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Retraction

Retracted: On English Courses and Teaching Strategies in Compound Application-Oriented Talents Training Based on the Education Ideas of CDIO in the Construction of Smart Cities

Security and Communication Networks

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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.

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] Z. Xie, "On English Courses and Teaching Strategies in Compound Application-Oriented Talents Training Based on the Education Ideas of CDIO in the Construction of Smart Cities," *Security and Communication Networks*, vol. 2022, Article ID 5053726, 12 pages, 2022.

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Research Article

On English Courses and Teaching Strategies in Compound Application-Oriented Talents Training Based on the Education Ideas of CDIO in the Construction of Smart Cities

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To improve the level of English education in China and promote the cultivation of compound application-oriented talents in colleges and universities, this research integrates the concept of conceive design implement operate (CDIO) into college English education. First, the CDIO educational concept is introduced in detail. Second, the moth-flame optimization (MFO) algorithm and the support vector machine (SVM) model by the MFO algorithm are presented, and they are applied to teaching evaluation, and then the teaching plan is proposed by the CDIO concept. The teaching evaluation model is applied to the English teaching of students in class A with ordinary learning levels in a university in Hengyang City. The implementation method of the teaching plan is explained in detail by taking "Unit 2 Charlie Chaplin" in the textbook "New Horizons College English" as an example. Finally, the accuracy of the MFO-SVM model for teaching evaluation is verified by simulation analysis, and the corresponding teaching strategies are summarized through teaching evaluation and customization of teaching plans. The experimental results reveal that the MFO-SVM model has an accuracy of 96.43% in teaching evaluation, while the extreme learning machine (ELM), SVM, and back propagation neural network (BPNN) models have an accuracy of 92.27%, 90.45%, and 86.36%, respectively in the evaluation results of the teaching quality. The summarized teaching strategies are mainly divided into four parts, namely, autonomous learning, project-based teaching, dynamic generation and information feedback, and production teaching. This research has a certain reference for the current reform of English education in China and the cultivation of compound application-oriented talents.

1. Introduction

In the era of globalization, English has gradually become the most important subject for students. As a key place for cultivating professional talents, English teaching in colleges and universities has also been valued by students and teachers. English is a global language. About 2 billion people around the world use it. About 45 countries use it as the official language. Therefore, English has become a vital tool for international communication and scientific and cultural exchanges. It has an irreplaceable position in cross-culturalism [1]. As a compulsory course in university study, English needs to be paid attention to by teachers and students.

In recent years, domestic English education experts have also reformed English education in colleges and universities, thereby improving the teaching effect of English education and cultivating compound application-oriented talents [2]. Sun (2020) proposed that the English teaching in colleges and universities overemphasizes the tool of English, overemphasizes the teaching of knowledge, and neglects the cultivation of ability [3]. Wu (2021) pointed out that the classified guidance and characteristic development are the reform and development direction of college English teaching in the future. These four aspects of English education reform opinions are put forward, that is, to further strengthen the curriculum construction, promote the reform of the teaching mode, build a more complete college English curriculum system, and create a high-quality professional teacher team of college English curriculum [4]. With the continuous progress of educational reform, many domestic

colleges and universities have begun to try to introduce the concept of conceive design implement operate (CDIO) in educational reform. So far, Shantou University, Tsinghua University, School of Software, Central South University, and many other universities have implemented CDIO teaching reform in talent training mode, curriculum teaching reform, curriculum system construction, major construction, etc., and have achieved some staged results [5]. For the moment, the research on applying CDIO to college English teaching is still in the exploratory stage, so this research attempts to introduce the CDIO concept into college English teaching and formulate an English teaching strategy on account of the CDIO concept to cultivate compound application-oriented talents.

To promote the reform of English education in China and cultivate compound application-oriented talents for comprehensive development, it attempts to introduce the CDIO concept into college English teaching strategies. First, the CDIO concept is introduced in detail; then, the moth-flame optimization (MFO) algorithm is presented, and a support vector machine (SVM) model on the strength of the MFO algorithm is constructed to make an evaluation of the English teaching mode. Next, the CDIO concept is integrated into the teaching, and at last, the corresponding teaching strategies are put forward through the analysis of the results of the teaching mode evaluation. It has a reference for the current reform of English education in China and the cultivation of compound application-oriented talents.

2. English Education for Cultivating Compound Application-Oriented Talents under CDIO Concept

2.1. CDIO Concept. The CDIO concept is the latest achievement of the international engineering education reform in recent years. It originated from an engineering education reform plan initiated in 2000 by four engineering and technical schools including the Massachusetts Institute of Technology (MIT) and the KTH Royal Institute of Technology [6]. The basic CDIO education model consists of four basic links: conceive, design, implement, and operate. This model encourages students to actively study and practice, maps the whole process of product production to talent training, and aims to cultivate students' comprehensive qualities such as lifelong learning ability, large-scale system control ability, and team communication ability [7, 8]. The core content of CDIO is as follows: a vision, a syllabus, and twelve standards.

CDIO's vision is to provide students with an engineering education that emphasizes the fundamentals of engineering and builds on the context of the idea-design-implement-operate process of real-world products and systems. Students are cultivated into a comprehensive compound applied talent that integrates knowledge, quality, and ability [9].

The CDIO syllabus describes in detail all the knowledge, abilities, and qualities that engineering students should possess, including four levels, as shown in Figure 1.

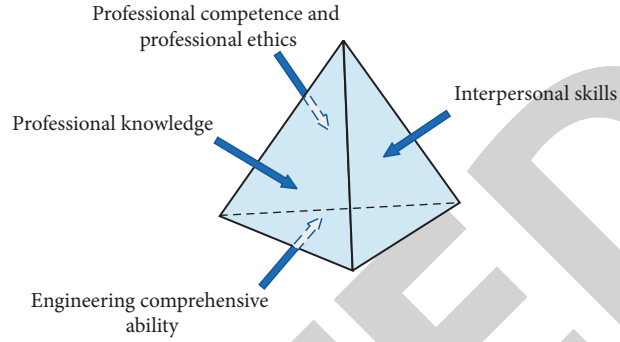

Figure 1: Four levels of CDIO syllabus.

