

Research Article

Construction of English Translation Teaching Model Based on Cloud Data Edge Detection Algorithm and Output-Oriented Method

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In the context of globalization, English, as a unique passport to the world, is an important way for countries to communicate in information, technology, and culture. The output-oriented approach is a new theory of foreign language learning and teaching constructed by Chinese scholars, which has attracted widespread attention from foreign language scholars and front-line teachers and is expected to address the issue of “separation of learning and use” of English in Chinese universities. In the context of globalization, English, as a unique passport to the world, is an essential way for countries to exchange ideas about information, technology, and culture. Therefore, there is no doubt that English education plays a crucial role in nurturing the younger generation, especially at the high school level. This paper introduces an edge detection algorithm and an output-oriented approach to the teaching model of English translation. Questionnaires were administered to students in the control and experimental classes. The percentages of students who strongly disagreed, disagreed, neutral, agreed, and strongly agreed with the translation task based on their interest were 1.9%, 13%, 25.1%, 36.8%, and 23.2%, respectively.

1. Introduction

In the context of globalization, English, as the “world language,” is an important tool for international knowledge, science, technology, and culture. The establishment of university courses, on the one hand, meets the national strategic needs and retains talents for national projects, and on the other hand, meets the living needs of future students and the needs of comprehensive quality training and comprehensive development. As an important part of higher education, English education plays an important role in talent training. Although the role of edges in digital image processing is very important, so far there is no precise and widely accepted mathematical definition of edges.

For many years, although English is an important compulsory basic course for students of all majors in higher vocational colleges, employers and higher vocational graduates have been dissatisfied with the quality of English teaching. Therefore, how to adapt to the rapid development of industrialization and

modernization, and how to cultivate high-quality talents with practical English ability, is still the primary task of education reform in China’s higher vocational colleges.

The innovation of this paper is that under the premise that the prediction output-oriented method is beneficial to improve the teaching effect, it is applied to the classroom teaching, the data are collected, and the effect is observed in the dynamic process of exploring and improving the teaching design. Collecting qualitative data such as student feedback through open questionnaires, conduct quantitative analysis of translation tests and student-generated texts to evaluate teaching effects, continuously optimize teaching design, and review theories from a practical perspective to supplement and enrich theories.

2. Related Work

Regarding edge detection algorithms, relevant scientists have done the following research. Checking the edges (open

and closed edges) of a real photo is a challenge. However, it is difficult and necessary to develop a fast algorithm with good accuracy and stability for soundless images. Shi et al. proposed a similar variation pattern and developed a quick numerical method to solve this new pattern using the binary process. This model implemented a bias step that improved the accuracy of the judgment. Extensive numerical experiments are provided in gray scale and color image [1]. Bai et al. proposed a new steganography method based on a combination of LSB switchgear and brown analysis. To prevent the human visual system from being extracted due to the greater secrecy embedded in the pixels, the hidden pixels are divided into boundary and nonborder areas. To increase the storage and maintain good image quality, the data are brought to the page defined by the most important part of the cover image, so there is no need to save. In the download phase, the same edge data are extracted [2]. Leng et al. proposed a two-way hybrid filtration algorithm based on brown analysis. The algorithm uses a combination of brown analysis, bidirectional filters, and Gaussian filters that can be controlled by levels. Experimental results show that algorithms can actually reduce the number of calculations and achieve better results. More importantly, the proposed algorithm demonstrates the potential for acceleration of the bidirectional filter algorithm, which increases the current velocity [3]. Arya proposed an edge detection algorithm using the full generalized variational method and two-dimensional discrete cosine transform. In this study, denoising is first performed, followed by edge detection via a modified Canny mask, and then the extracted edges are adaptively enhanced in the frequency domain. The algorithm's performance was evaluated on various images. The experimental results show that compared with the other three operators, the algorithm achieves better performance in edge detection, and the edges detected in noisy images are more complete and longer [4]. Ezzaki et al. proposed a comprehensive image analysis algorithm based on Bloch's spherical laws and local quantum mechanics. Comprehensive vision systems have become an important tool in computer vision due to their wide field of vision. To demonstrate the effectiveness of the proposed method, experiments were performed with images focusing on artificial and real agriculture. The results show improved performance in terms of brown quality, brown community, and volume [5]. Almomany et al. explored the potential of developing powerful edge detection practices using customizable page matrix technologies and frameworks in commercial applications. It is considered an important element in the performance of the video and video segment, and the performance characteristics and power consumption of each implementation are evaluated. Compared to single-core processors, the proposed FPGA-based design offers better performance and approximate power consumption. 37x improvement in total construction/distribution and 53x improvement in power consumption are compared to performance [6]. Al-Shabi MA proposed a brown analysis algorithm based on turbulence. It is a fundamental concept in information science and has gained little dimension in image processing. Contrast and tanning techniques play an

important role in many models of computer image and vision analysis. The proposed technique is compared with some of the classic brown techniques in the same database, which demonstrates the process of signal-to-volume ratio method [7]. These methods provide some references to the study, but due to the short duration and sample size of the study, the study did not receive any public recognition.

