




## Optimization of Computer-Aided Interactive Media Translation Teaching Model

Jing Yin<sup>1</sup> and Ting Yin<sup>2</sup>

<sup>1</sup>College of Foreign Languages, Hengyang Normal University, Hengyang, Hunan 421002, China, [yinjing@hynu.edu.cn](mailto:yinjing@hynu.edu.cn)

<sup>2</sup>School of Foreign Languages, Guangdong Polytechnic Normal University, Guangzhou, Guangdong 510665, China, [smilecho@163.com](mailto:smilecho@163.com)

Corresponding author: Jing Yin, [yinjing@hynu.edu.cn](mailto:yinjing@hynu.edu.cn)

**Abstract.** At the same time, big data is profoundly affecting the form of modern education and providing digital and personalized services for education. The study of interactive media translation teaching assisted by computer data analysis has become a hot issue in educational research. With the help of the existing data system, the students' usual interactive media translation teaching situation is collected, and through the statistics and analysis of the data, the materials are provided for teachers to master the learning situation, accurate teaching and teach students according to their aptitude, so as to provide solutions for students' targeted learning and reduce the burden. Interactive media translation teaching is complex and changeable. Through big data analysis, students can consolidate and sort out their knowledge, reflect on their learning methods, and further optimize and improve interactive media translation teaching. Therefore, applying computer data analysis to interactive media translation teaching can effectively develop students' intellectual potential and improve teaching effectiveness. Make full use of computer data analysis theory to comment on interactive media translation teaching, sort out the data and analyze the data characteristics to make the data "speak" and truly enable the interactive media translation teaching.

**Keywords:** Computer-aided; interactive media; translation teaching; pattern optimization

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### 1 INTRODUCTION

Since entering the information age, people's lifestyle has changed greatly, and the application of computer data analysis in various industries is becoming more and more significant. The era of big

data has come, and the emergence of big data will have a great impact on all fields of society. In this context, education and teaching is bound to be affected by data analysis. Without the help of computer, teachers will spend more time and energy on data analysis, reduce the capacity and efficiency of lecture and evaluation, and the general statistical analysis cannot accurately reflect the actual situation of students. In addition, in the traditional mode, teachers often need to take photos or projection when displaying solution examples, which not only consumes time, but also affects the main content that teachers want to talk about, so the evaluation efficiency will be affected. In today's society, there are high requirements for innovative development, and the demand for innovative talents has increased significantly [1]. Interactive media translation teaching should not only face all students, but also pay attention to the different needs of different students. The realization of differentiated and personalized teaching needs the auxiliary application of big data, so as to better grasp the individual differences of students.

This study analyzes the computer-aided interactive media translation teaching, defines the application status of computer data analysis in interactive media translation teaching, points out the relevant problems and reasons, and puts forward targeted countermeasures to strengthen the application of data analysis in interactive media translation teaching. The purpose is to promote the application of data analysis in interactive media translation teaching and improve the effect of evaluation class. The purpose of this study is to better apply computer data analysis to the actual interactive media translation teaching, so as to ensure that the interactive media translation teaching can play its due effect, not only improve teachers' attention to the computer and interactive media translation teaching, but also ensure that students experience fun and progress in the interactive media translation teaching [2]. It can also promote the effectiveness of interactive media translation teaching, and truly realize the purpose of examination analysis assisting interactive media translation teaching. Based on computer data analysis, this study strengthens teachers' cognition and attention to data application, updates education and teaching ideas, promotes students' all-round development, and further promotes the application and popularization of data analysis in interactive media translation teaching.

The teaching optimization algorithm simulates the class-by-class teaching method, in which learners guide learning through teachers' "teaching", and at the same time, learners promote knowledge absorption through mutual "learning". Like other natural heuristic algorithm, a species of intelligent optimization method, the population search method is used to obtain the global optimal solution, among them, the teachers and learners algorithm populations of individuals, each learners learn a subject result is equivalent to a one dimension of the decision variables, and corresponds to the fitness value of the best individual teachers. As a group optimization algorithm proposed by simulating the teaching process of the school class, the search and solution of the optimization problem can be realized by learning the group of learners.

