banking industry has gradually developed into an international trend. In the development of international financial business, especially when banks carry out deposits and loans, international communication is a must. Indispensably, the international language of English is very important at this time. For the unique features of the language of financial English, the frequently used skills and common difficulties in Chinese-English translation are summarized in this paper, and financial English is analyzed from the aspects of laws and characteristics.

1. Introduction

Cognitive research in translation and interpretation is one of the most exciting, promising, and fastest-growing fields in translation studies. In this context, the "7th International Symposium on Translational Cognitive Research" was successfully held in Wuhan on June 11–13, 2021. The conference was jointly sponsored by the School of Foreign Languages of the Wuhan University of Technology, the Intercultural Research Center of Durham University, and the Translation and Interpretation Cognition Research Center of the University of Macau. In the process of international trade, businessmen from all over the world need to communicate, and English, as an international language, facilitates communication between them. Based on the premise of diverse international trade cultures and customs, the scientific and rational use of business English is conducive to the development of world trade and provides support for the development of trade in various countries. All countries standardize the use of business English, which is conducive to the improvement of work efficiency in international trade [1]. When negotiating, using simple and professional business English can highlight the theme more accurately, which is conducive to the pursuit of maximization of interests by both parties. During negotiation, if

translators can make good use of translation technology, it will be conducive to the success of the negotiation. Therefore, in international trade negotiations, business English translation is a very important means [2]. Not only should the advantages of business English negotiation be brought into full play but at the same time, the differences between the two parties in terms of culture, economy, and religious beliefs should also be considered practically, and business English should be used reasonably to make the negotiation proceed smoothly and orderly. Therefore, on the basis of fully considering factors such as culture and religion, as a translator, you must be able to master and apply vocabulary proficiently, thereby reducing the probability of misunderstandings and improving work efficiency. A typical feature of international trade activities is that it lasts for a long time. During this stage, the collision of ideas and cultures is inevitable [3]. During this period, as a translator, it is necessary to understand and accept other different cultures and to master the ability to communicate with different cultural backgrounds to improve the communication effect. This requires translators to have strong abilities and pay attention to the improvement of their own abilities, which is not only conducive to their own development but also promotes the success of business negotiations. With the increase in the number of business and trade contacts, it is

conducive to the improvement of its cross-cultural ability, making the two sides of the trade closer, and further promoting the translator's cross-cultural ability. Ensure the principle of consistency, in financial English translation, consistency is crucial. Accurately grasp the meaning of the original text, and then, translate it correctly. Accuracy is the principle emphasized in language translation, and how to ensure the accuracy of information must follow certain principles. For the original content, translators can perform free translation, because improper vocabulary selection makes the expression inaccurate, or the concept is inaccurate, try to do as much as possible. avoid. Follow the principle of unity of numbers and units [4].

When translating financial English, remember that there is no problem with secretly changing concepts, and at the same time, we should pay more attention to the translation of "terms" during translation, so as to ensure the accuracy of the translation. However, from the current situation, the financial English translation situation in my country is not optimistic. As for the business English translation of international trade at this stage, the research on it is relatively scattered, and few researchers have carried out research on translation theory and large paragraph translation. There is a lack of principled understanding and practical practice for financial English translation. In addition, due to the strong professionalism of its related disciplines, it is easy to make mistakes because of not fully mastering professional knowledge when translating. In the process of translation research, the theory of systemic functional linguistics is of great significance. As a translator, you must be familiar with the principles of financial translation and translate professional terminology in strict compliance. At the same time, we should also focus on improving the translation ability of textual and social functions and understand the financial system stability assessment report of the International Monetary Organization [5]. At present, the International Monetary Fund and the World Bank will evaluate the financial English translation of various departments and then publish a report in the World Fund according to the evaluation. Second, in the translation process, we must adhere to the guidance of scientific theories and embody the principles of "faithfulness, elegance, and expressiveness" in translation, so that the theory of "foreignization" can be effectively developed [6]. For business English translation in international trade, our country should pay more attention. First, we should inherit the translation theory for marine use, and second, we should pay attention to the absorption and study of the new western translation theories and principles. More importantly, it is necessary to increase the emphasis on practice, improve the practical application ability of translators, better find problems in practice, and gain better experience [7]. The translation of terms has its rigor, "ideally, a term should be well-founded, should reflect the concept accurately and unerringly, and be as self-explanatory as possible, and should eliminate ambiguity and synonymy as much as possible." Although considering the uniqueness of TCM terminology, it is difficult to achieve a one-to-one translation, and we still hope to obtain some practical data through the statistics of the diagnosis method in the

"Standard": the diagnosis method includes a total of 547 entries, which met the screening criteria; that is, there were 465 entries with "one-to-one correspondence" between the original text and the translation, accounting for 85% of the total number of diagnostic terms. Among them, there are 65 entries for "multitranslation of one word," 16 entries for "polysemy of one word," and 17 entries for "one translation of multiple words." And these three types of situations not only appear alone but some of the contents overlap [8] (as shown in Figure 1).

