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Exploring the Reform Model of Graded Progressive University English Teaching in an Educational Ecological Environment

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ABSTRACT

In today's university era, reforming the English teaching model has become a major research topic for researchers. Based on this, this paper adopts a hierarchical and progressive model construction method to further explore the reform model of university English teaching in the context of educational ecology. First, this paper discusses the development of the layered progressive approach in various countries and the current status of the layered progressive approach. By allowing the use of the model of the layered progressive approach, the data related to the reform of university English teaching were analyzed and organized. The combination of internal optimization, data-theoretic learning algorithms, and data federation algorithms for the model of the hierarchical incremental approach are also investigated. The results of the study show that the layered progressive model of college English teaching reform has good results through specific practical applications in a strengthened educational ecosystem.

KEYWORDS

Data Allocation, Data Channels, Data Theoretical Learning Algorithms, Data Union Algorithms, Hierarchical Progressive, Intelligent Teaching and Learning

With the advent of the information age, hierarchical and progressive methods have become widely used in fields such as education, finance, and artificial intelligence. They are constantly evolving, giving rise to more types of hierarchical progressive methods to meet the needs of different fields. College English teaching has always been one of the important issues in the field of education. With the development of educational technology and continuous innovation in teaching models, how to improve the effectiveness and quality of college English teaching has become an urgent problem that needs to be solved. The hierarchical and progressive approach, as an effective teaching strategy, is widely applied in college English teaching. In past research, many scholars have begun to explore the application of hierarchical progressive methods in the field of education. However, most research has focused on general education, and there is relatively little research on the university English teaching model in educational ecology. Therefore, this article aims to fill this research gap by using a hierarchical and progressive approach to simulate and reform the teaching mode of college English and explore its application prospects and potential.

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This article focuses on the processing ability of hierarchical progressive model systems for sample feedback. Only a model system that can correctly classify, filter, and analyze the collected sample feedback can ensure the correct processing of information. In order to improve the processing capability of the model system, this paper introduces data theory learning algorithms and data union algorithms and adds functions of data deletion and data labeling to the basic model. The results have proven that this algorithm is indeed helpful. The introduction of these algorithms and technologies aims to provide the model system with the ability to maintain consistency when facing large amounts of data and to provide a foundation for effectively processing specific data in the next step. This article provides important reference and guidance for reforming college English teaching in the context of educational ecology, promotes innovation and improvement of college English teaching models, and provides reference and guidance for applying hierarchical and progressive methods in other fields. At the same time, we also hope that this study can attract more scholars' attention and research on the hierarchical and progressive methods in educational ecology and promote further development in education.

LITERATURE REVIEW

With information technology becoming increasingly common, manual data analysis has become outdated. Nowadays, hierarchical progressive methods are widely applied in various fields of society, and more and more types of hierarchical progressive methods are being developed (L.Liu et al., 2021). The UK makes the most frequent use of hierarchical progressive methods, which are widely used in the production industry (Díaz et al., 2021). For example, production industries such as automobile production and food production. Layered methods are also used in other fields, such as finance. Whenever there is a large amount of data to be processed, there is always a hierarchical method (Cavalcanti et al., 2021). By implanting the hierarchical progressive method (Hou et al., 2019) on the computer side of this method (Cheng,Ma et al., 2022), the data from the main control end is sorted and processed (Cheng, Wei & Cheng et al., 2022). The data is stored internally and retransmitted to the user for use. Compared with manual data integration (Liu et al., 2020), this can not only directly replace manual labor (Cheng, Yang et al., 2022) but also minimize data processing time and remaining additional costs (Blazar et al., 2020). In addition, the manual process of data integration often leads to data omissions and erroneous data judgments, which can affect the judgment of researchers (Hendrix et al., 2003). The basic purpose of the layered method is to achieve the most efficient data processing capability by incorporating a layered system, thereby saving a lot of money and extending the service life.

In today's fast-moving times, the field of education is developing at an increasingly rapid pace (Liu et al., 2022). During the development of educational reform, the direction and results of educational reform are often poorly applied within the actual classroom (Cai & Liu, 2022). As educational reform is confronted with uncontrollable factors for students, who are by nature individuals with individual opinions and independence of thought, the factors of change are too great to avoid misanalysis (Berson et al., 2022). Curriculum reform in English at the university level has, therefore, been a major direction for researchers to tackle in the process of educational reform (Gregoire et al., 2021).