3. Methods of Constructing English Translation Teaching Mode

3.1. Edge Detection Algorithm. Edge scanning is a major problem in computer image processing and vision [8]. The purpose of the brown analysis is to examine the points in the digital image where the exposure will change drastically. Significant changes in image properties often indicate significant events and changes in assets [9]. These include differences in depth, differences in surface orientation, changes in material properties, and changes in environmental descriptions. Edge analysis is an important part of computer image processing and visual research, especially feature discovery [10]. Edge detection is to detect the discontinuity of this gray level in the image and at the same time determine their precise position in the image, which is an operation for "points" in the local area.

The actual processed images are generally mixed with noise. When extracting edges, the anti-noise performance of the method should also be considered to eliminate false edges caused by noise interference. Gradient-based edge analyzers are the most common prime-derivative methods in image processing [11]. Because the boundary is the area with the largest grayscale shift in the image, the effect of the grayscale shift directly produces higher values, so the mathematical grayscale shift can be represented by the grayscale tone measure [12].

$$\nabla f(m, n) = \left[\frac{\partial f(m, n)}{\partial m}, \frac{\partial f(m, n)}{\partial n} \right]^T \triangleq [f_m(m, n), f_n(m, n)]^T, \quad (1)$$

$\nabla f(m, n)$ is a vector defined by the gradient of the image at the point

$$|\nabla f(m, n)| = \sqrt{f_m^2(m, n) + f_n^2(m, n)}, \quad (2)$$

$|\nabla f(m, n)|$ is the magnitude of the gradient

$$\theta(m, n) = \arctan\left(\frac{f_n(m, n)}{f_m(m, n)}\right), \quad (3)$$

θ is the direction of the gradient.

In order to extract the edge map of the image, the gradient value of the image is binarized by selecting the appropriate value.

$$h(m, n) = \begin{cases} \xi, & |\nabla f(m, n)| \geq R, \\ 0, & |\nabla f(m, n)| < R, \end{cases} \quad 0 < \xi \leq 250, \quad (4)$$

$h(m, n)$ is the edge image of the original image

$$f(m) = \frac{O_\lambda - O_\beta}{2} \left(wef \left(\frac{m}{\sqrt{2}\omega} \right) + 1 \right) + O_L, \quad (5)$$

ω is edge blur

$$H[u, v] = \sqrt{(f[u, v] - f[u + 1, v + 1])^2 + (f[u + 1, v] - f[u, v + 1])^2}. \quad (6)$$

$H(u, v)$ is crossover operator

$$\frac{\partial f}{\partial \theta} = \frac{\partial f(m, n)}{\partial m} \sin \theta + \frac{\partial f(m, n)}{\partial n} \cos \theta, \quad (7)$$

$\partial f / \partial \theta$ is directional derivative in the θ direction

$$\frac{\partial^2 f}{\partial \theta^2} = \frac{\partial^2 f(m, n)}{\partial m^2} \sin^2 \theta + 2 \frac{\partial^2 f(m, n)}{\partial m \partial n} \sin \theta \cos \theta + \frac{\partial^2 f(m, n)}{\partial n^2} \cos^2 \theta, \quad (8)$$

$\partial^2 f / \partial \theta^2$ is the second directional derivative in the θ direction

$$D^{(2)}(b, \varepsilon) = \frac{1}{6} (D(b + 2, \varepsilon) + D(b - 2, \varepsilon) - 2D(b, \varepsilon)), -N \leq b \leq N. \quad (9)$$

N is positive integer greater than zero, and $D^{(2)}(b, \varepsilon)$ is forward and backward average difference

$$G(\delta) = \frac{1}{\sqrt{2}} \sum_{k \in \mathbb{Z}} g_k e^{-ik\delta} \in L^2(\mathbb{R}), \quad (10)$$

g_k is frequency response, and $G(\delta)$ is transfer function

$$\mu(m) = \frac{1}{\sqrt{2\pi}} \left[\prod_{v=1}^{\infty} G(2^{-v}\xi) \right]^j (m), \quad (11)$$

μ is the corresponding scaling function

$$f_d^v(t) = \sum_k c_{v,k} t_k (2^{-v}t) = \sum_k c_{v,k} t_{v,k}(t), \quad (12)$$

$c_{v,k}$ is scale expansion coefficient, and v is scale

$$\begin{aligned} c_{v+1,k} &= \sum_b g_0(b - 2k) c_{v,b}, \\ s_{v+1,k} &= \sum_b g_1(b - 2k) c_{v,b}, \end{aligned} \quad (13)$$

$c_{v,k}$ is residual scale factor, and $c_{v+1,k}$ is residual coefficient of space

$$\left\{ \begin{array}{l} Q_{2^f}^1 f(m, n) \\ Q_{2^f}^2 f(m, n) \end{array} \right\} = 2^f \left\{ \begin{array}{l} \frac{\partial}{\partial m} (f * \theta_{2^f}(m, n)) \\ \frac{\partial}{\partial n} (f * \theta_{2^f}(m, n)) \end{array} \right\} = 2^f \overset{\omega}{\nabla} (f * \theta_{2^f})(m, n), \quad (14)$$

$\overset{\omega}{\nabla} f(m, n)$ is the gradient vector of the function.

Figure 1 shows the flowchart of image edge detection.