2. Research Background

2.1. Research Background. Since the beginning of the 21st century, multilingual research has gradually attracted attention. Multilingual research is mainly divided into two levels, one is multilingualism at the national and social level, and the other is multilingual acquisition at the individual level. Researchers in the field of multilingual acquisition have successively put forward the multilingual dynamic system theory, the role function model of multilingual acquisition, the multilingual acquisition influencing factor model, the multilingual ecological model, and the foreign language acquisition model. These five models complement each other and theoretically illustrate the cross-language impact in multilingual acquisition from different perspectives. Among them, migration and penetration between languages are the key points of attention in the study. Although the focus of the factors that affect the mutual migration and penetration between languages explained by various theories is different, they all boil down to linguistics, the internal and external aspects of individual learners. From the perspective of influencing factors, the migration and penetration between languages are studied, including language similarity, language familiarity, language learning motivation and expectation, language perception ability and pragmatic ability, and other influencing factors [4]. It is these influencing factors in the process of multilingual acquisition that makes the process of multilingual acquisition more complex and diverse. Therefore, the multilingual dynamic system theory in the multilingual acquisition theoretical model has been widely recognized. Theories are more explanatory of the complexities of multilingual acquisition, viewing language systems as constantly evolving, interdependent systems, each of which is affected by the properties of either preexisting or later-acquired language systems. The complex and dynamic multilingual acquisition system is characterized by variability and self-contradiction. No matter the learning one language, two languages, or three languages, the development process of each language is different. It is not a simple linear process but is affected by various factors, showing nonlinear characteristics. In addition, other factors such as the number of language systems, the age of the learner, language level, and language learning motivation will affect the stability of the language system; the multilingual dynamic system theory also points out that English translators or multilingual language learners, in the brain, one language competes with another for the limited
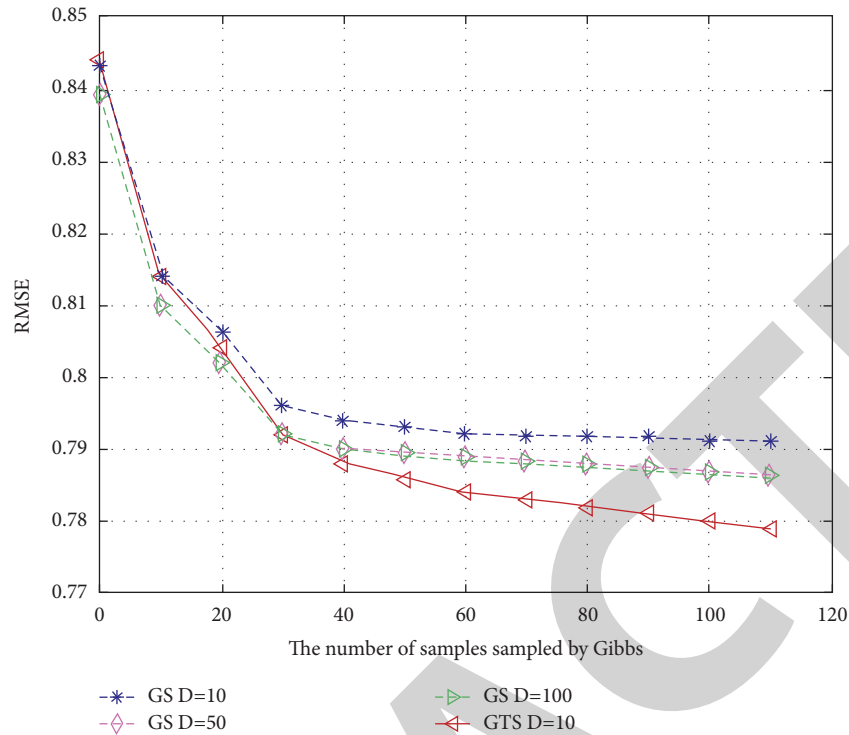
Figure 1: RMSE.

resources of language acquisition, that is, multilingualism can lead to language attrition.

Theoretical research on multilingual acquisition shows that the cross-language influence in the process of language learning may be both positive and negative. Based on this theoretical background, the correlation between English majors' English and English learning outcomes is worth exploring in the field of practice.

The main content is the PACTE translation capability model [9]. The PACTE group first proposed its translation competence model structure in 1998 and proposed a revised new translation competence model in 2005, which includes 5 subcompetencies and a series of psychophysiological factors: (1) English translation competence [10]: the necessary procedural knowledge of the two languages involved in mutual translation, including the pragmatics, sociolinguistic, text, vocabulary, and grammar knowledge of the two languages; (2) extralinguistic competence refers to encyclopedic knowledge, related professional knowledge, domain knowledge, cultural knowledge of the two languages, etc.; (3) translation knowledgeability: translation process and method and translation professional knowledge; (4) tool ability: the ability to use various text resources and information tools in translation [11] ability; (5) strategic ability: the ability to plan translation projects, evaluate the translation process and partial translation results, and activate other translation capabilities to complement each other, so as to discover problems in translation and take corresponding methods to solve them, which is the translation capability structure. The core in [12] is related to the efficiency of the entire translation process. Physiological-

psychological factors include various cognitive and attitudinal factors (such as memory, attention, perseverance, and critical thinking) and mental activity machines. Figure 2 shows the regional RPSA.