In Figure 1, the CDIO syllabus describes the talent training goals in detail. The syllabus is based on four levels: professional knowledge, engineers' professional ability and professional ethics, teamwork and communication ability, and comprehensive engineering ability in the enterprise and social environment. The target system formed by the knowledge and ability that engineers should have is gradually refined and analyzed. The target system has the characteristics of specificity and observability and has important guiding significance for students and teachers [10].

CDIO's twelve standards are the criteria for judging whether to practice CDIO's teaching concept and provide guidance on training plans, curriculum structure, teaching methods, teaching evaluation, and student assessment. The contents of the twelve standards of CDIO are displayed in Figure 2.

In Figure 2, the CDIO standards are specific guidelines for the cultivation method. Standard 1 examines the concept of professional training. Standards 2–4 examine the formulation of curriculum plans. Standards 5 and 6 inspect the experience from design to realization and practice sites. Standards 7 and 8 explore education and teaching methods. Standards 9 and 10 investigate the improvement of teachers' abilities. Standards 11 and 12 study the content of assessment and evaluation [11].

CDIO's educational concept breaks the embarrassing situation of "separately" among the courses in the past and unites the courses closely and organically under the goal of talent training. Although this concept is proposed to cultivate innovative engineering talents for social needs, it is also applicable to college English education, in line with the "College English Course Teaching Requirements" that college English courses are not only a basic language course, but also a quality education course to broaden knowledge and understand world culture. It is both instrumental and humanistic [12]. The CDIO educational concept is applied to the course implementation process of college English education, so that various abilities can penetrate and reinforce each other in the course, and these abilities can promote the cultivation of compound talents.

2.2. MFO Algorithm. In the MFO algorithm, the moth is represented by m. Assuming that m is a candidate solution to the problem to be solved. In the feasible domain, the vector position of m is used to represent the variable to be solved;

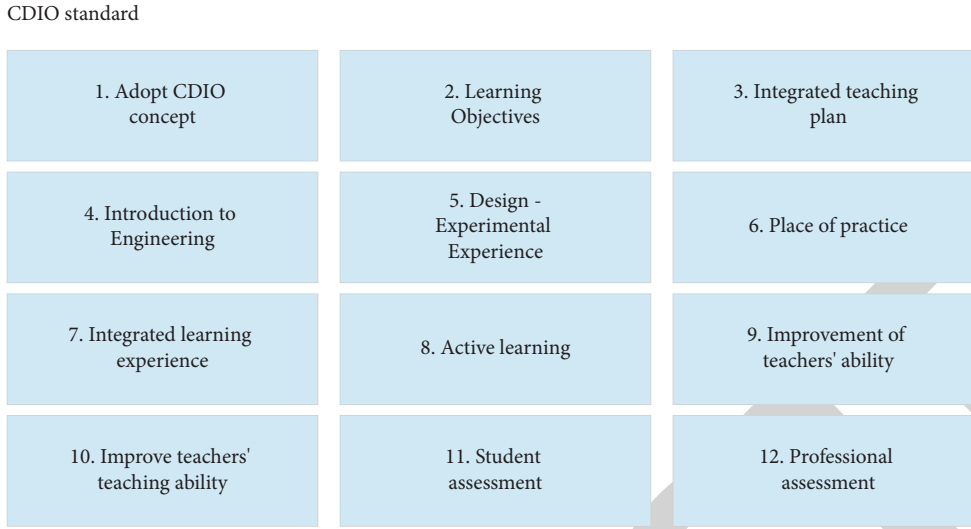

Figure 2: CDIO's twelve standards.

then, m can fly in a one-dimensional or even multi-dimensional manner in the feasible domain [13]. The flight path is the range of the solution, and its position coordinates are the possible solutions.

The MFO algorithm has strong parallel optimization ability and good overall characteristics. It is able to extensively explore the search space and discover regions with greater probability where there is a global optimum [14]. Since the MFO algorithm essentially belongs to the category of particle swarm optimization (PSO), the moth population can be expressed by the following matrix:

$$M = \begin{bmatrix} m_{1,1} & m_{1,2} & \cdots & m_{1,d} \\ m_{2,1} & m_{2,2} & \cdots & m_{2,d} \\ \vdots & \vdots & \vdots & \vdots \\ m_{n,1} & m_{n,2} & \cdots & m_{n,d} \end{bmatrix}. \tag{1}$$

In equation (1), d is the number of quantities to be optimized, n represents the population size, and M is the individual spatial position [15]. The fitness value of the moth is stored in the relevant array, as shown in the following equation:

$$OM = \begin{bmatrix} OM_1 \\ OM_2 \\ \vdots \\ OM_n \end{bmatrix}, \tag{2}$$

where OM is the fitness of individual moths.

In the MFO algorithm, each moth has a corresponding flame, the moth flies along its corresponding flame to update its position, and there are multiple moths in the population. This only corresponding method will not make multiple moths fly around a flame at the same time, which can make moths fully search in the global exploration space, avoid falling into the local optimal situation, and enhance the optimization ability [16]. From this, it can be concluded that the dimensions of the moth and the flame are the same. If the flame is represented by F, the variable matrix describing the position of the flame in the search space is exhibited in the following equation:

$$F = \begin{bmatrix} F_{1,1} & F_{1,2} & \cdots & F_{1,d} \\ F_{2,1} & F_{2,2} & \cdots & F_{2,d} \\ \vdots & \vdots & \vdots & \vdots \\ F_{n,1} & F_{n,2} & \cdots & F_{n,d} \end{bmatrix}, \tag{3}$$

where n refers to the number of flames and d means the dimension size, that is, the number of control variables to be determined [17]. The fitness value of the flame is as follows:

$$OF = \begin{bmatrix} OF_1 \\ OF_2 \\ \vdots \\ OF_n \end{bmatrix}, \tag{4}$$

where OF is the individual fitness of the flame. The best position of the moth can be obtained by updating the flame position, so the MFO algorithm is written as follows:

$$\text{MFO} = (I, P, K), \tag{5}$$

where K denotes the end function of the algorithm, P stands for the moth movement function, and I is the moth population size. The update strategy of the moth-flame position is demonstrated in the following equation:

$$M_i = S\left(M_i, F_j\right), \tag{6}$$

where S manifests the swirl function, M_i signifies the position of the ith individual, and F_j denotes the jth flame [18]. The swirl function of the individual flight of the moth is defined, as indicated in thefollowing equation:

$$S\left(M_i, F_j\right) = D_i e^{rt} \cos(2\pi t) + F_j, \tag{7}$$

where $t \in [-1, 1]$ and r are the swirl constant and $D_i = |F_j - M_i|$ represents the distance between the jth flame and the ith moth [19]. To improve the convergence speed of the MFO, the number of adaptively updated flames is as follows:

$$\text{flame} - \text{No.} = \text{round}\left(N - \frac{N-1}{T} \cdot l\right). \tag{8}$$

In equation (8), l and T are the current and maximum iterations, respectively, and N stands for the maximum number of flames [20].