Through theoretical analysis and case analysis, the research can clarify the actual situation and shortcomings of computer data analysis application in media translation teaching, help to enhance the attention of students, teachers, schools and relevant departments to examination data analysis, and provide help to promote the development of the education industry. The research is of great significance for the improvement of relevant theories of examination data analysis and application, as well as the strengthening of media translation teaching analysis. The research adopts the method of practical investigation and research, based on the teaching practice, and through targeted information and data statistics, to clarify the problems existing in the analysis and application of media translation teaching data. On this basis, this paper explores the corresponding countermeasures to solve the problems from the reality of students, teachers and media translation teaching, as well as the software and hardware facilities of computer data analysis assisted teaching. The teaching optimization strategy proposed in the research can be applied to the actual teaching of media translation teaching, has guiding significance for the improvement and optimization of media translation teaching, can promote the effect of media translation teaching, and enhance the attention of students, teachers and schools to the application of data

analysis. It can enable other schools of the same type to pay more attention to the application of big data, actively introduce and use new technologies and equipment in teaching.

## 2 RELATED STUDIES

Trueger [3] using social media to interact with audiences in a variety of ways, from simply disseminating content through blogs, microblogs and podcasts to more interactive discussions on twitter chat and online journal clubs, can increase the number of readers. Hailing and Zhongwei [4] believe that the computer professional process of analyzing big data provides a variable thinking for computer teaching. According to this logical thinking, it promotes the research on personalized teaching reform. He points out that learning computer language requires a certain basis of mathematical logical thinking, and the big data analysis process is a process of collision of multiple thinking, through this process, learners can benefit a lot. Backfisch et al. [5] believes that integrating modern information technology into mathematics classroom teaching can provide guidance for teachers, help them prepare for classes and train their own teaching skills, and help teachers plan and evaluate their teaching. Aquila et al. [6] believed that the traditional teaching model could not keep up with the trend of The Times. Big data has the advantages of large amount of information, variety and strong effectiveness. By analyzing the data, teachers can cooperate with students to explore relevant problems, so that students can have the sense of ownership, adjust their teaching objectives in front of big data, and carry out personalized teaching. Wu [7] analyzes the difficulties of interactive media translation teaching, and suggests that teachers should grasp students' learning situation in time so as to effectively conduct targeted teaching for students.

Computer-aided interaction helps fill in gaps, depending on the basis of each student's learning. It is helpful to improve analysis and student evaluation. The rapid development of science and technology has put forward higher requirements on the professional ability of employees. Only possessing professional knowledge and practical skills can no longer meet the needs of social development. If closed, enterprises will lose market competitiveness, will be eliminated by the society. Therefore, in order to better improve productivity, create high performance and gain advantages in the increasingly fierce competitive environment, it requires employees to master the method of tracking the constantly developing new technology and new skills and pay more attention to the cultivation of learning ability. This is more important than simply passing on knowledge. The traditional knowledge-centered discipline teaching mode pays attention to the structure and integrity of knowledge system and neglects the cultivation of practical skills and key abilities. It is obvious that it can no longer undertake the task of cultivating skilled talents with comprehensive vocational ability, which is required by the current society [8]. In order to meet the needs of development, the reform of traditional teaching mode has become an inevitable choice.

In this paper, the optimization of teaching mode of computer-aided interactive media translation not only analyzes students, but also gives a relatively accurate evaluation system, so that teachers can master which knowledge points students are weak, and further improve the teaching quality by combining precision teaching principle. This paper will also give some examples of how "knowledge point evaluation system" is applied to practice teaching to help students learn independently and how the "wrong questions set" derived from "knowledge point" can assist high school mathematics teaching.