As the educational ecosystem is a joint ecosystem that includes the classroom life environment, a powerful modeling system is needed instead of a human being to classify the data as a whole, as opposed to the individual environment within the classroom (Franz et al., 2022). From the perspective of the modeling system itself, when analyzing and processing the data collected concerning curriculum reform, data blocking problems often occur, leading to data processing failures (Ngwenya et al., 2020). From the perspective of the environment in which the model system operates, variable external factors such as temperature can also have varying degrees of impact on the overall system operation process (Hübner et al., 2021). Therefore, it is not just a matter of building the model using a hierarchical approach but also of ensuring that the system performs as well as possible in the face of large amounts

of data (Njoroge & Gathungu, 2013). Therefore, it is important to consider all aspects of building a hierarchical and progressive modeling system in the education ecosystem to maximize the capabilities of the modeling system (Sung & Vong, 2021).

In order to adapt the model system to the educational ecosystem, it is important to identify the key issues and then systematically investigate and improve them. The model system can analyze data, and as the hierarchical approach has been upgraded, the models built on it have become more diverse (Du et al., 2021). Initially, there was no hierarchical approach but rather an artificial way of classifying data. Later, with the advent of the information technology world, models were developed instead of human models. The main purpose of the hierarchical approach is to analyze and process data on a large scale. Still, the key to solving the complex data is to classify and process the diverse data of the curriculum reform (T.Liu et al., 2021). The data is pre-processed by analyzing the various opinion data collected in the modeling system. The data is then further processed by the internal system to obtain the final result data. The main purpose of implementing the model system is to enhance the speed and correctness of the processing within the model system (Gueudet et al., 2021). At the level of the construction of the model system, the internal structure is built to be complete and the corresponding algorithms to meet the needs are added to improve the overall efficiency of the model system (Sansing-Helton et al., 2021). It is clear from the above that the hierarchical progressive modeling system in an educational ecological environment has good potential for use in studying English language teaching reform in universities.

RELATED MATERIALS AND METHODS

Hierarchical Progressive Method

The hierarchical progressive method is a teaching strategy to guide students to gradually master knowledge and skills by gradually increasing the difficulty and complexity of learning tasks. This method is commonly used in the field of education, especially in the teaching of subject knowledge and the cultivation of skills.

Teaching Hierarchy

The hierarchical and progressive method divides learning content into different levels or stages, each with specific learning objectives. Students need to complete the requirements of the current level before they can proceed to the next level. This hierarchical structure helps students gradually establish a framework of knowledge and a foundation of skills.

Gradual Increase in Difficulty

The hierarchical progressive method guides students in learning by gradually increasing the difficulty of learning tasks. The basic level usually includes basic knowledge and simple skills, while the advanced level contains more complex and in-depth content. In a gradually improving learning environment, students can consolidate their learned knowledge and gradually expand their application scope.

Individualized Learning

The hierarchical and progressive method can provide personalized teaching based on individual differences and student learning needs. Students can learn according to their abilities and interests at a pace that suits them. Teachers can provide targeted guidance and feedback to students to promote their progress at every level.

Teaching Resources and Strategies

The hierarchical and progressive approach requires teachers to provide appropriate teaching resources and strategies to support student learning. This may include textbooks, multimedia materials, practical activities, and evaluation tools. Teachers can also use different teaching methods and techniques, such as lectures, discussions, demonstrations, and practices, to promote student participation and learning outcomes.

Management and Evaluation

The hierarchical and progressive method requires teachers to carry out effective management and evaluation. Teachers can track students' learning progress at different levels and provide necessary support and feedback in a timely manner. At the same time, teachers can also check student mastery through regular evaluations and tests and make decisions to move on to the next level.

The hierarchical and progressive method is widely used in the field of education, especially in the teaching of subject knowledge and the cultivation of skills. It can help students gradually establish a solid foundation, improve learning effectiveness and motivation, and cultivate their self-learning and problem-solving abilities. At the same time, teachers need to comprehensively consider the differences and needs of students when implementing the hierarchical progressive method and flexibly adjust teaching plans and methods to promote the individual development of each student.