2.3. Evaluation of English Teaching Model Based on MFO-SVM. The English teaching evaluation system is a momentous indicator to measure the effect of English learning, and the quality of its selection directly affects the teaching activities. In addition to emphasizing the comprehensive examination of the teaching system and students' comprehensive ability, the teaching evaluation in the CDIO standard also pay attention to the negative effect of the evaluation results on teachers, students, and other stakeholders.

The MFO model is combined with the SVM model to evaluate the English teaching model. The SVM nonlinear model is expressed by the following equation:

$$\min \Phi(\omega, \xi) = \frac{1}{2}\|\omega\|^2 + C\sum_{i=1}^{l} \xi_i s.t. \begin{cases} y_i\left[\omega^T \varphi(x_i) + b\right] \geq 1 - \xi_i \\ \\ \xi_i \geq 0, i = 1, 2, \cdots, l \end{cases}, \tag{9}$$

where ξ_i and C are slack variables and penalty terms, respectively [21]. The Lagrangian function of the SVM model is written in the following equation:

$$L(\omega, b, \xi, a, \beta) = \Phi(\omega, \xi) - \sum_{i=1}^{l} \alpha_i \left\{ y_i\left[\omega^{\mathrm{T}} \varphi(x_i) + b\right] - 1 + \xi_i \right\} - \sum_{i=1}^{l} \beta_i \xi_i. \tag{10}$$

The SVM decision function is demonstrated in the following equation:

$$f(x) = \text{sign}\left[\sum_{i=1}^{l} \alpha_i y_i K(x, x_i) + b\right], \tag{11}$$

where $K(x, x_i)$ is the kernel function [22]. Radial basis function (RBF) is used as the kernel function of SVM, as demonstrated in the following equation:

$$K\left(x_i, x_j\right) = \exp\left(-\gamma x_i - x_j^2\right). \tag{12}$$

The penalty term C and the kernel parameter γ directly affect the accuracy of the SVM model. The larger the penalty term C, the higher the approximation of the model and the higher the degree of fitting, but an excessively large penalty term will reduce the generalization ability of the model [23]. The kernel parameter γ mainly affects the classification accuracy of the SVM model. Therefore, in the process of constructing the SVM model, the penalty term C and the kernel parameter γ must be optimized to achieve the optimal value [24]. The MFO algorithm is adopted to optimize the penalty term C and the kernel parameter γ, and the classification accuracy T is used as the objective function, which is defined as expressed in the following equation:

$$T = \frac{\text{right}}{\text{total}} \times 100\%. \tag{13}$$

In equation (13), total stands for the total number of samples and right refers to the number of correctly classified samples [25].

The establishment of an English teaching evaluation system by the CDIO concept is illustrated in Figure 3.

The specific steps of the algorithm process of evaluation of English teaching model using MFO-SVM are shown in Figure 4.

2.4. Teaching Objectives and Curriculum CDIO Implementation. The purpose of college English teaching is to cultivate students' comprehensive English application ability and autonomous learning ability, so that students can master good language learning methods and improve students' comprehensive cultural literacy [26]. The specific teaching objectives of college English based on the CDIO education concept are exhibited in Figure 5.

For the teaching objectives in Figure 5, an implementation plan is set. The college English course lasts for two years; that is, the first and second grades of the university, with a total of 204 class hours, an average of 3 class hours per week, of which 2 class hours are reading and writing courses, and 2 class hours every two weeks are listening and speaking courses. One unit of course teaching is completed every two weeks. The reading and writing courses are taught in ordinary multimedia classrooms, and the listening and speaking courses are taught on the network resource platform of language laboratory. Meanwhile, the corresponding second classroom activities are carried out according to the theme content of each unit. The specific implementation mode is illustrated in Figure 6.

In Figure 6, the specific implementation process is as follows:

Conceive Stage. The teacher assigns project tasks and provides auxiliary information. After students obtain the information, they complete the conception of the project implementation plan and task decomposition in combination with the project tasks. In this teaching model, learning tasks are completed in groups. Each class forms a study group with a dormitory as a unit, and each group elects a group leader to be responsible for organizing study activities. Class A has a total of 42 students, split into 7 groups of 6 students. For the reading and writing course, each group selects a theme item from five items: "Early Life", "Art Career", "Art Achievement", "Influence and Controversy", "Art and Me", and the other two groups completed the corresponding listening and speaking course items and the