3.2. Output-Oriented Approach. The business-oriented approach has three parts: the study philosophy, the study area, and the teaching process. The philosophy of learning has three main elements: core learning, integration of learning and application, and education for all. Assumptions of education include results-based assumptions, assumptions

that support inclusion, and specific study assumptions [13]. The learning process consists of three stages: selection, activation, and evaluation. Among the three main components of the production-oriented approach, learning concepts are the dominant concept of the two components: learning theory provides theoretical support for the learning process, and the learning process is a practical form of concept and instruction. Hypothesis: In addition, teachers play an important role as intermediaries in each stage of the teaching process. These three basic principles suggest that production-oriented approaches disrupt long-term, student-centered education and recommend that language education should achieve its educational objectives and promote effective learning. [6]. As shown in Figure 2, this is a diagram of a theoretical system of production-oriented methods.

Classroom activities can take many forms, such as group work, group discussions, individual presentations, and group presentations. Different forms serve different teaching goals, so the key is to choose the best form to achieve teachers' teaching goals. Teachers should make full use of time to improve students' learning efficiency, because the current classroom teaching time is insufficient or even severely reduced in college English teaching [14]. From the perspective of effective learning, the instructional design based on the output-oriented approach is primarily concerned with what students can learn from the course, rather than simply evaluating who can speak or take the lead in the classroom [15].

In the process of realizing educational values, we must attach importance not only to the "presupposition" of teaching methods, but also to its "generation" in the classroom, because classroom perception is the gathering place of various conflicts and collisions, and observation and discussion are the key to education.

In language teaching, the use of integrative principles of learning is opposed to the principle of separation of text-centered learning and use. In contextual social practice, use and learning are integral parts of interaction [16]. Therefore, learning using ensemble principles emphasizes the tight integration of input learning and output application [17]. Input learning includes listening and reading; output applications refer to speaking, writing, oral translation, and written translation. No matter what teaching method is adopted, teachers should make full use of teaching materials to help students internalize receptive knowledge or overcome the problem of lazy knowledge, so as to cultivate their output ability in daily communication. In other words, students should use textual materials for productive tasks, not just learn language knowledge from texts [18].

The simplest edge detection criterion is the gradient magnitude threshold criterion. If an application requires the determination of the edge position, the edge position can be estimated at sub-pixel resolution, and the edge orientation can also be estimated.

According to the principles of whole-person education, language education targets people with emotions and thoughts, not learning robots. Language teaching must achieve not only the instrumental goal of improving students' general English language skills, but also the

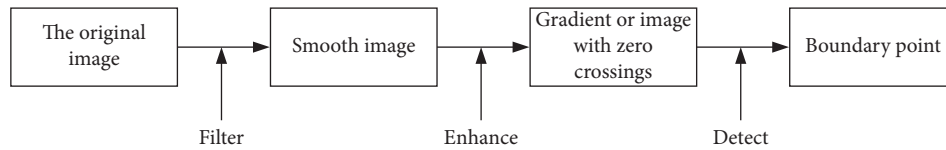


FIGURE 1: Flowchart of image edge detection.

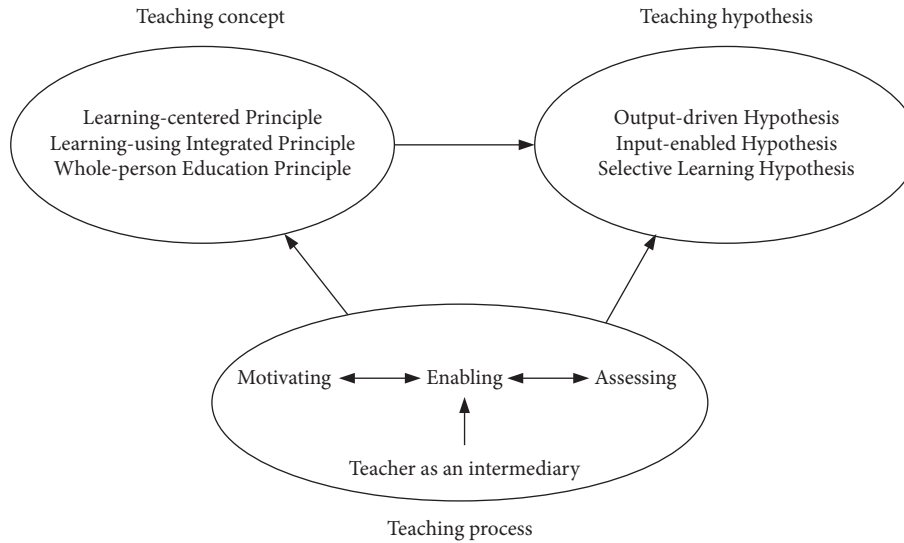


FIGURE 2: Schematic diagram of the theoretical system of the output-oriented method.

humanistic goals of higher education, such as developing students' critical thinking, independent learning, and general cultural quality [19].

The whole-person education principle does not require much time in the classroom to achieve its humanistic goals. In fact, the humanistic goals of foreign language courses can be achieved in the following three ways. (1) Teachers should carefully choose the topic of the output task. There are two types of topics that are conducive to the achievement of humanistic goals: topics about how to promote the personal health of students. The theme is how to help students take the social responsibility of disseminating and exchanging Chinese and foreign cultures [20]. (2) Teachers should carefully select input materials for output tasks. The input materials should have a high ideological level, promote a positive spirit, help to cultivate students' minds, and establish correct ideological values. In addition, input materials should reflect current social and political topics at home and abroad, which will help develop students' patriotic feelings and broaden their international perspectives. (3) Teachers should design teaching activities skillfully. For example, teachers can develop students' cooperative spirit through pair or group activities. Peer assessment can improve students' ability to assess the strengths and weaknesses of others [21].