Steps of the Hierarchical Progressive Method

The general steps of the hierarchical progressive method are as follows.

Determine Teaching Objectives

Firstly, teachers need to determine the teaching objectives that students need to achieve. These goals should include the required knowledge and skills, considering student backgrounds and ability levels.

Hierarchical Structure

Next, the teacher divides the learning content into different levels or stages. Each level should have clear learning objectives and tasks that align with the overall teaching objectives of the course. Teachers can determine the difficulty, scope, and timing of each level based on the level and needs of students.

Design Teaching Resources and Strategies

After establishing a hierarchical structure, teachers need to design corresponding teaching resources and strategies for each level. These resources should include textbooks, multimedia materials, practical activities, and evaluation tools to support student learning. At the same time, teachers should also choose appropriate teaching methods and techniques, such as lectures, discussions, demonstrations, and practices, to stimulate student interest and improve learning outcomes during the teaching process.

Implementing Teaching and Management

During the teaching process, teachers should gradually guide students to complete learning tasks according to a hierarchical structure. This includes providing necessary guidance and feedback, checking students' learning progress, and adjusting teaching plans and methods in a timely manner. At the same time, teachers also need to manage students' learning behavior and classroom order to ensure teaching effectiveness and student safety.

Evaluate Learning Outcomes

Finally, teachers should conduct regular evaluations and tests to check student mastery and make decisions for advancing to the next level. Evaluation can take various forms, such as assignments,

quizzes, projects, and oral reports. Teachers should provide targeted advice and feedback to students based on the evaluation results to help them better master knowledge and skills.

In summary, the hierarchical and progressive method requires teachers to carefully design teaching objectives, hierarchical structures, teaching resources, and strategies and flexibly apply teaching methods and evaluation tools to promote student learning and development.

Construction and Optimization of Hierarchical Progressive Mode

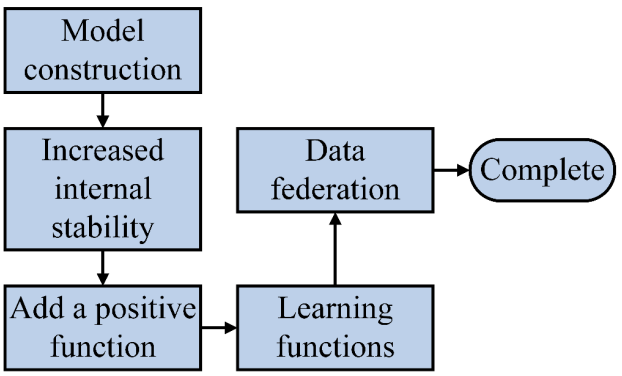
In China, a tiered progressive system model will be constructed in order to accelerate the reform of the university English teaching model and to improve the performance of students who are not interested in attending classes. The system model constructed by the hierarchical regressive approach in the educational ecological context is the focus of this paper in terms of whether the correct data analysis and management of the large amount of data collected for the university English language teaching reform can be achieved when entering the work. The practical implementation of the constructed model focuses on the internal data of the sample data for data analysis and determining whether there is a generative impact on the results. Within the data analysis system, the internal modules are given functional algorithms that allow the data to be processed accurately within the system. In practical applications, the data is first received and then calculated and analyzed. Therefore, regardless of the state of the constructed model system, errors can only be avoided as far as possible but not completely eliminated. The different levels and difficulties of the data to be processed require a more powerful data processing capability in the model system under study. The data can be better manipulated for analysis through the synergy between the various boards within the model. The overall modeling process is shown in Figure 1.