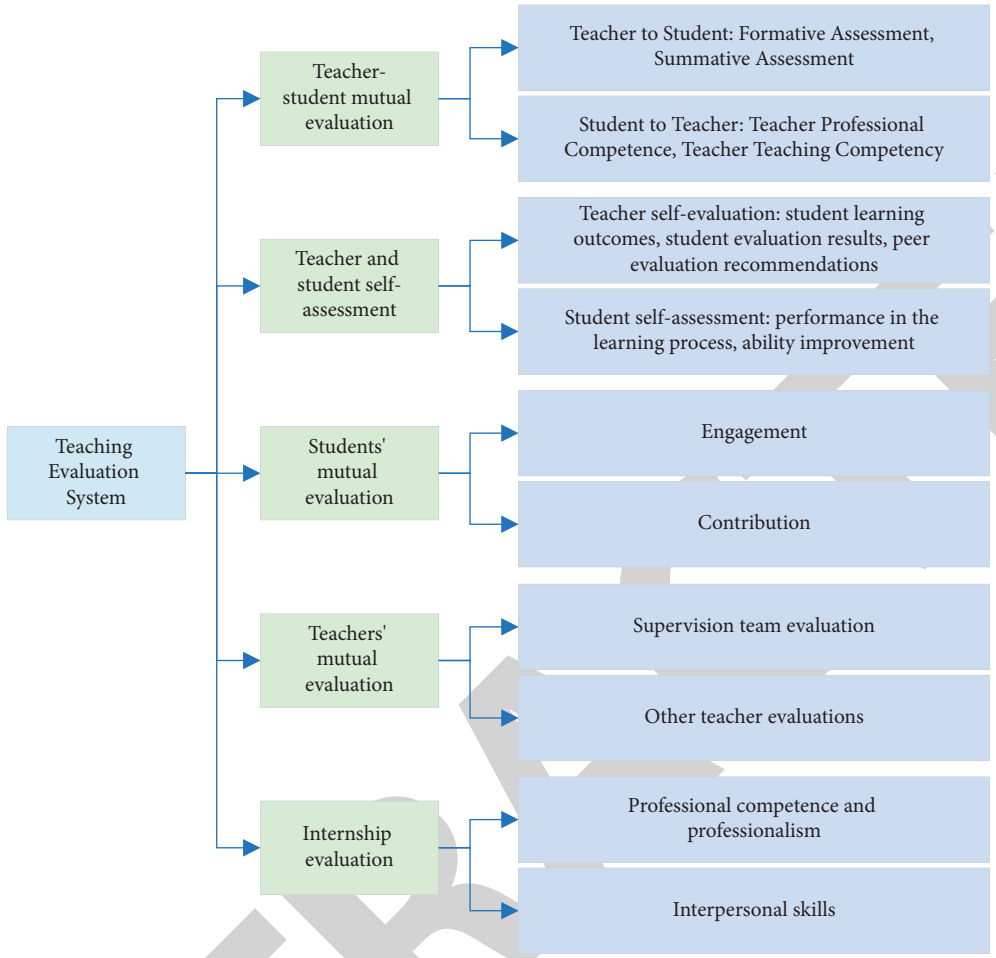

Figure 3: Evaluation indicators of English teaching by the CDIO concept.

second classroom items. Each group selects the group's thematic project according to their own interests and discusses the possibility of project completion and the form of the final result. If there are conflicting choices, teachers can negotiate and mediate. Meanwhile, teachers provide guidance on learning methods, including objectives, content, form, and assessment methods.

Design Stage. The team members have a clear division of labor and clarify the tasks and requirements of each member. Then, group discussions are conducted to summarize and analyze the information. The members are divided into groups to design the scheme. The teacher guides each group to discuss and design its own implementation plan, and students can experience the knowledge of their respective modules in the process of completing the task, so that students can learn by "doing". It is necessary to understand the characteristics of each team member, including personality, language skills, hobbies, and specialties, to carry out a reasonable division of labor and give full play to the enthusiasm of each member to ensure the completion of the task.

Implement Stage. Team members complete their respective tasks in accordance with the division of labor under the guidance of teachers. The completion of the task requires the cooperation and cooperation of all team members. For example, in the "Art Career" theme project, regarding Charlie Chaplin's artistic career, according to the discussion of the panel members, the project can be split into 3 work tasks, namely, "stage career", "immigrating to the United States," and "exploring the film director." Three students can be assigned to collect relevant information, one is responsible for sorting out the relevant knowledge points of the text, one is responsible for designing and producing PowerPoint (PPT), and one is responsible for PPT presentation and modification. Team members work together to complete project tasks.

Operate Stage. The team presents the results of the project, and the teacher organizes the work well to ensure the orderly progress of the classroom. The leader of each group is fully responsible for the task of the group, and each group selects a representative to present the group's project results in the classroom. The content involves the design ideas, research process, and acquired knowledge of the group's tasks. The group's questions and opinions can be raised for each group's reference, discussion, and improvement. After each group presentation is completed, teachers should give timely supplementary guidance to ensure the atmosphere and progress of the classroom.

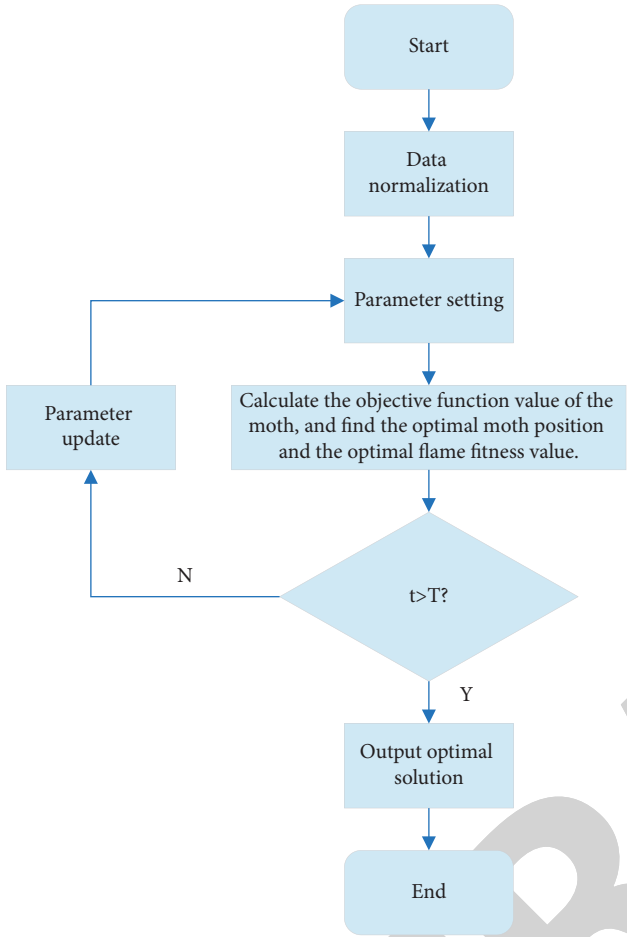

Figure 4: The algorithm process of the evaluation of English teaching model using MFO-SVM.