Output is the driving force of language learning and the goal of language learning. Compared with input learning, output can stimulate students' desire and enthusiasm for learning, and achieve better learning efficiency. In other words, language teaching starts with an output task, and

then students try their best to complete the output task [22]. In this process, students will not only realize the practical value of output tasks in improving cultural literacy and communicative competence, but also realize their own language skills insufficiency. Once students identify the meaning of the output task and their own language deficiencies, they will be more active in input learning to complete the output task, thereby making up for their deficiencies [23].

The input activation hypothesis states that under output-driven conditions, providing appropriate input that stimulates the output leads to better learning than no input. Based on extensive observations of classroom teaching, it was found that students can stimulate their knowledge base by completing different forms of output tasks, while also learning from their peers. However, due to individual differences, students' learning efficiency is obviously limited.

Academic success depends in part on the ability to selectively learn more important facts from less important ones. Students should choose useful parts from the input material according to the output needs, and then practice and memorize them. According to the selective learning hypothesis, selective learning can optimize learning efficiency better than nonselective learning. Humans have limited attention and memory in a certain period of time, so if students focus their limited attention on multiple tasks, they cannot achieve higher learning efficiency.

Traditional English translation courses usually begin with a warm-up or induction activity to prepare for the subsequent input of knowledge, rather than to stimulate the learner's desire for output. In contrast, the output-oriented method takes output incentives as the first step in each new unit, including three parts: teachers presenting translation scenarios, students' efforts to complete translation activities, and teachers explaining teaching goals and output tasks.

First, the teacher presents the translation scene. Before starting a new unit, teachers should provide students with possible communication scenarios and topics for discussion in future study or work.

Second, students try to complete translation activities. During the grammar coding process, they can check whether their output meets the translation goals, and the personal experience of completing seemingly simple and mundane tasks will help students approach each future task with a common heart, and then pursue progress step by step. Therefore, teachers deliberately starve students, which stimulates students' learning motivation and improves their translation ability.

Third, the teacher expounds the teaching objectives and output tasks. Teaching goals can be divided into two categories: translation goals, that is, to complete a specific translation task; and language goals, that is, to acquire fixed words, phrases, or grammar. The latter goal should serve the former. More specifically, if a new word, phrase, or grammatical pattern in the input material is not relevant to the translation goal of this unit, it cannot be emphasized in the translation goal, which is exactly the requirement of selective learning.

Teachers need to set appropriate output goals and corresponding output tasks. At the same time, they should design output scenarios around goals and tasks to stimulate students' learning motivation.

4. An Experiment on the Construction of English Translation Teaching Mode

Cloud data center is a new type of server hub based on cloud computing architecture, which is seamlessly connected with various sources (computers, storage, network, etc.). Cloud computing plays an important role in connecting these devices. Figure 3 shows the workload distribution diagram of the cloud data center.

The introduction of cloud computing technology has fundamentally changed the traffic and data center processing patterns. On the other hand, in cloud computing, server-side computing generates a lot of lateral traffic. As a result, cloud data center network traffic has increased significantly. In addition, different services sent to the cloud server center create services of different qualities on the cloud server network; for example, Internet search services require lower latency, but data backup services require higher bandwidth. Due to the rapid growth of traffic and new commercial demands for cloud networks, traditional traffic management technologies designed for network environments can easily

lead to problems such as network congestion, packet loss, and increased latency, which seriously affect data transmission, performance, and user experience. Figure 4 shows the overall architecture design diagram.

As shown in Table 1, the average performance of three experiments is compared under different transport modes. Before deploying large traffic, first start calculating the AC power along the current path, which can optimize the cloud server network, and then recalculate the path according to the inappropriate traffic load to meet the requirements of certain congestion levels.

The machine vision system includes light source, image acquisition equipment, image transmission equipment, and computer and control system. Figure 5 shows a schematic diagram of the machine vision system.

The working principle of the entire machine vision system is that the object to be tested reflects light under the illumination of the light source, and is imaged on the camera acquisition device through the lens and converted into a digital signal. After passing through the image acquisition card, the signal is transmitted to the computer. The image processing algorithm processes the signal and transmits it to the control mechanism, and the control mechanism performs corresponding operations on the signal.

The edge detection algorithm based on machine vision system is used to detect the teacher's image of English translation teaching. The sequence diagrams belonging to different fingerprints are quite different, but the sequence diagrams belonging to the same fingerprint are close to each other. The following is to determine whether the fingerprints belong to the same fingerprint by calculating the Euclidean distance and count the false rejection rate and false recognition rate. As shown in Tables 2–4, they are the Euclidean distance statistics table.

When the threshold value is set at 0.8 in the experiment, the rejection rate in Table 2 is 0.115, the rejection rate in Table 3 is 0, and the rejection rate in Table 4 is 0. From this experiment, it can be concluded that using the ancestral sequence as the extracted fingerprint feature can show good identity, and a reasonable selection of the threshold value will obtain a lower rejection rate.

The object of this study is two parallel classes of the same major in a college, and each class consists of 50 students, including 40 girls and 10 boys. Class A is an experimental class, which adopts the output-oriented method, and class B is a control class, which adopts traditional methods and overemphasizes translation ability and language form.