The overall modeling process of the model system under study can be seen in Figure 1. The overall modeling system cannot be constructed without cooperation between the various internal boards, and whether the data can be processed properly and accurately depends entirely on whether the internal boards are kept in line with each other. In order to increase the stability within the system, the following equation has been added.

$$F_{ij} = \int \frac{\mu}{2\pi} \frac{I_1 dl_i \times e}{z} \tag{1}$$

$$C_i = \sum_{j=1}^{a} \int \frac{\mu_1}{2\pi} \frac{I_1 dl_i \times e_r}{z} = \sum_{j=1}^{a} F_{ij} . I_j \tag{2}$$

Figure 1. Flow Chart of the Overall Modelling Process



$$\begin{bmatrix} A1 \\ A2 \\ A3 \\ A4 \end{bmatrix} = \begin{bmatrix} F11 & F12 & F1j & F1a \\ F21 & F22 & F2j & F2a \\ Fi1 & Fi2 & Fij & Fia \\ Fm2 & Fm2 & Fmj & Fmi \end{bmatrix} \tag{3}$$

From the above equation, it can be seen that the data processing slab within the model is given the ability to compute positively on the data by incorporating a positive computation function on the data. Further, the individual vector sums within the data are calculated. In order to be able to then go on to generate the specific matrix quantities of the data in question, the following equation has been added.

$$B = MJ_B \tag{4}$$

The form of the specific data matrix can be seen from the above equation. With the addition of the above algorithm, the simple structure of the algorithm within the specific model system, as shown in Figure 2.

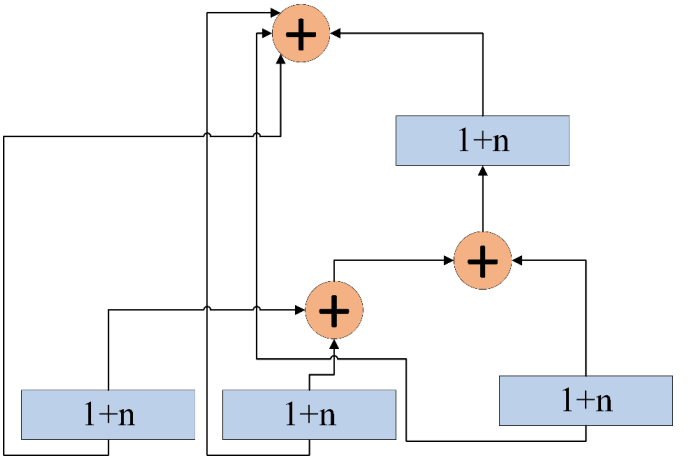
Figure 2 shows that the entire hierarchical progressive model system has an initial easy computation and analysis of the data through mutual data scheduling and transfer between the four modules within the system. In order to give the model system we have constructed a higher level of data processing capability. It is also necessary to incorporate data theoretical learning algorithms and data union algorithms within the system, with the relevant equations as follows.

$$Y_B U_B = I_B \tag{5}$$

$$G^T Y_n = U_B \tag{6}$$

With the addition of the above formulae, the system can internally acquire the information theory for learning the input data and transfer the feature data node information within the data information to the storage module within the model system. The transmitted information data will then be differentiated. If there are occurrences of information node data that have failed to be learned,

Figure 2. A Simple Structure Diagram of the Algorithm Within the Model System



the system will also learn the new information for storage and then carry out an internal loop of information. Once the system has learned the node key data, it will also increase the degree of union between the data and the data, and we take the next step of refinement within the system by adding the appropriate function. The relevant formula is as follows.

$$B = FI_B\left(R_B\right) \tag{7}$$

$$MIN\left\|F_T - FI_B\left(R_B\right)\right\|_2 \tag{8}$$

With the addition of the above formula, both the learning of the information data and the data interaction problems have been solved. The final step in the construction of the model entails the transfer of the data result information, and in order to be able to output the result information more quickly, the following formulae have been added to this paper.

$$Fd_b = B_t \tag{9}$$

With the addition of the above formulae, the basic model system constructed in this paper is complete. The system can manage the learning of the data normally. The purpose of adding the data theory learning algorithm to the model system is to enable the system to learn the types and theories of the data in the English language teaching reform section of the university, to be able to discern whether the input data is consistent with the learned data theory and to perform a data deletion operation if it is inconsistent. The theory learning algorithm can also reduce the error rate of the final output data from the first source of data input. On the other hand, the data federation algorithm calculates the information data within each module and implants the information data for each module. Including this algorithm maximizes module interaction within the entire model system, and only when the internal information processing modules can work collaboratively on the data in an orderly manner can the smoothness of data processing and computation be achieved.