Among the correlation studies on English translation acquisition, foreign studies are mainly aimed at immigrant groups. Most of the research results show that learners who have mastered one foreign language learn more foreign languages than those who have never learned foreign languages, with faster results [13]. The ability of English translators to acquire a new language is better than that of monolingual translators [13], and English translation has a positive influence and effect on L3 acquisition [14]. The amount of language acquisition is related to the use of learning strategies and language awareness [15]. Compared with foreign multilingual studies based on language and cultural diversity, Chinese learners' language acquisition is more specific. At present, the domestic language acquisition field mainly focuses on the acquisition of the first language and the second foreign language, with limited attention to the acquisition of three languages and multilingualism. In the literature search, research in this area has increased since the early 2000s, but the number is limited. Theoretical studies are mostly based on foreign multilingual research reviews, the English translation system, multilingual cognitive transfer, and other aspects to analyze and discuss. Empirical research is divided into two categories, one is based on ethnic minorities, and mostly from the perspective of psycholinguistics, it compares and analyzes the difficulties of learners in the acquisition of minority languages, Chinese and English; the other is based on Han students, to study the
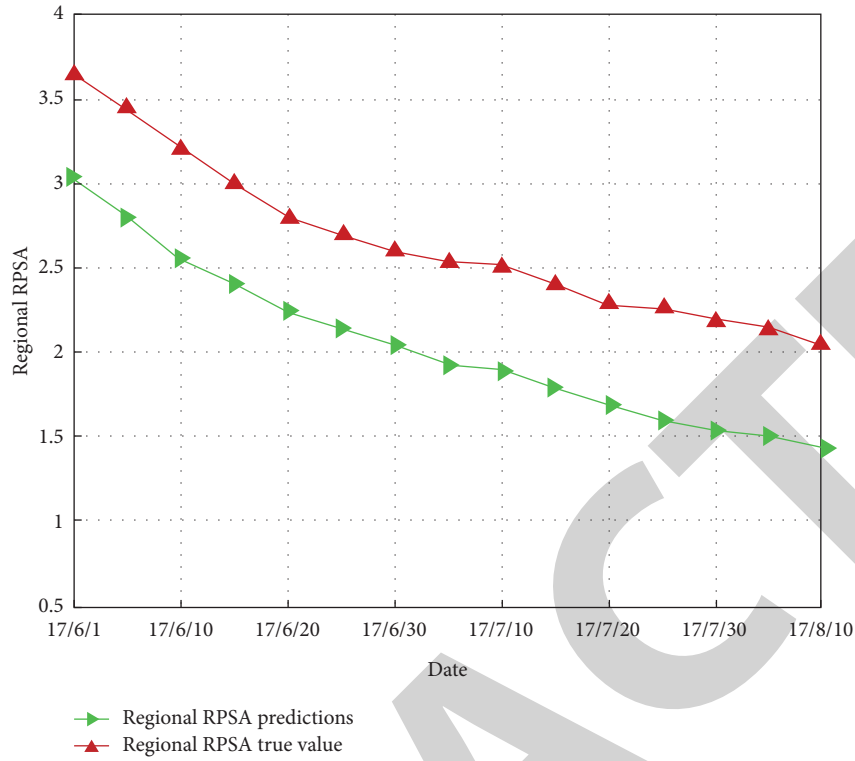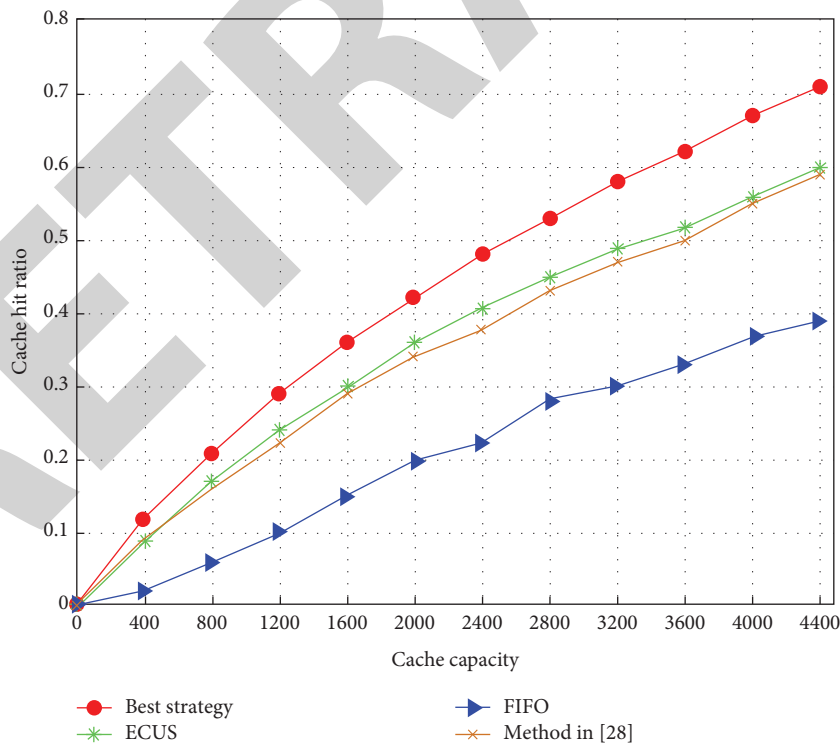
Figure 2: Regional RPSA.

Figure 3: The influence distribution of translation level factors.

interlingual transfer of learners when they are learning a third foreign language. Among them, there are not many studies on English foreign language learning, and the

research topics are mostly limited to a single skill. The reason is, on the one hand, because of the particularity of the Chinese language and culture, and on the other hand,
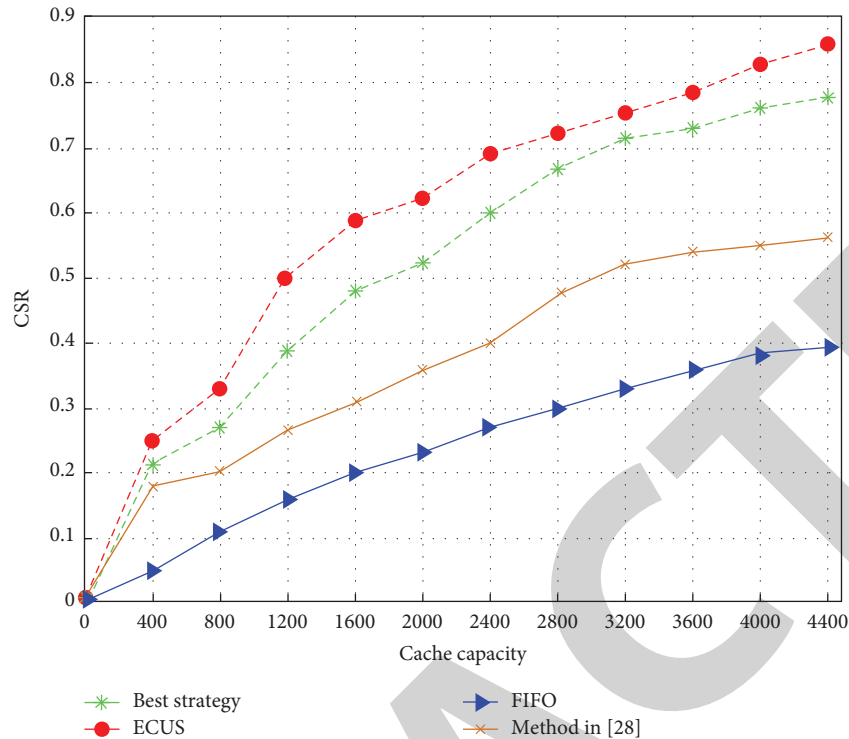
Figure 4: CSR.