Different from the traditional text-centered teaching method, the output-oriented teaching mode advocates that students learn to apply the knowledge learned from the text. As far as the teaching process is concerned, the output-oriented approach includes three important components, namely, motivation, support, and evaluation. During these three stages, teachers act as intermediaries and act as leaders and scaffolders. In the motivational phase, teachers design a practical situation and assign communicative tasks to students. Students are motivated to complete challenging tasks while being aware of where they fall short in their studies. In the authorization phase, teachers provide students with

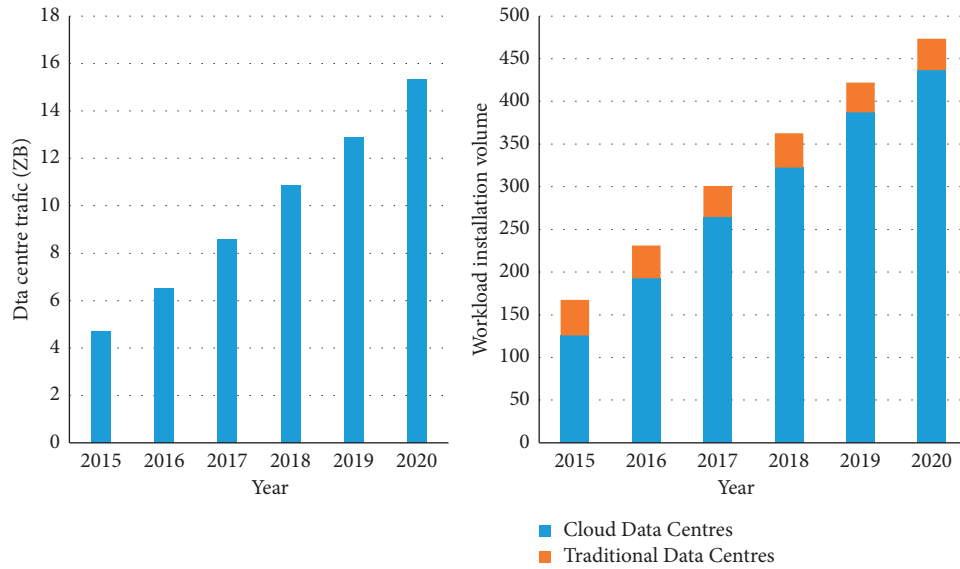


FIGURE 3: Cloud data center workload distribution map.

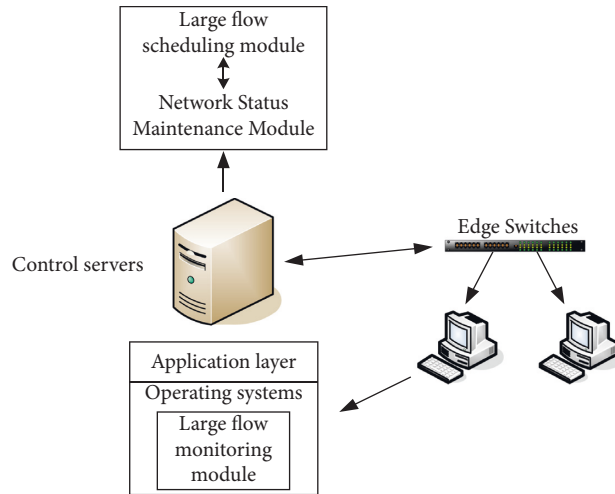


FIGURE 4: Overall architecture design diagram.

TABLE 1: Comparison of average throughput rates under different transmission mechanisms.

Experiment number	EC mechanism	GF mechanism	SA mechanism	SM mechanism
1	0.57	0.62	0.73	0.81
2	0.55	0.64	0.71	0.8
3	0.58	0.61	0.74	0.82

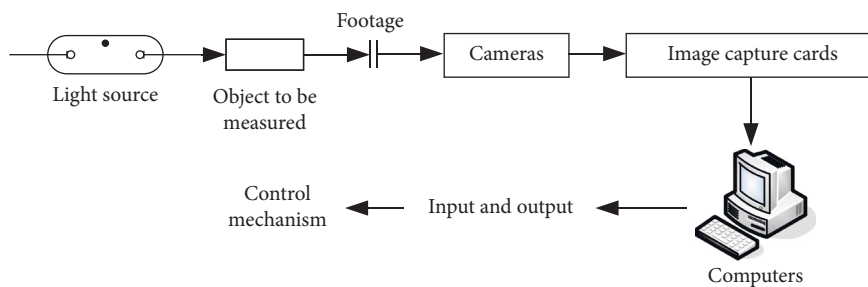


FIGURE 5: Schematic diagram of machine vision system.

TABLE 2: 01–04 Euclidean distance statistics.

MSE	01	02	03	04
01	0	0.1154	0.2453	0.2297
02	0.1154	0	0.1845	0.1845
03	0.2453	0.1845	0	0.1114
04	0.2297	0.1845	0.1114	0

TABLE 3: A01–A04 Euclidean distance statistics.

MSE	01	02	03	04
A01	0	0.4428	0.6018	0.7964
A02	0.4426	0	0.1872	0.2071
A03	0.6017	0.1872	0	0.0546
A04	0.7961	0.2074	0.0542	0

TABLE 4: H01–H04 Euclidean distance statistics.