One of the outstanding features of the CDIO concept is the emphasis on project-based teaching, so the college English teaching under the CDIO concept mainly adopts the method [27]. In this method, teachers provide learners with thematic tasks related to classroom teaching content and instructions for collaborative communication, emphasizing that problems can be solved through learners' subjectivity discussion, research, and collaboration. It can enhance students' practical ability to acquire, analyze, process, and use information, and cultivate a good sense of innovation and cooperation spirit [28]. Moreover, teachers should be good at using a variety of teaching strategies, methods, and means to inspire students' innovative thinking, stimulate students' learning potential, and promote students' mental development, such as using a communicative approach, audiolingual method, total physical response, and silence way for teaching. Teaching activities are organized through inspiration, discussion, communication, cooperation, debate, scene simulation, etc., to encourage students to use media, the Internet, the second classroom, and other channels to collect humanistic knowledge related to the project theme. All students are encouraged to participate, cooperate in division of labor, share information and experience, and cultivate students' teamwork spirit and innovation ability [29].

2.5. Teaching Strategies. According to the evaluation results of the MFO-SVM model on teaching quality and the implementation of the teaching model incorporating the CDIO concept, the CDIO teaching model is finally summarized, as shown in Figure 7.

In Figure 7, the CDIO teaching model is that teachers use teaching methods in a suitable teaching environment, and students use learning methods to interact and learn from each other. Knowledge is updated and interacted between teachers and teaching content. Students acquire knowledge from teaching content, and students' needs promote the updating of teaching content. Under the support of the integrated teaching system, the teaching objectives are determined, and the teaching objectives in turn determine the teaching content. Through teaching evaluation, teachers' teaching effect is improved, and students' knowledge acquisition and ability cultivation are promoted. The "teaching" and "learning" in the CDIO educational concept are different from the traditional concepts. Here, "learning" is the driving force. Therefore, in the implementation of the CDIO educational concept, students must be guided to play an active role.

Through the above analysis, the teaching strategies of compound application-oriented talents training by the CDIO concept are finally formulated, as displayed in Figure 8.

In Figure 8, the teaching strategies for compound application-oriented talents training by the CDIO concept are mainly split into 4 strategies, namely, production teaching, project-based teaching, dynamic generation and information feedback, and autonomous learning. The specific content of each strategy is as follows:

The production teaching strategy can greatly stimulate students' interest in learning and expand the time and space of students' learning. Teaching is mainly carried out through problem-solving, discovery learning, and inquiry teaching. Problem-solving is to let students take the real problems they face as the starting point of learning, and let students acquire the required knowledge and skills in the process of real problem-solving. The advantage of the problem-solving method is that it can promote the combination of theory and practice and cultivate students' ability to apply knowledge and analyze and solve problems through the process of solving. Discovery learning and inquiry teaching can not only stimulate students' learning interest and spirit of exploration but also encourage students to explore knowledge beyond textbooks. In the process of discovery learning, libraries and network resources are of great significance.

Project-based teaching strategy is a kind of experiential teaching strategy. During this process, students do not passively accept the knowledge taught by teachers, but directly participate in teaching activities emotionally and behaviorally, and construct knowledge through personal experience. It is mainly taught through on-site inspection and role simulations. On-site inspection can enable learners to obtain first-hand materials and learn relevant knowledge through synthesis. Role simulation is to use simulation teaching to mobilize students' initiative in learning and enhance the interaction of teaching. Simulation teaching