because the phenomenon of multilingualism in social language usage is not widespread. However, with the impact of globalization on China's economy and culture, multilingualism has gradually become a concept in the educational context, and the research on multilingual acquisition for Chinese learners whose native language is Chinese will gradually increase. Also, Figure 3 shows the influence distribution of translation level factors.

2.2. The Starting Point of the Research. To study the relationship between English translation acquisition, the first question to face is how to define L2 or L3. There are different views on this issue. In foreign multilingual research, Grosjean believes that determining the concept of L2 is the starting point for studying the relationship between multilingualism. Hammarberg believes that L2 and L3 should be distinguished according to the order of language acquisition, while Jessner considers L2 to be one of the languages in multilingual learning and should be treated the same as other languages. In this study, the social and linguistic environment of the test subjects is different from the subjects in foreign multilingual studies. Chinese foreign language learners, the native language is Chinese, and foreign language learning is mainly through systematic language input such as classrooms and textbooks, which is different from multilingualism. Language acquisition in from the environment. Judging from the order of language acquisition, they generally learned English in middle school and then chose a new foreign language as their major when they entered the university. The learning requirements are higher than the second foreign language. Based on the special

learning path of Chinese foreign language learners, L2 or L3 cannot be determined according to the acquisition order, and they are only one of many foreign language learning. Therefore, in the research on the correlation between English and English language learning performance of English majors, there is no distinction between independent variables and dependent variables, and only the degree of linear correlation is studied, indicating an uncertain relationship between the two variables. In terms of corpus language information collection, compared with the EU multilingual terminology corpus, the TCM multilingual terminology corpus has a single source language (Chinese). Therefore, we can refer to the framework of IAsTE to simplify the corpus structure, starting from English at the beginning, and gradually adding French, Russian, Arabic, and Spanish terminology translations. Add term definitions, sources, authors, related literature, and reference sources for term translation, enrich term entries, and improve the quality of terms and term translation [16].

3. Research Questions and Research Methods

3.1. Research Questions. The research selects the national CET-4 scores and college English CET-4 scores of second-year English majors in a foreign language institution as the research data, aiming to answer the following questions. Figure 4 shows the CSR

(1) Is there a correlation between English translation level and English academic performance?

(2) Are there significant differences in the English language level of people with different English language

levels? Data analysis included descriptive statistics, Pearson coefficient correlation analysis, and variance analysis. When examining the potential relationship between English academic performance and English academic performance, first conduct correlation analysis without distinguishing between independent variables and dependent variables, and only discuss the covariation strength of variables. Whether there are significant differences in the English language level of different people.

3.2. Survey Objects.

The data collection object of this research is 2011, 2012, and 2013. English majors in a foreign language college. They participated in the national college English level 4 and the national English professional level 4 statistical test during the second year of undergraduates in 2013, 2014, and 2015, respectively, a total of 140, including 23 boys (16%) and 117 girls (84%). They had at least 6 years of English learning experience before going to university. After entering university, they started to learn English at zero starting point. At the end of the second year of university, they took the national English major test, which is equivalent to the intermediate level of English. Most students choose English as a second foreign language while studying English and take the National College English CET-4 in their second year of college.

3.3. Data Collection and Statistics.

The respondents took part in both the National English Professional CET-4 and the College English CET-4 test, both of which are national unified examinations. The National College English Major Level 4 Exam is organized and implemented by the English Major Level 4 Examination Center of the English Sub-Committee of the Foreign Language Professional Translation Guidance Committee of the Ministry of Education. It belongs to the standard reference translation examination. The subjects of the test are second-year students majoring in English in colleges and universities. The test consists of 4 parts: listening, reading comprehension, grammar, vocabulary, and writing, with a total score of 100 points. The CET-4 College English Test, or CET-4, is a national translation test administered by the Higher Education Department of the Ministry of Education. The main target of the test is the college students who have completed CET-4 according to the translation syllabus. The test is divided into four parts: listening, reading, writing, and translation, with a total score of 710 points. These two exams are national exams. The test standards have been repeatedly measured, and the test papers are reviewed by a third party. Unified standards are used. The scoring method is objective and fair. The test results are authoritative and generally recognized by society. From the point of view of validity and validity, it is more suitable as a reference. In addition, these two types of examinations are proficiency examinations, which can explain students' English learning achievement and English learning achievement to a certain extent. Based on the above reasons, this paper selects the results of the National Professional English CET-4 and College English CET-4 as the data for

TABLE 1: Specific question types and score composition.

College English test 4		
Topic	Score (%)	Total points
Hearing	35	
Reading	35	710
Writing	15	
Translation	15	

empirical research to measure the English learning performance and English learning performance of English majors.

For CET-4 and CET-4 for English majors, the question types and scores of the two types of exams are different. The specific question types and score composition are shown in Table 1.