MSE	01	02	03	04
H01	0	0.2296	0.4663	0.6627
H02	0.2294	0	0.2684	0.4586
H03	0.4663	0.2683	0	0.2087
H04	0.6625	0.4582	0.2087	0

necessary input materials and supervise them to complete output tasks through selective learning. During the evaluation stage, teachers check students' translation results and implement teaching according to their actual situation, or give feedback on their performance after class. There are various types of assessment, such as peer assessment, inter-group assessment, and teacher-student joint assessment. There are two types of assessments: immediate assessments and delayed assessments. Immediate assessment is to assess the learning efficiency of students during the teacher's selective learning and output exercises, helping teachers to adjust the teaching process accordingly. Delayed assessment requires students to practice output tasks according to the teacher's request after class and then submit the output to the teacher for assessment.

Collaborative teacher-student assessment is a new and improved assessment method for organizing and balancing teacher assessments and other types of assessments. The importance of teachers' professionalism in English is emphasized, meaning that professional assessments of teachers guide peer assessments. Although some students spend a lot of time assessing peer performance or their own performance, they are unable to make high-value assessments due to their limited knowledge and expertise. Therefore, the evaluation will ultimately be futile at the expense of time. Before class, teachers select and evaluate representative samples according to the teaching objectives of the unit. In the classroom, students first think independently, then discuss and communicate in groups, and finally conduct classroom discussions under the guidance of the teacher. At the same time, the teacher gives timely review suggestions for preparation before class. As shown in Figure 6, it is a schematic diagram of preclass and in-class evaluation.

After class, under the professional guidance of teachers, students use self-assessment or peer assessment as a supplement. Students may take assessment tasks for granted and may not even participate, which ultimately goes against preset instructional goals. Therefore, teachers should provide professional assessment guidance for students. For example, the teacher selects a typical sample and then demonstrates how to conduct the assessment, thereby stimulating collaborative assessment among students. Figure 7 shows a schematic diagram of the after-school assessment.

Both the experimental class and the control class took the same English translation test in the first week, in order to prove whether the English translation level of the two classes was significantly different before the experiment. The score data are shown in Figure 8.

The mean score of the control class was 23.26 with a standard deviation of 0.624, while the mean score of the experimental class was 23.29 with a standard deviation of 0.971. It was found that the average translation scores of the control class and the experimental class were close, with only a small difference of 0.03. Before the experiment, the English translation levels of the control class and the experimental class were parallel.

The translation part of the final exam is used as a post-test for the control class and the experimental class, in order to prove whether the implementation of the output-oriented method in English translation teaching has a positive impact on the students' translation level. Figure 9 shows the scores after the test.

Although the mean scores of the post-test in both the control and experimental classes were higher than those in the pretest, there was a large difference between the two

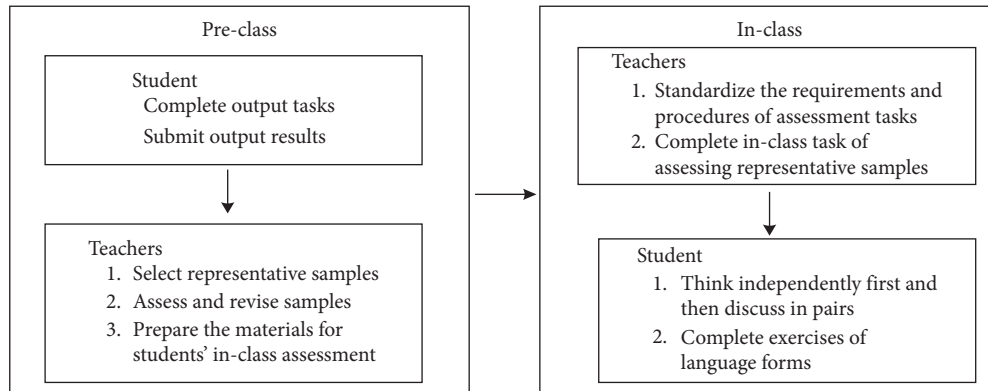


FIGURE 6: Diagram of precourse and in-course assessment.

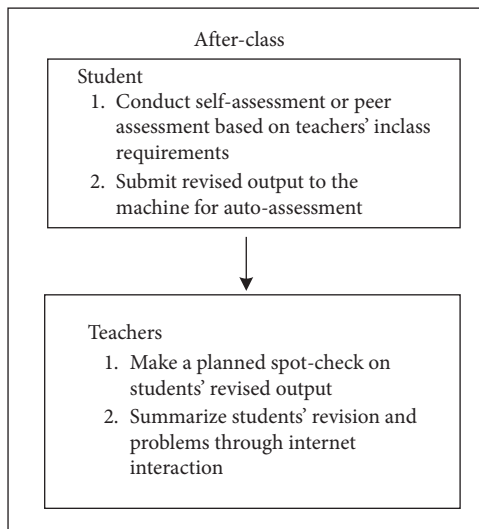


FIGURE 7: Diagram of after-school assessment.

degrees of growth. We can easily conclude that the English translation level of the experimental class has been significantly improved under the output-oriented teaching mode. Compared with the experimental class, the translation level of the students in the control class who adopted the traditional teaching method did not improve significantly. Traditional teaching methods cannot effectively help control class students to improve their English translation skills.

A questionnaire survey was conducted between the experimental class and the control class to investigate the differences in students' interest in translation. The results of the questionnaire survey are shown in Figure 10.