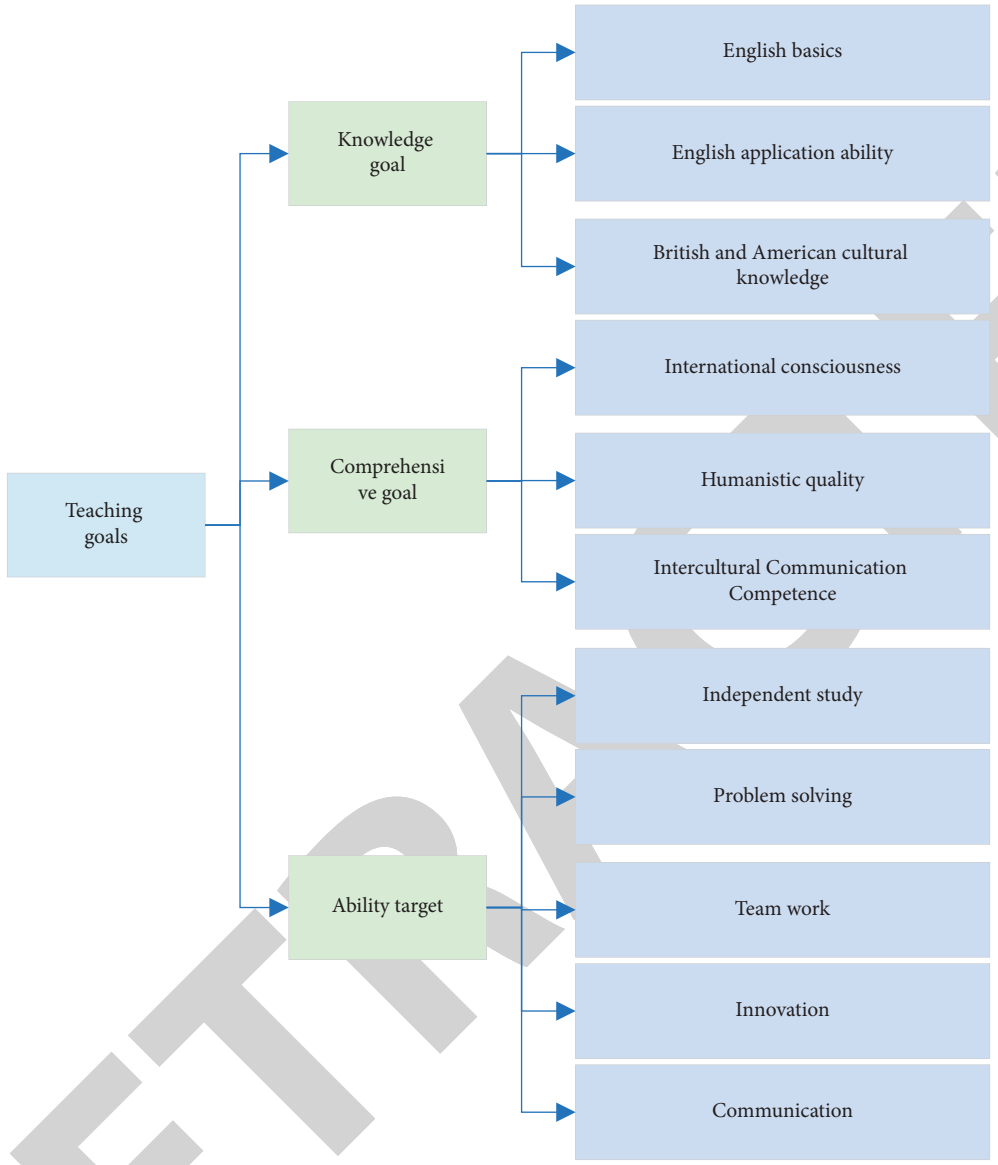

Figure 5: The specific teaching objectives of college English based on the CDIO education concept.

involves a wide range of knowledge, strong practicality, and high requirements for teachers' theoretical knowledge level, practical experience, and problem-solving ability.

The strategy of dynamic generation and information feedback is a kind of interactive teaching strategy. This kind of classroom teaching is not a simple process of knowledge memory and learning, but a process of mutual learning, mutual growth, and common progress between teachers and students. Its main teaching methods cover collaborative learning, dialogue learning, and discussion and debate. Collaborative learning is a group or team-based teaching method, and the collaborative work of group members is a critical part of achieving learning goals and is conducive to cultivating students' team spirit. Dialogue learning is through verbal dialogue, understanding dialogue, and reflective dialogue to promote students to discover problems, explore problems, and produce corresponding thinking and communication. Discussion and debate can enable students to discover problems from different perspectives in this process.

Autonomous learning strategy is a learning strategy, in which students complete the learning process independently and achieve personal development. Judging from the apparent characteristics, students complete their learning tasks independently, but the role of teachers' guidance and supervision cannot be ignored. The commonly used teaching methods comprise writing essays, computer-assisted instruction (CAI), literature study reports, homework, project-based learning (PBL), scaffolding instruction, random entry instruction, and others.

Each teaching strategy or teaching method has its strengths and weaknesses. In the process of teaching, teachers and students should consider comprehensively, choose suitable teaching strategies, and constantly comprehend, summarize, and improve in long-term teaching and learning practice.

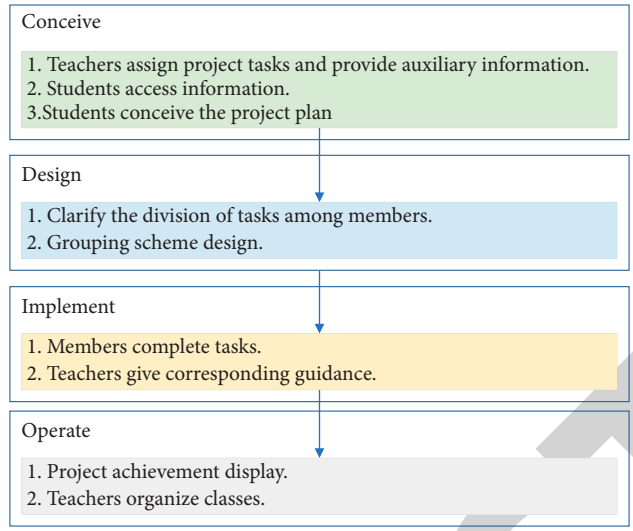

Figure 6: Implementation mode of course CDIO.

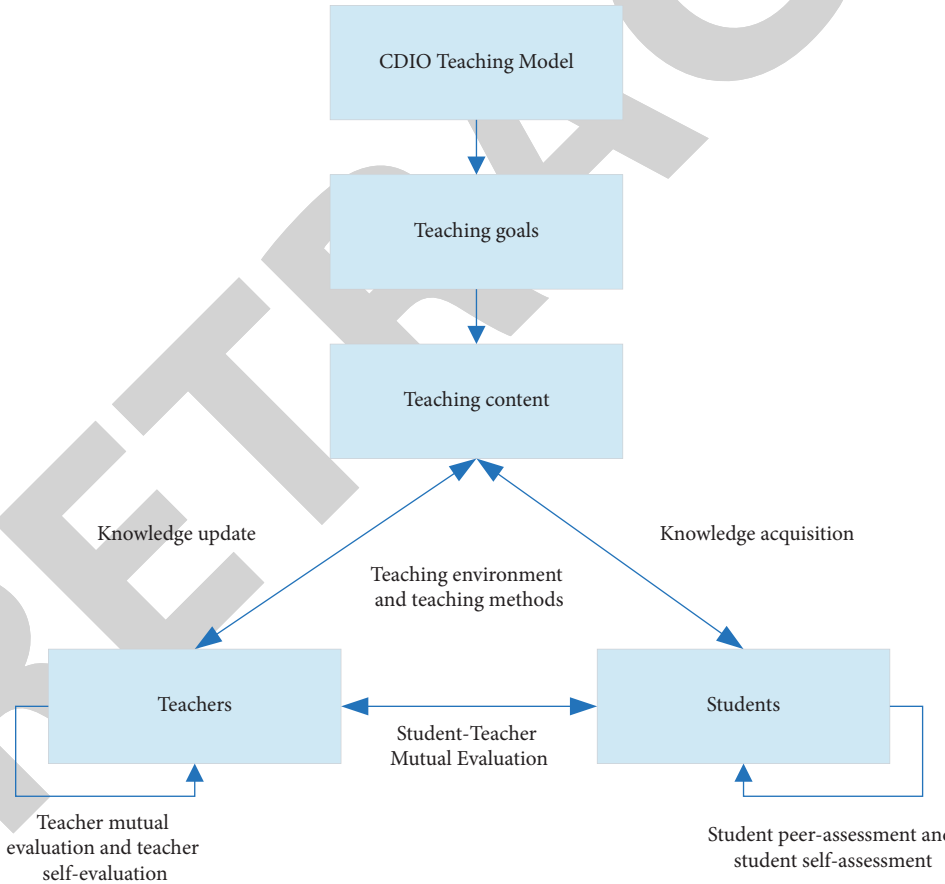

Figure 7: Teaching model of CDIO concept.