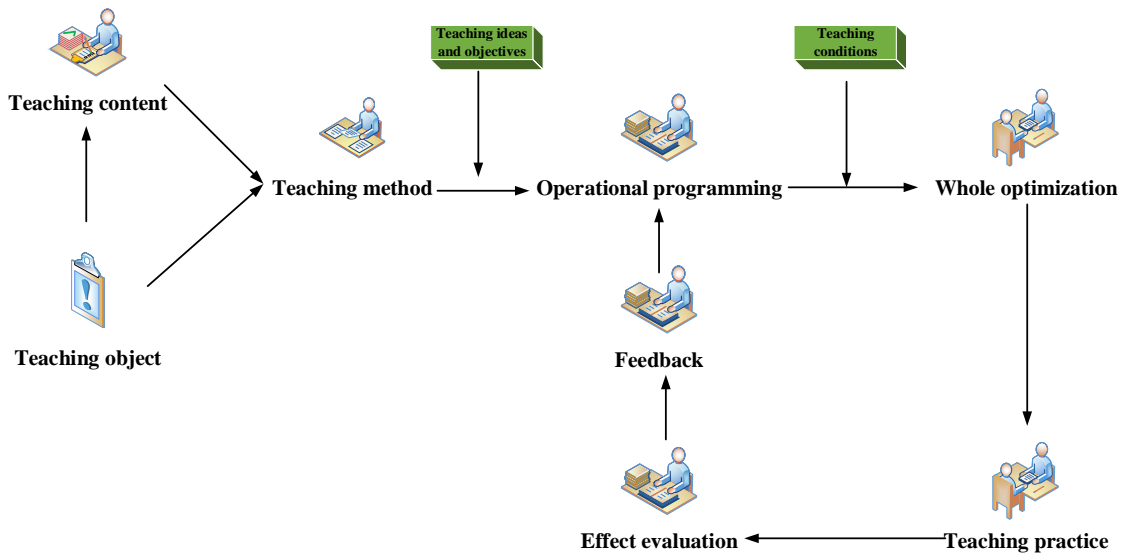
## 3 OPTIMIZATION OF INTERACTIVE MEDIA TRANSLATION TEACHING MODEL BASED ON COMPUTER DATA ANALYSIS

### 3.1 Computer-Aided Interaction Design

The innovation of the big data along the "data - the big data - data driven innovation - data analysis and prediction of the party to develop, in the process large data will inevitably affect the

education innovation, in promoting the high school mathematics content constantly in the process of data, as well as "knowledge chain" and "data link" on the basis of content created the infinite possibility, Cut, play, list, mass customization of mathematical content emerged [9]. Education big data-driven teaching management, the traditional experience management way is difficult to achieve high efficiency of the teaching goal, and through large data mining and collecting education treasure will produce large amounts of digital information in teaching, such as image, video, etc. into processing data, form the education of valuable reference to analysis of large data.

The interactive media translation teaching model exists in a certain space and time, which is embodied in certain translation teaching theories and thoughts, translation teaching objectives, the position and mutual relationship between teachers and students in teaching activities, and how to arrange teachers' teaching and students' learning activities in time [10]. Different teaching theories, teaching objectives, and different arrangements for teachers and students constitute different translation teaching modes, as shown in Figure 1. Therefore, the basic structural factors of translation teaching model are as follows:



**Figure 1:** Basic structural factors of translation teaching model.

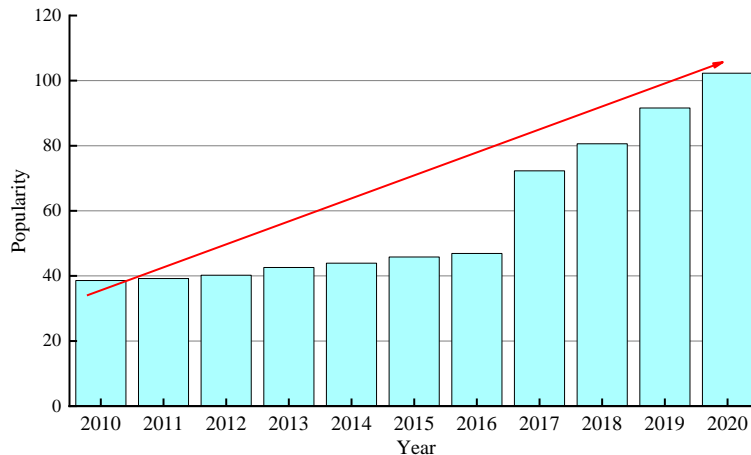
Interactive media translation teaching has its particularity and complexity, which cannot be completely dealt with only by people's thinking and words. If the use of diagrams to reveal the order between the various systems and their functions and relations, people can make a whole image of things. Therefore, objectively speaking, it is in line with the task of modern translation teaching. It emphasizes not only the study of translation knowledge, but also the study and mastery of translation techniques and skills, as well as students' learning objectives and teachers' design schemes. It not only reflects the teaching concept, but also pays attention to the specific operation strategy, so it is operable and has a relatively complete structure and mechanism. It is more concrete and simplified than abstract theory and provides a basic framework for teachers. It is close to teaching practice and easy to be understood, selected and operated by teachers.