Since the scores of each part of the two types of exams are different, when recording the scores, the proportion of the scores of the individual exams will be calculated as a percentage system for calculation. In the single score, the scores "writing" and "translation" announced by the College English Test Center are announced together. According to the instructions in the syllabus of the CET-4 test, the translation part tests the Chinese-English translation ability at the level of sentences, phrases, or common expressions. The assessment of phrases, common expressions, and grammar of words and sentences is basically the same in the "part." In order to achieve consistency in comparison, "writing" and "grammar vocabulary" are also combined in the fourth grade of English major, according to the proportion of the components in the test paper, converted to percent system for statistics.

3.4. Similarity Calculation Method.

For the calculation rule of the translation sequence, considering that the vector has the characteristic of one-way dynamic growth while calculating the similarity between the overall vectors, the size and similarity of the subsets in the translation sequence are compared. Therefore, when using the translation access sequence to calculate the similarity between sentences, considering the accuracy of the results, it is necessary to compare the sentence subsequences to ensure the comprehensiveness of the sentence similarity calculation.

Its mathematical definition is $1 - T(a)$ as a subsequence of a sentence sequence of length l on the network access sequence $T(a)$ of sentence a. The vector modulo length l of the subsequence is not greater than the total length n of the network access sequence, that is, $1 \leq l \leq n$.

$$1 - T(a) = \langle a.ip, a.aid, \{J_{n-l+j}.jid, J_{n-l+j}.url, J_{n-l+j}.time\}^{1 \leq j \leq k} \rangle. \quad (1)$$

(1) can be simplified as

$$1 - T(a) = J_{n-l+1}.jid \longrightarrow J_{n-l+2}.jid \longrightarrow \cdots \longrightarrow J_{n-l+l}.jid. \quad (2)$$

It can be seen from formula (2) that when $l = 1$, $1 - T(a)$ represents an item in an information system accessed by statement u, and the scale for different 1 values is as follows:

$$\left| U_{1 \le l \le n}\{1 - T(a)\} \right| = \begin{cases} n, l = 1, \\ n - l + 1, 1 < l < n, \\ 1, l = n. \end{cases} \tag{3}$$

For the similarity of specified subsequences in different translation sequences, it can be expressed as

$$N_{a,b}(l, 2) = \begin{bmatrix} & T_l^1 & T_l^2 & \dots & & T_l^h \\ a & T_l^1(a) & T_l^2(a) & \dots & T_l^h(a) \\ b & T_l^1(b) & T_l^2(b) & \dots & T_l^h(b) \end{bmatrix}. \tag{4}$$

Then, according to the mathematical expansion of the order matrix of formula (4), the number of occurrences of the specified subsequences of a and b in the union of suborders can be expressed as a vector $\overrightarrow{T_{a,l}}$, $\overrightarrow{T_{b,l}}$:

$$\begin{aligned} \overrightarrow{T_{a,l}} &= \left(T_l^1(a), T_l^1(a), \dots, T_l^1(a) \right), \\ \overrightarrow{T_{b,l}} &= \left(T_l^1(b), T_l^1(b), \dots, T_l^1(b) \right). \end{aligned} \tag{5}$$

Using the calculation idea of similarity between vectors, the similarity calculation result of two vectors can be obtained as

$$\text{sim}\left(\overrightarrow{T_{a,l}}, \overrightarrow{T_{b,l}} \right) = \frac{\overrightarrow{T_{a,l}}, \overrightarrow{T_{b,l}}}{\overrightarrow{T_{a,l2}} \cdot \overrightarrow{T_{b,l2}}} = \frac{\sum_{l=1}^h T_l^j(a, j).T_l^j(b, j)}{\sqrt{\sum_{k=1}^h \left(T_l^j(a, k) \right)^2 \cdot \sum_{i=1}^h \left(T_l^j(b, k) \right)^2}}. \tag{6}$$

That is,

$$\text{sim}(a, b)\vee_{l-T(b)}^{l-T(a)} = \frac{\sum_{l=1}^h T_l^j(a, j).T_l^j(b, j)}{\sqrt{\sum_{k=1}^h \left(T_l^j(a, k) \right)^2 \cdot \sum_{i=1}^h \left(T_l^j(b, k) \right)^2}}. \tag{7}$$

The similarity of $\text{sim}(a, b)|_{l-T(a),l-T(b)}^{l \le l \le \min(n,m)}$ sentences a and b on each 1-length network subsequence is

$$\text{sim}(a, b)\vee_{l-T(a),l-T(b)}^{l \le l \le \min(n,m)} = \frac{\sum_{l=1}^{\min(n,m)} \left(\lambda_l \cdot \text{sim}(a, b)|_{l-T(a)}^{l-T(a)} \right)}{\min(n, m)}. \tag{8}$$

That is,

$$\text{sim}(a, b)|_{l-T(a),l-T(b)}^{l \le l \le \min(n,m)} = \frac{\sum_{l=1}^{\min(n,m)} \left(2l/\min(n,m). \left[\min(n,m) + 1 \right] \cdot \sum_{l=1}^h T_l^j(a, j).T_l^j(b, j) / \sqrt{\sum_{k=1}^h \left(T_l^j(a, k) \right)^2} \cdot \sqrt{\sum_{i=1}^h \left(T_l^j(b, k) \right)^2} \right)}{\min(n, m)}. \tag{9}$$

3.5. Correlation Analysis

3.5.1. Correlation between English Translation Ability and Students' Performance [17]. There is an extremely significant positive correlation between each dimension of English translation ability in high school translation and students' translation performance, that is, teachers' scores on the four dimensions of translation ability. The higher the score, the higher the students' translation performance, and the highest correlation between humorous and active type and students' performance. Teachers can improve students' participation in translation classrooms by improving their own shortcomings in translation ability, thereby helping students to improve translation performance.