2.6. Experimental Design and Research Content. To verify the reliability and validity of the MFO-SVM model for evaluating the English teaching model, the teaching quality of scientific and technological English is divided into three levels: good, medium, and poor, which are respectively level 1, level 2, and level 3. The training samples of different teaching quality both are 100, and the test sample is 50. The accuracy and the false positive rate (FPR) are selected as the criteria for evaluating the quality of English teaching. The calculation of the accuracy is shown in the following equation:

$$T = \frac{A}{B} \times 100\%, \tag{14}$$

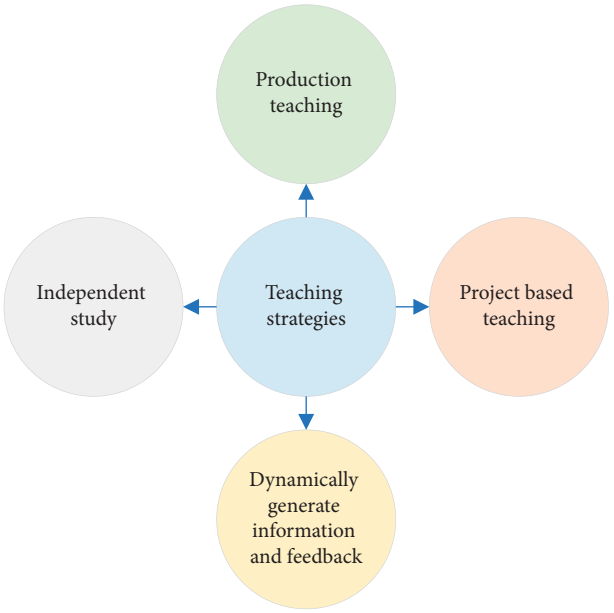

Figure 8: The teaching strategies of compound application-oriented talents training by the CDIO concept.

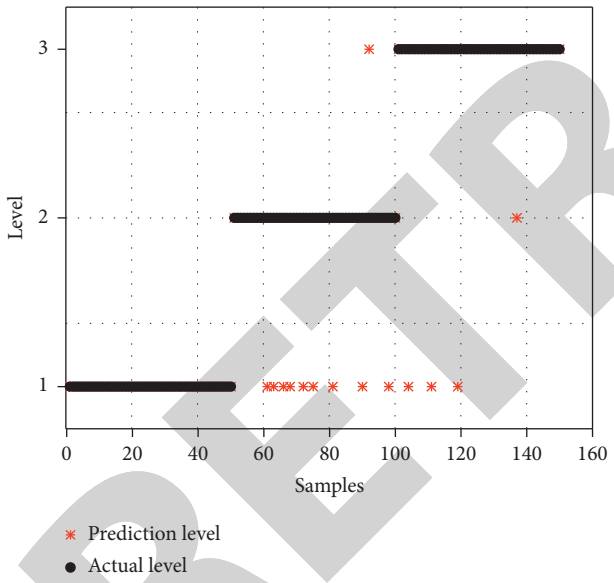

Figure 9: Evaluation results of the MFO-SVM model.

where T means the accuracy, A is the number of accurate recognitions, and B refers to the total number. The accuracy reflects the frequency of accurate recognition of teaching quality.

The computation of FPR is shown in the following equation:

$$F_{ij} = \frac{W}{H} \times 100\%, \tag{15}$$

where H shows the number of teaching quality at the ith level, W indicates the number of misjudged the ith level of teaching quality as the jth level of teaching quality, and F expresses the FPR.

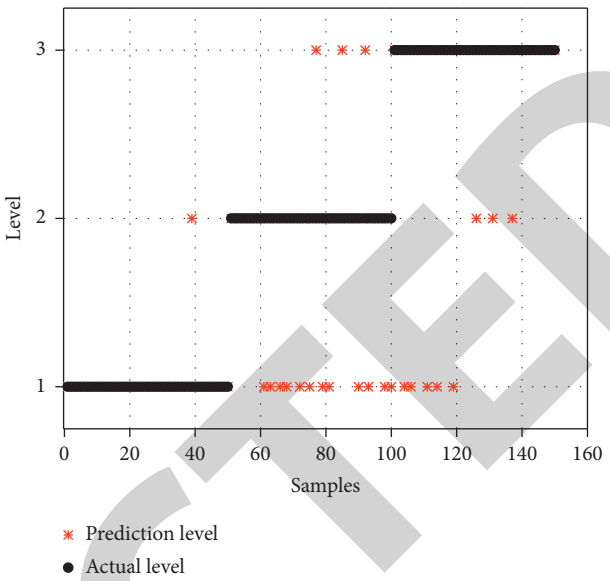

Figure 10: Evaluation results of the ELM model.

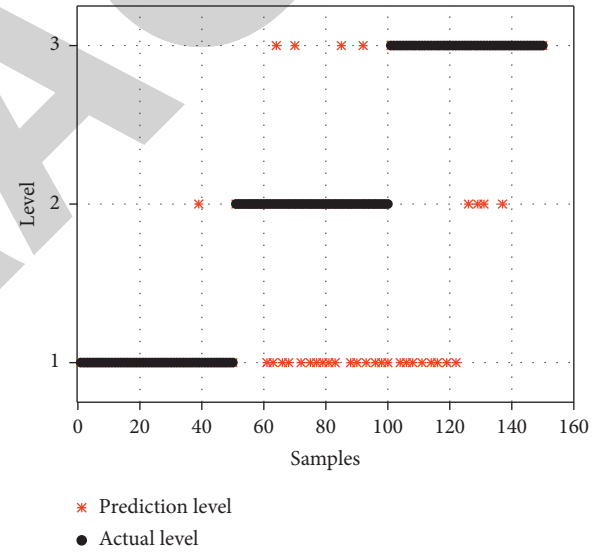

Figure 11: Evaluation results of the SVM model.