Due to the difficult and large amount of data the model system constructed in this paper has to deal with, we have optimized the system internally. The problem of slow input of large amounts of data was avoided by adding multiple data flow channels and functions to manage branching channels with the following relevant equations.

$$I_n = F^2 B_t \tag{10}$$

$$\Delta B_j = \Delta B_{1j} + \Delta B_{2j} + \ldots + \Delta B_{bj} = \sum_{i=0}^{b} \Delta B_{ij} \tag{11}$$

$$L_j = \frac{\Delta B_j - \min \Delta B_{j-1}}{\max \Delta B_i - \min \Delta B_i} \tag{12}$$

As can be seen from the above equation, the data is predicted and passed through the branch channels and the data flow channels that are added to the various modules within the system, calculating the amount of data circulating within each channel and thus predicting the time that the entire data can be completed accordingly.

In order to reduce the error rate of data information, it is also necessary to automatically compare the results of the data to be output. If the results are too different from other data, the data can be automatically flagged for easy viewing by the relevant researchers. The relevant formulae are as follows.

$$\frac{R_{it} - R_t}{R_{j0}} < 6\% \tag{13}$$

$$r_j < \left[20\% + 5\%\left(L - 1\right)\right].f \tag{14}$$

$$\frac{R_{it} - R_{t0}}{R_j} > 50\% \tag{15}$$

From the above equation, the difference between the individual result data can be calculated. If the difference is small, the result can be fed into the output channel, while if the difference is large, the result is marked with a sign. Including this algorithm effectively avoids the possibility of incorrect results arising from calculation errors. The efficiency curves resulting from the model construction under the hierarchical progression approach into the working state, as described above, are shown in Figure 3.

As can be seen in Figure 3, the hierarchical progressive model has a period of data cooling off when faced with data input. However, this data cooling-off period is just the system internally classifying the data, and it is clear from the change curve in the graph that the whole model system goes into high-speed operation.

RESULTS AND ANALYSIS

Analysis of Experimental Results

The hierarchical progressive model has been constructed, the internal performance has been optimized as described above, and the corresponding model has been obtained. This paper focuses on analyzing the university English teaching reform model from multiple perspectives in education and teaching. Firstly, the textbook materials used by students are studied to assess and analyze whether the knowledge content within the textbook is in line with modern educational teaching concepts, whether the knowledge content is sound and whether the connectivity between the various modules within the whole book is reasonable. However, this is only a one-sided assessment, and the student evaluations of the textbook are the most important. Moreover, the reform of the university's teaching model must still be analyzed from the student's point of view, and further information has led to preliminary findings, as shown in Figure 4.

Figure 3. Data Plot of the Efficiency Change Curve for the Model System

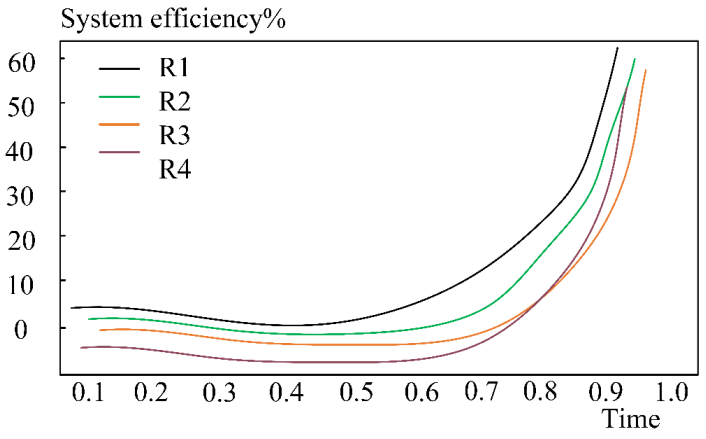


Figure 4 shows that the majority of people approve of the English textbooks used at university to an average degree. At the same time, some students have a straightforward disapproving attitude, and very few students are satisfied with the content of the textbooks, as can be seen in the figure. This shows that the English textbooks used today are boring and very official for university students. This is a direct indication that in order to reform the existing English language teaching model, the textbooks must be reformed and their content must be interesting in order to maximize student willingness to learn and master the English language.