### 3.2 Analysis of Visual Communication Technology and Art in New Media Scenes

Computer-aided design course teaching needs to keep pace with The Times and keep up with the development trend of the industry and The Times. In view of the problem of insufficient updating speed of teaching material content, flipped classroom teaching mode also needs to make good use

of online teaching resources in the operation process to enrich teaching content. At present, online learning platforms such as MOOCs, NetEase Open Courses and Khan Academy have abundant resources. Teachers can rely on massive online teaching resources to create videos and recommend relevant video resources for students. On this basis, teachers can also assign learning tasks and hold regular exchange meetings and other activities so that students can share and discuss the knowledge and resources of COMPUTER-aided design. In this way, students can be exposed to the latest technology and knowledge in the field of computer-aided design, so that they can continuously acquire new knowledge and information through independent learning on the premise of laying a solid foundation. This is of great significance to the optimization of computer-aided design course teaching and is of great value to the improvement of students' knowledge and skills.

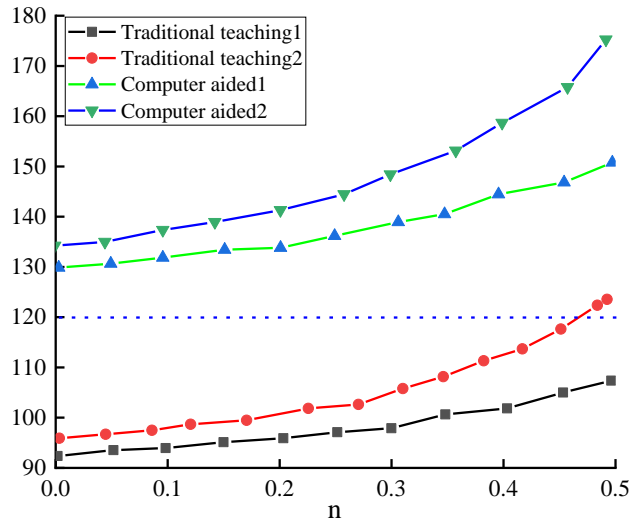
The process of translation determines that translation teaching should fully reflect the interaction of communication, but the traditional translation teaching does not reflect this. Computers have gradually entered the translation classroom and played a decisive role. In fact, the formation and implementation of any teaching mode cannot be separated from the guidance of correct teaching theory, and the practice of computer-aided interactive translation classroom teaching mode is based on constructivism teaching theory. Constructivism learning theory originated from cognitive psychological learning theory in the 20th century and became the theoretical basis of computer-aided instruction and learning in the 1990s. Therefore, constructivism emphasizes the subjectivity of learners and the interaction of the learning process. Under the guidance of constructivism, the study, practice and development of this teaching model should be the direction of translation teaching efforts. Multimedia computer technology has innovated the information transfer mode of translation theory and practice, and created a new teaching mode with teachers as the leading, students as the main body, high efficiency as the goal, and intuitiveness as the characteristic.