The study found that the four dimensions of translation ability were significantly positively correlated with students' academic performance, which is consistent with the results of this study. Wen's research shows that students believe that translation ability can improve their academic performance. From this research, it is found that the first two translation abilities are highly correlated with students' translation performance, which is consistent with the results of He Wen's research.

The reasons for this correlation are analyzed: the more humorous, active, novel, and special English translation methods, the more able to stimulate students' interest in learning translation knowledge; the more care and attention teachers show to students, the more students can feel the teacher's attention. They will put more effort into learning translation knowledge, thereby improving translation performance; in addition, when teachers impart knowledge, the more rigorous the thinking, the clearer the logic, and the clearer the translation goal, which is more conducive for students to grasp the important and difficult points of knowledge and is conducive to students' logical thinking training so that students can achieve better results.

3.5.2. Correlation between Students' Classroom Participation and Students' Performance. There is an extremely significant positive correlation between students' behavioral participation, cognitive participation, emotional participation, and their variables and translation performance in high school translation classrooms [18], that is, the higher the student's participation in the three dimensions of behavior, cognition, and emotion in the classroom, the higher the student's performance.

The research results show that the scores of students' translation tests are all correlated with behavioral participation, cognitive participation, and emotional participation. The reverse variable is negatively correlated with translation performance (indicating that the lower the score, the higher the translation performance, which is a negative correlation; the scoring method of these four variables in this study is the opposite, the higher the score, the higher the translation performance, so it is positively correlated); the remaining
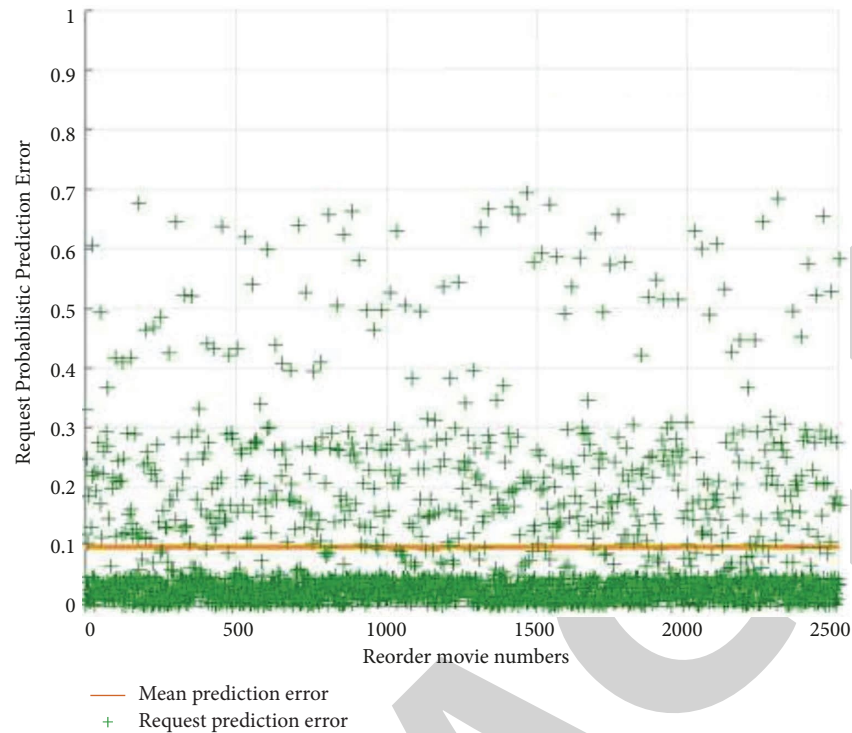
Figure 5: Error prediction.

positive variables are all positively correlated with translation performance. The findings of this study are consistent with that.

There is a significant positive correlation between the variables of behavioral participation and translation performance [19, 20]. Therefore, the more students listen to the lectures in class, and the more actively they think about the teacher's problems, the better their translation performance; the more students study translation knowledge, the more serious they complete their homework, and the better their translation performance; the more students invest in learning translation knowledge outside of class. The longer the time, the better the translation performance. The deep-level strategy variables in cognitive participation also have a very significant positive correlation with translation performance; since the shallow-level strategy and the dependent strategy are scored in reverse, the two variables of the shallow-level strategy and the dependent strategy are related to the performance, with extremely significant negative correlation. Therefore, when students learn translation knowledge, they use more deep-level strategies and less use shallow-level strategies and dependency strategies, the better their translation performance will be. There is a very significant positive correlation between the two variables of pleasure and achievement in emotional participation and translation performance; anxiety and boredom are scored in reverse, and there is a very significant negative correlation between these two variables and translation performance. Therefore, the higher the students' interest and pleasure in learning translation knowledge, the higher the sense of achievement in acquiring translation knowledge, and the higher the translation performance; the lower the students'

sense of boredom and anxiety in learning translation knowledge, the higher the translation performance. Error prediction is shown in Figure 5.

3.5.3. Correlation between English Translation Ability and Students' Classroom Participation. There is an extremely significant positive correlation between each dimension of English translation ability in senior high school and students' classroom participation. Taking students' classroom participation as the independent variable and translation ability as the dependent variable, the innovative and exploratory type has the highest correlation with behavioral participation and cognitive participation, and the humorous and active type has the highest correlation with emotional participation. Taking translation ability as the independent variable and student participation as the dependent variable, emotional participation has the highest correlation with humorous activity and caring and sharing, and cognitive participation has the highest correlation with rigorous logic and innovative exploration.