It can be seen that the implementation of the output-oriented method in translation teaching is conducive to stimulating students' interest in translation, while the traditional teaching mode is not conducive to stimulating students' interest in translation. Most of the students in the experimental class showed interest in translation in this semester, which stimulated their initiative in translation and obtained satisfaction or pleasure from translation. In contrast, most students in the control class were not interested

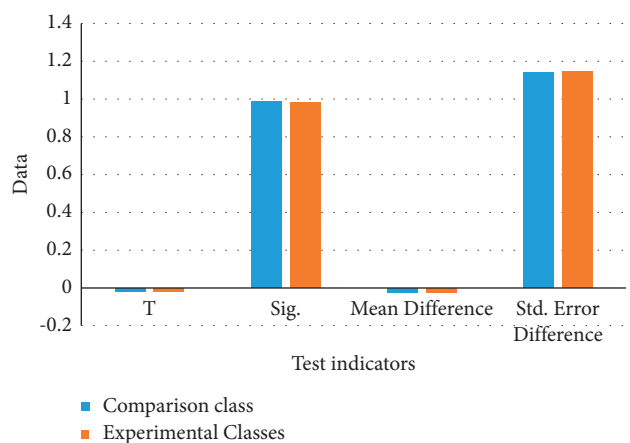
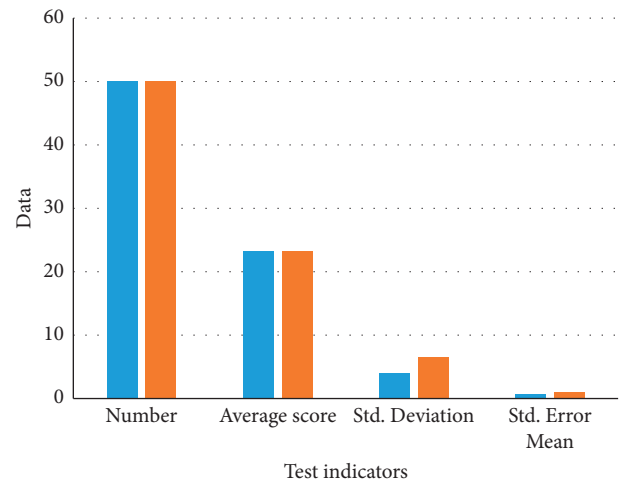


FIGURE 8: Independent sample tests for pretesting.

in translation and considered translation study a frustrating burden. Therefore, most of them do not enjoy translation learning and even tend to take these tasks for granted. Furthermore, although some students in the

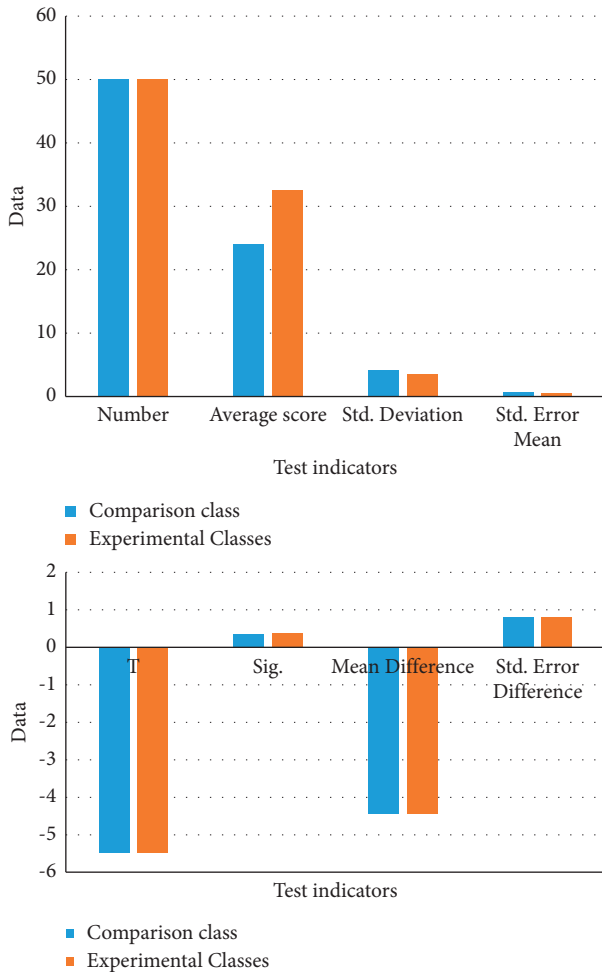


FIGURE 9: Post-test score situation.

experimental class were relatively neutral in their translation interests, it was still possible to actively shift their perspectives.

5. Discussion

The output-oriented approach advocates learning language forms through use in meaningful contexts, focusing on the combination of form and meaning. Form teaching out of context cannot achieve satisfactory teaching effect because language learning is not a passive acceptance process. In addition to external stimuli, it is also closely related to the subject's emotions, thinking, perception, will, etc. Language teaching emphasizes the biological attributes of people, ignoring the social attributes of people. Different from the comprehensive teaching method, which regards language learning as a one-way knowledge transfer, the output-oriented method not only pays attention to the input in language teaching, but also pays attention to the interaction and output. The output-oriented method is output-oriented, advocates the integration of learning and application, uses the output task as the starting point and end point of teaching, and applies what have learned to promote learning. There is obvious constructivism tendency, following the educational thought of learning by doing.