**Figure 2:** Computer penetration.

Teachers should establish a new computer-aided interactive teaching model and constantly optimize the system of computer-aided interactive teaching model for language translation in their major. The new computer aided interactive teaching mode can through different text, voice, image, computer, multimedia and modern information network technology, the formation containing class preview preparation, classroom teaching, extracurricular practice development, all kinds of complete translation, translation, compilation, simultaneous interpretation, to preach, depending on the different translation function modules such as the diversification of interactive teaching system platform. The fundamental and best way to cultivate and improve students' practical ability

of professional English translation is to operate and simulate real and concrete translation practice. Teachers should make full use of the market demand of professional translation in modern society, make full use of modern computer education interactive technology and platform, take students as the main body, take professional translation practice as the goal, and let students carry out professional experience of real translation practice or simulated translation practice. To rapidly improve their professional English translation practice ability, the ability to solve the difficulties in professional translation practice and the innovation ability to complete professional translation projects. Such as the establishment of professional translation teaching practice base, with book publishing institutions, translation companies and enterprises and institutions to establish translation business relations.



**Figure 3:** Acceptability of computer aided traditional instruction.

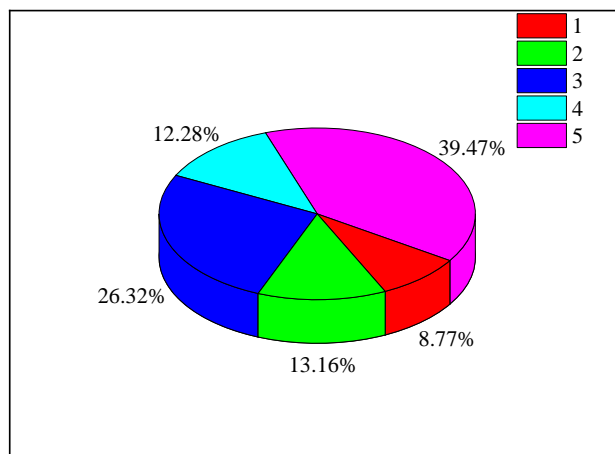
## 4 ANALYSIS OF RESULTS

### 4.1 Computer-Aided Interactive Instruction Results

Computer-aided instruction (CAI) is a technology that uses the advanced performance of computer and related equipment and facilities, and uses carefully designed related teaching software (courseware, network teaching resources) to help teaching, in order to improve teaching quality, teaching level and teaching efficiency. Computer aided instruction is an advanced teaching technology and the application of modern information technology and modern teaching theory in teaching. This kind of teaching technology emphasizes on the courseware running on the computer platform as the core, and the design, production and application of courseware is the comprehensive application of teaching theory, teaching design, program design and multimedia technology. Although the form of computer-aided teaching is a teaching form of computer as a teaching tool, it is parallel with the traditional teaching form and the teaching form of general audio-visual teaching equipment as a tool. However, computer-aided instruction is a new teaching technology in essence. It presents the teaching content with the courseware running on the computer and controls the teaching process with flexible and diverse interactive means and ways to better realize the purpose of teaching and improve the efficiency, quality and level of teaching.

Interaction is the essential characteristic of computer-aided instruction, and the teaching process is the dissemination process of teaching information, which aims at receiving, understanding and applying information correctly. Whether the receiver of information correctly receives, understands and effectively applies the information needs to be fed back to the

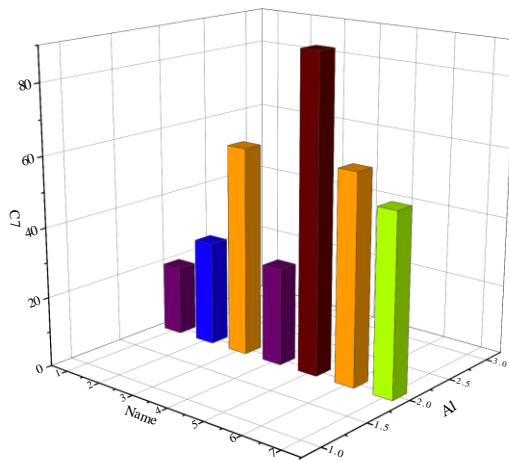
disseminator of information through a certain feedback mechanism, so as to correct the way and process of information dissemination. The more timely the feedback, the more sensitive the receiving system, and the smaller the target deviation. In order to achieve the established teaching objectives, information feedback between teachers and students is indispensable in the teaching process.