The highest correlations between behavioral participation and cognitive participation are innovative and exploratory, and the highest correlation with emotional participation is humorous and active. The highest correlation with humorous and active type and caring and sharing type is emotional participation, and the highest correlation with rigorous logic type and innovative and exploratory type is cognitive participation. This is consistent with the classification of humorous and active type and caring and sharing type belonging to emotional factors, while rigorous logic type and innovative and exploratory type belong to
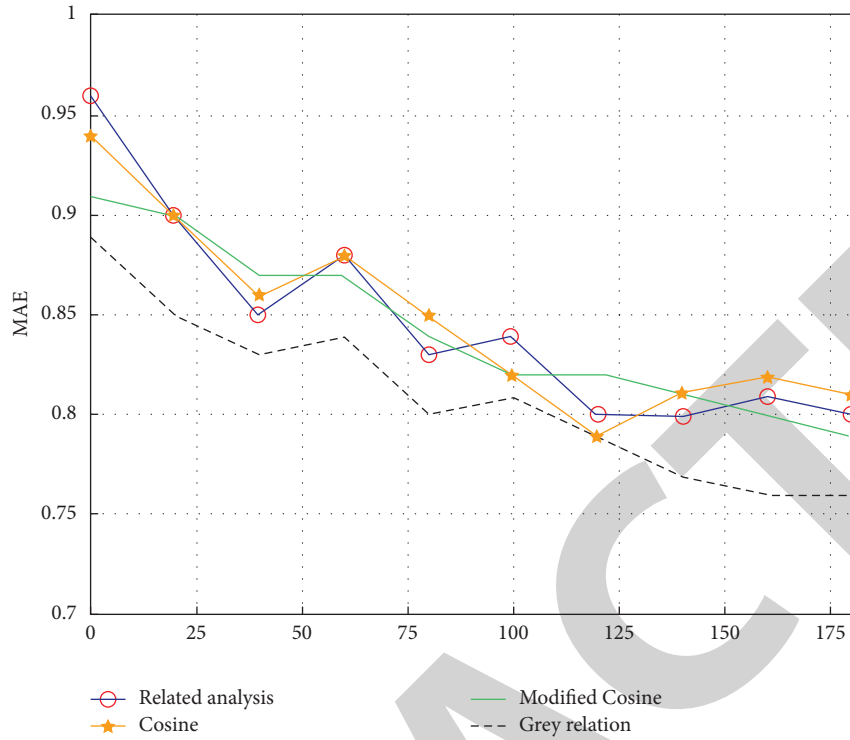
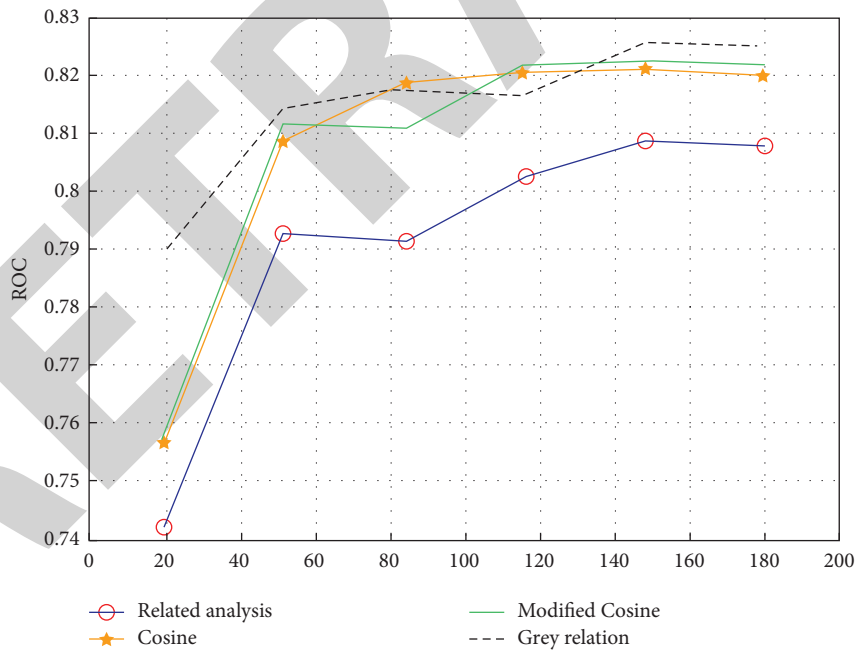Figure 6: Performance comparison chart based on MAE.

Figure 7: Performance comparison chart based on ROC.

cognitive factors. Figure 6 shows a performance comparison chart based on MAE.

A humorous and active teacher can use humorous translation language to stimulate students' interest in learning translation knowledge, enhance students' sense of fun in learning translation knowledge, reduce boredom, and

improve students' emotional participation. Innovative and exploratory teachers can use more novel translation methods to visualize abstract translation knowledge, which is conducive to students' understanding of knowledge and is conducive to cultivating students' innovative thinking, attracting students' attention, and making students more

attentive to listening, thereby improving students' behavioral and cognitive engagement. Caring and sharing teachers show more care and attention to students so that students feel the attention, understanding, and support of teachers. Students are more willing to put in more effort to learn translation knowledge, and they are more willing to actively cooperate with teachers in class. There will be more expectations for learning new translation knowledge, thereby increasing students' emotional engagement [21, 22]. When imparting knowledge, rigorous and logical teachers have rigorous thinking, clear logic, and clear translation goals, which is conducive to students' understanding of difficult and difficult knowledge, the cultivation of students' logical thinking, and the establishment of the connection between old and new knowledge, and can improve students' cognitive participation. Figure 7 shows a performance comparison chart based on ROC.

Regression analysis shows that the best-fitting models with the four dimensions of English translation ability as independent variables and the three dimensions of students' participation in translation classrooms as dependent variables are all Cubic (cubic model), indicating that the Cubic (cubic model) is well suited for establishing the relationship between translation competence and classroom participation. Through the detection of the models, the Sig of each model is less than 0.01, indicating that English translation ability can predict students' behavioral participation, cognitive participation, and emotional participation. Therefore, teachers' translation ability can predict students' classroom participation [23].