Taking the students of Class A of a university in Hengyang as an example, the textbook is "New Horizons College English," and one of the textbooks "Unit 2 Charlie Chaplin" is taken as an example to discuss the project implementation of the CDIO education model in college English teaching. The group implements the tasks according to the division of labor. After each group demonstration, the teacher provides supplementary guidance in time to ensure the classroom atmosphere and progress.

3. Analysis of Experimental Results

3.1. Verification of the Accuracy of the Teaching Quality Evaluation Model. To verify the effect of the MFO-SVM model on the evaluation of English teaching quality, extreme learning machine (ELM), SVM, and back propagation

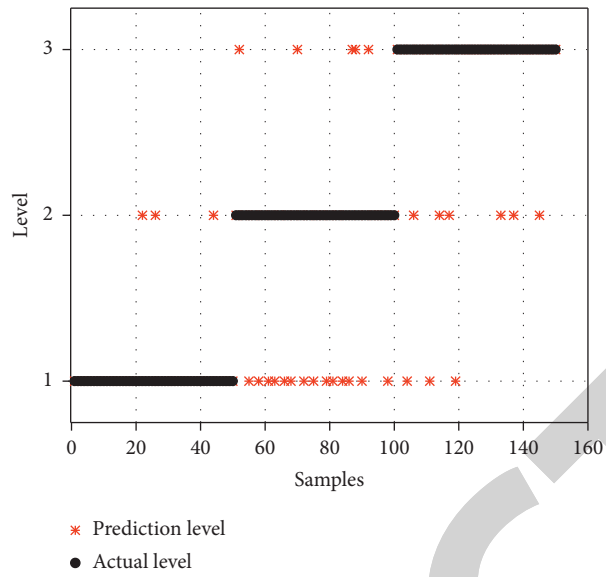

Figure 12: Evaluation results of the BPNN model.

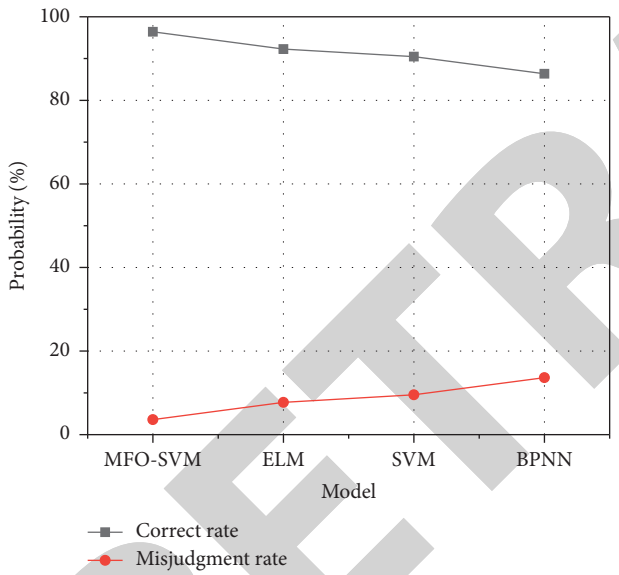

Figure 13: Evaluation results of teaching quality.

neural network (BPNN) algorithms are added for comparison. The maximum number of iterations for the MFO parameters is set to 100, the maximum number of flames is 50, the moth population size is 10, and the swirl constant is 1.5. The comparison results of the four models are illustrated in Figures 9 to 12.

In Figures 9 to 12, if the actual category and the evaluation category overlap, it means that the evaluation category of teaching quality is consistent with the actual category, which illustrates that the result of the teaching quality evaluation is objective and correct, and it also shows that the evaluation effect of the model is better. In Figure 9, the MFO-SVM model is used for evaluation, and the actual category and the evaluation category have the most overlapping points and the highest degree of coincidence. In Figure 10, the ELM model is used for evaluation, and the degree of coincidence is second only to that of Figure 9; the second is the SVM model, as exhibited in Figure 11. The worst degree of coincidence is the evaluation result of the BPNN model, as illustrated in Figure 12. In Figures 9 to 12, compared with the other three models, the evaluation results of the MFO-SVM model have more overlapping points, and the evaluation results are more accurate.

3.2. Accuracy and FPR Analysis of Teaching Quality Evaluation Model. The MFO-SVM model is compared with the ELM, SVM, and BPNN model algorithms for the accuracy and FPR of the teaching evaluation results. After calculation, the accuracy and FPR of each model are demonstrated in Figure 13.

Figure 13 testifies that the accuracy of the evaluation results of the MFO-SVM is 96.43%, and the FPR is 3.57%; the accuracy of the ELM model is 92.27%, and the FPR is 7.73%; the accuracy of the SVM model is 90.45%, and the FPR is 9.55%; the accuracy of the BPNN model is 86.36%, and the FPR is 13.64%. It can be proved that the evaluation results of the proposed MFO-SVM model on teaching quality have a higher accuracy than other models.

4. Conclusion

It aims to improve the English teaching effect of Chinese colleges and cultivate comprehensive application-oriented talents. An MFO-SVM teaching quality evaluation model based on the CDIO concept is constructed. The practicability of the MFO-SVM teaching quality evaluation model is proved by simulation experiments, and the teaching strategies are summarized through this model and teaching plan. The experimental results testify that the evaluation results of the MFO-SVM model's teaching quality are more accurate than other models. In the end, the summed-up teaching strategies for compound application-oriented talents

cultivation by using the CDIO concept are mainly divided into 4 strategies, namely, project-based teaching, production teaching, dynamic generation and information feedback strategies, and autonomous learning. Due to the limited ability, the proposed teaching strategy is mainly applicable to the teaching of basic English in colleges and universities. For professional English with a higher professional level, the research object has certain limitations, and the scope of applicability is relatively narrow. In the follow-up, more in-depth exploration and excavation are needed to expand the scope of research. This research has a certain role in promoting English reform in Chinese colleges and universities and the cultivation of compound applied talents. The construction of a smart city is a systematic project, which requires multidepartment and multifield collaboration to speed up the pace of urban construction. The reform of teaching English in universities promotes the continuous progress of college education, which can further guarantee and promote the construction and long-term development of smart cities.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The author declares that there are no conflicts of interest.

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