**Figure 4:** Different types of interaction assist ratio.

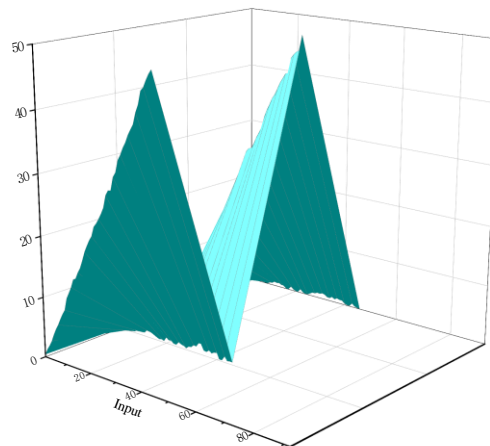
Good teaching methods can stimulate students' enthusiasm for learning, listening carefully and improving the efficiency of classroom learning. The results of the survey show that there are still many problems in the use of modern teaching concepts and modern teaching means. Although the teaching methods of ordinary teachers are more flexible, they still stay in the traditional teaching methods, which are teacher-centered, with teachers teaching on the platform and students learning below. Some classes even have no interactive links. Students are completely passive learners, and the quality of learning depends entirely on teachers' teaching. Students are not their views and ideas, passive accept the teacher's explanation, the awareness of knowledge is limited, if the teachers' teaching level is not high, the textbook is scripted, no vivid rendering, the classroom more will dull, even repels the students, so there will be a teacher on the platform, students do their own thing below. Teaching and learning are not combined, completely disjointed, there is no way to teach students according to their aptitude, let alone learning efficiency.

Figure 5 shows that college English teaching research papers mainly focus on college English curriculum, teaching mode, teaching methods, teaching strategies, teaching requirements, teaching ideas, college English teaching reform and classroom teaching, accounting for nearly 50%. However, there are relatively few articles on teaching evaluation, testing, cultivating students' ability and exploring teaching theories. From the analysis of the main contents of the research, the current college English teaching research mainly focuses on the "teaching" of teachers and "learning" of students, and lacks of research on the teaching environment. Moreover, the research on "teaching" is obviously more than that on "learning", which is unbalanced and lacks certain internal connection.



**Figure 5:** Classification of research contents in interactive media translation teaching.

#### 4.2 Optimization of Interactive Media Translation Teaching Model based on Computer Data Analysis



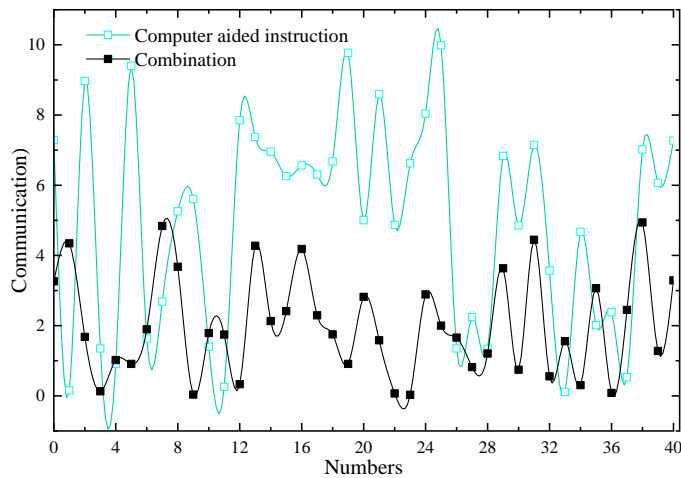
**Figure 6:** Computer - assisted instruction (CAI) grows.