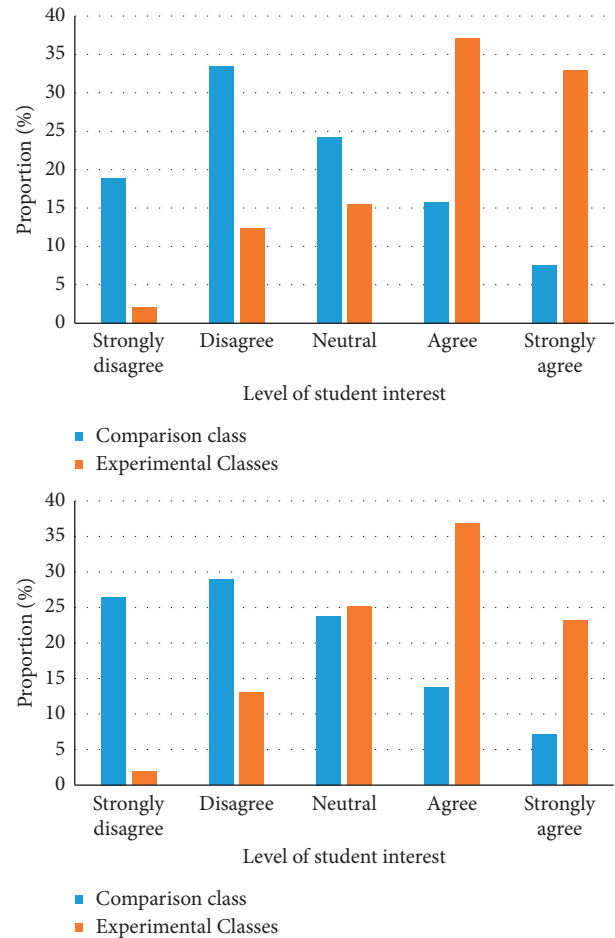


FIGURE 10: Questionnaire results.

Learning by doing emphasizes the active construction of knowledge by the learning subject. This learning mode changes the passive acceptance of knowledge to active inquiry, which is undoubtedly an improvement. However, from the perspective of effective teaching, inquiry-based learning of learning by doing is time-consuming. In the limited classroom time, it is obviously a waste of educational resources to rely entirely on students to learn by doing. The rational use of educational resources is one of the advantages of the output-oriented method over the analytical teaching method.

Analytical pedagogy focuses on the meaning of language and advocates learner-centered. The content of teaching is often thematic or communicative, using real materials, with oral or written output activities as the main teaching activities, rarely involving grammar rules, drills, and error correction. Epistemologically, analytical teaching method has obvious constructivism tendency. The output-oriented method has something in common with the analytical teaching method and also adopts the theme-based teaching, with oral and written output activities as the main line of teaching. However, compared with the analytical teaching method, the output-oriented method also has advantages: the output-oriented method draws on the achievements of social and cultural theory and focuses on the leading role of

teachers in teaching. It is believed that the difference between classroom learning and autonomous learning is that classroom learning can give full play to the leading role of teachers and optimize the “environmental factors” of learning to influence learners’ personal and behavioral factors, thereby optimizing the learning effect. Teachers’ systematic adjustment of learners, learning objectives, learning content, evaluation methods, etc., is the advantage of classroom teaching in school education. And the most ideal foreign language classroom is a classroom where learners have a strong desire to learn and teachers adjust in place.

The output-oriented method also draws on the results of the cognitive theory of information processing on effective input and focuses on the teaching of language forms in the enabling link. The academic community generally believes that explicit teaching of language forms cannot change the order of language acquisition, but it can improve the efficiency of language learning.

Influenced by traditional teaching methods and foreign teaching ideas, two extreme but common phenomena have appeared in college English teaching in our country. One is to take “teaching text” as the main teaching activity, and the teaching objectives are ambiguous. The second is to blindly follow foreign teaching concepts and methods, and misunderstand the teaching concept of “students are the middle.” In the actual teaching operation, the tendency of “lighting on language and focusing on communication” is becoming more and more obvious, and the role of teachers in students’ knowledge construction is marginalized.

6. Conclusion

The output-oriented approach has brought a positive impact to the classroom, not only helping students improve the translation quality and translation learning effect in the output, but also bringing more opportunities for translation use and more two-way feedback to the classroom. It also brings positive emotional experience to learners, helps students master the necessary learning strategies, and is also beneficial to the improvement of students’ autonomy in “doing things in English.” These positive effects prove the feasibility and effectiveness of the output-oriented method in college English teaching, and bring an opportunity to solve the problem of time-consuming and inefficient college English. Starting from innovative teaching theories and typical problems in college English teaching, this research adopts the method of directional action research to concretize the abstract theory of output-oriented method into concrete teaching steps and apply it to English classrooms. This study is a preprospective study. Due to the limited data sources and scientific level, there are inevitably gaps in the study. In the case of the analysis of the current situation, the analysis is not thorough enough as it only shows the changes in the relevant indicators and does not analyze the internal crisis, and in the case of the theoretical studies, the understanding of the theory is not thorough enough. In the edge detection algorithm based on the microscopic images

of color cell slices, the artificial experience parameters are used, and the automatic adjustment of network parameters is not realized.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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