4. Conclusion

In this study, although there is a potential positive correlation between learners' translation and academic performance, the relationship between them is not a simple causal relationship, and the interaction between various skills is also more complex. The research results only have a certain degree of explanatory power, which also shows the unpredictability of language learning results. This is also in line with the characteristics of multilingual systems pointed out in the dynamic system theory, that is, the language acquisition system is a complex and dynamic system, and the development process between languages is not a simple linear process, but a nonlinear process is affected by various factors [24].

Data Availability

The experimental data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest to report regarding the present study.

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References

[1] Z. Xiao, "Flipped-learning approach in business English translation course in a Chinese independent college," *English Language Teaching*, vol. 15, no. 2, p. 61, 2022.

[2] Y. Bi, "The practice and enlightenment of tblt in business English translation teaching-- A case study of the business English majors of honghe university," *Scientific Journal of Humanities and Social Sciences*, vol. 4, no. 1, 2022.

[3] Y. Yang and X. Ji, "Research on the development of business English translation corpus and training evaluation system," *International Journal of Education and Economics*, vol. 4, no. 4, 2021.

[4] H. Wang, "Retraction Note: marine environment salinity measurement based on data classification system and features of business English translation," *Arabian Journal of Geosciences*, vol. 14, no. 23, p. 2689, 2021.

[5] A. Wang, "A study on the problems and skills of business English translation," *Learning & Education*, vol. 10, no. 3, p. 186, 2021.

[6] W. Hu, "The application of cross-cultural awareness in business English translation," *International Journal of Social Sciences in Universities*, vol. 4, no. 3, 2021.

[7] Y. Xu, "Research on business English translation architecture based on artificial intelligence speech recognition and edge computing," *Wireless Communications and Mobile Computing*, vol. 2021, Article ID 5518868, 10 pages, 2021.

[8] Y. Chen and S. H. Ahmed, "Business English translation model based on BP neural network optimized by genetic algorithm," *Computational Intelligence and Neuroscience*, vol. 2021, Article ID 2837584, 10 pages, 2021.

[9] H. Li, "The influence of culture on business English translation," *Learning & Education*, vol. 9, no. 5, 2020.

[10] C. Tracey and R. Colin, "Methodological principles for researching multilingually: reflections on linguistic ethnography," *Tesol Quarterly*, vol. 55, no. 3, 2021.

[11] W. Stefanie, "What learner corpus research can contribute to multilingualism research," *International Journal of Bilingualism*, vol. 21, no. 6, 2017.

[12] L. Aronin and U. Jessner, "Methodology in Bi- and multilingual studies," *AILA Review*, vol. 27, no. 1, pp. 56–79, 2014.

[13] T. M. Włosowicz, "Some advantages of qualitative methods in multilingualism research," *Second Language Learning and Teaching*, Springer, Berlin, Germany, 2014.

[14] K. A. T. H. E. Managan, "The blackwell guide to research methods in bilingualism and multilingualism - edited by Li wei and melissa G. Moyer," *Journal of Linguistic Anthropology*, vol. 21, no. 2, pp. 281–283, 2011.

[15] G. Manfred and A. F. Joshua, *Advances in the Study of Societal Multilingualism*, De Gruyter, Berlin, Germany, 1980.

[16] D. J. L. Torres, T. R. D. Arruda, M. d S. Barros et al., "Is a negative correlation between sTNFR1 and TNF in patients with chronic Chagas disease the key to clinical progression?" *Immunobiology*, vol. 227, no. 1, Article ID 152166, 2022.

[17] D. Oh, H. Choi, J. C. Paeng, K. W. Kang, and Gi J. Cheon, "A negative correlation between blood glucose level and ^{68}Ga-DOTA-TOC uptake in the pancreas uncinate process,"

Nuclear Medicine and Molecular Imaging, vol. 56, no. 1, pp. 52–58, 2021.

[18] K. Liu, Y. Ouyang, R. Lin, C. Ge, and M. Zhou, "Strong negative correlation between codon usage bias and protein structural disorder impedes protein expression after codon optimization," *Journal of Biotechnology*, pp. 15–24, 2022.

[19] H. Niloufar, A. Markel Troy, M. Natalie, C. Cameron, S. M. Maldonado, and W. Gray Brian, "Negative correlation between neonatal and pediatric extracorporeal membrane oxygenation circuit changes and patient outcomes," *Journal of the American College of Surgeons*, no. 5S2, p. 233, 2021.

[20] K. Liu, L. Wu, J. Yuzhen et al., "[Overexpression of ephrin-A receptor 2 (EphA2) in invasive breast cancer tissues and its negative correlation with pyroptosis]," *Xi bao yu fen zi mian yi xue za zhi = Chinese journal of cellular and molecular immunology*, vol. 37, no. 11, 2021.

[21] T. Yamamoto, S. Yamada, and T. Mizuguchi, "Negative correlation of word rank sequence in written texts," *The European Physical Journal B*, vol. 94, no. 10, p. 200, 2021.

[22] H. Yang, W. Xiao, M. Yang, Y. Wang, and X. Zhang, "Decreased neuregulin1β1 in first episode and drug-naïve patients with schizophrenia: negative correlation with cognitive impairment," *Psychiatry Research*, p. 304, 2021.

[23] R. Carla, A. Geoffroy, Angenendt Sina et al., "Negative correlation of single-cell PAX3:FOXO1 expression with tumorigenicity in rhabdomyosarcoma," *Cancer Research*, vol. 81, no. 13, 2021.

[24] S. Luisa, G. Laura, D. C. S. Benedetta et al., "Evidence for a negative correlation between human reactive enamine-imine intermediate deaminase A (rida) activity and cell proliferation rate: role of lysine succinylation of rida," *International Journal of Molecular Sciences*, vol. 22, no. 8, 2021.