For the smooth progress of action-oriented teaching, it is not enough only to have good hardware facilities, but also to have corresponding software environment for supporting. Otherwise, no matter how good the hardware facilities are, they can only become decoration and cannot play their real role. The software construction mentioned here is mainly the construction of teachers. Only with excellent teachers can we better use the hardware facilities and ensure the development of action-oriented teaching. Action-oriented teaching actively advocates student-centered teaching, so that students really become the main body of the classroom. To achieve this goal, teachers must complete the transformation of roles. Only when they correctly grasp the position of teachers



in action-oriented teaching and deeply understand the role of teachers in action-oriented teaching can they play a vital role in the smooth development of action-oriented teaching.

By comparing the statistical data in Figure 6, we find that there is a certain gap between the "actual role" of college English teachers and the "supposed role" of college English teachers. For example, in the questionnaire, both teachers and students thought teachers should play the role of "friend" (74% and 56.6% respectively) and "motivator" (62% and 40% respectively), while in fact, 52% and 25.3% thought teachers played the role of "friend". The proportion of "motivators" is 40% and 16% respectively, with a difference of 20% to 30%. As for the questionnaire survey on teachers' ability to cultivate students' learning strategies, analysis and problem solving, the statistical results show that the proportion of students who think teachers attach great importance to and use proper methods is 46.5%, less than half; 45.9 students think the method is average, occasionally. In addition, 3.6% and 4% students said that teachers "never" and "do not know" about the cultivation of students' learning strategies and abilities. The proportion of teachers who think they pay great attention to students' learning strategies and ability cultivation is 50% and 50% respectively.



**Figure 7:** Visual communication results.

Teaching evaluation is an important part of curriculum system, and an important means to test teaching quality and promote curriculum construction and development. Scientific evaluation can provide useful information feedback for teaching. It can also help students understand their own learning status, adjust learning strategies and improve learning methods, and better improve students' learning efficiency and learning effect. Diversified and ecological college English teaching evaluation covers all aspects of the curriculum system and has the following characteristics: first, it is developmental. It emphasizes people-oriented and promotes the sustainable development of human beings, that is, the common development of teachers and students as its ultimate goal. The pluralistic and ecological college English teaching evaluation system is a dynamic evaluation method combining formative evaluation and summative evaluation. Formative evaluation refers to the process and development evaluation in the teaching process, including students' self-evaluation, students' mutual evaluation, teachers' evaluation of students and teaching departments' evaluation of students. It is necessary to evaluate the development of students' emotion, attitude, will, character, personality and other non-cognitive factors, and effectively monitor and evaluate the learning process of students. Summative assessment, as opposed to formative assessment, refers to the summative assessment at the end of a teaching period. Summative evaluation mainly refers to the final course examination and level examination which

mainly evaluates students' comprehensive English application ability. This examination not only examines students' reading, writing and translation ability, but also includes students' listening and speaking ability.

## 5 CONCLUSION

The interactive media translation teaching model of computer data analysis is a very complex ecosystem, which is constantly exchanging material, energy and information as well as emotional communication and interaction, forming an organic whole in the contradictory movement of balance, imbalance and new balance. In this system, if a teaching ecological factor is not paid enough attention, other ecological factors acting on each other will be restrained, and the whole teaching effect will not reach the ideal situation. The interactive media translation teaching model of computer data analysis involves how to coordinate the relationship between ecological subjects -- teachers, students and teaching environment, so that the ecological subjects of teachers and students can coexist and develop together in dynamic changes. Computer aided instruction is unlikely to replace traditional classroom instruction eventually. The crowding factor in computer data analysis is used to define the degree of control or constraint of teachers on students. Students within the crowding degree gather near teachers, and some students who are difficult to restrain follow top students. By optimizing and reacting to typical test functions. The modeling experiment of regeneration neural network verifies the effectiveness of the proposed algorithm. The object of this study has certain limitations. Only the teaching improvement suggestions on promoting deep learning are put forward at the theoretical level, and their practical feasibility is not verified by quoting them into practice. Therefore, the practical application effect is still worth considering. However, I still hope to provide some reference for the majority of teachers to pay attention to deep learning, understand the relevant connotation of deep learning, and adopt appropriate teaching methods.

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Jing Yin, <https://orcid.org/0000-0001-8667-9381>

Ting Yin, <https://orcid.org/0000-0002-4150-2782>

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