From the above we know that in order to make changes, a major overhaul of the book content is required. It is not enough to revolutionize how the content of knowledge is presented. It is well known that the teaching of the classroom is an important aspect that depends on the willingness of the students to listen. The first step was to study and analyze lesson planning, which revealed that each teacher has an individual style of lesson planning. Some teachers are not well prepared, but their students respond particularly well and are willing to listen to their lessons. This is also the case on university campuses, and even on all types of campuses, where a relaxed classroom environment attracts student attention and they are willing to learn independently. However, reforming the English teaching model at university cannot be done by strictly requiring every teacher to change their teaching style; methods are easy to change, but everyone's temperament is not. It can only be done by constantly experimenting with the kind of lectures that students prefer in a fixed way and by asking teachers to add fun mini-games within the classroom or to adapt role-plays in the English classroom that can deepen the impression that knowledge stays in the mind. In order to find out specifically which teaching methods university students prefer, a specific survey was conducted, the results of which are shown in Figure 5.

As can be seen in Figure 5, university students do not like the teacher's sudden questions in the classroom, nor do they like the teacher to read the content to pass on the knowledge. They think that if they go through the lecture, there is no difference in their self-study knowledge, and they also do not want to listen to the lecture to easily produce fatigue. Students prefer the various activity sessions the teacher organizes in the classroom and the specific multimedia presentations. So, based on the above research, it is also possible to know that in order to reform the teaching mode of English at university, it is necessary to make a change from the teaching mode, and this change directly determines whether the teaching reform will be successful or not. Only when students fall in love with the classes can the goal of teaching mode reform be achieved in a real sense.

In order to further validate the stability of the hierarchical progressive modeling system in the educational ecological environment, the model system has been developed in order to verify its ability to process and analyze relevant data. In order to further validate the system's ability to process

Figure 4. Distribution of Textbook Evaluation Comments

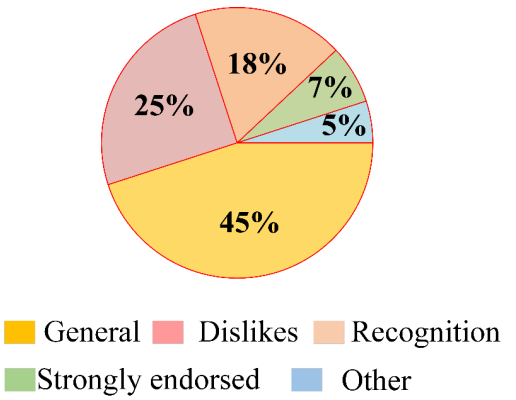
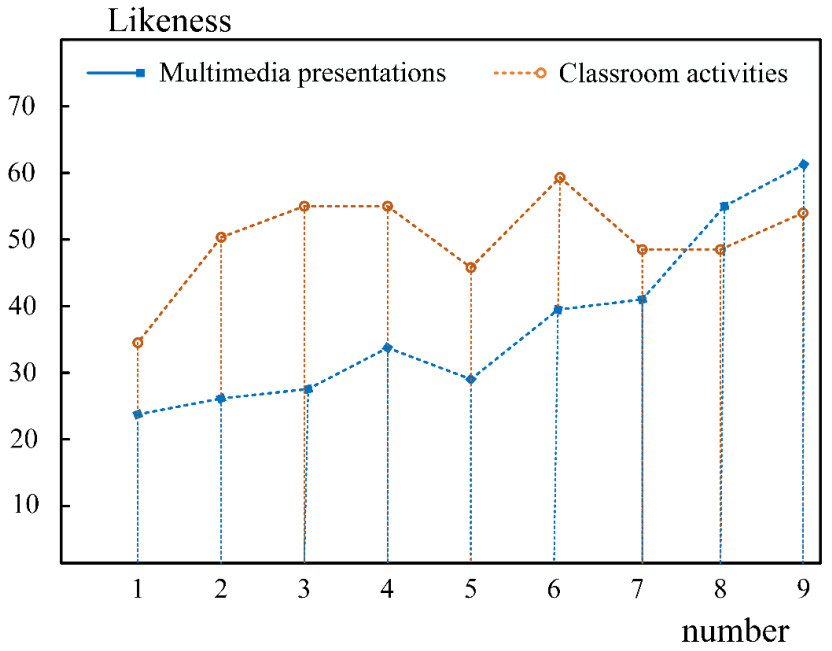


Figure 5. Statistical Chart of Teaching Methods

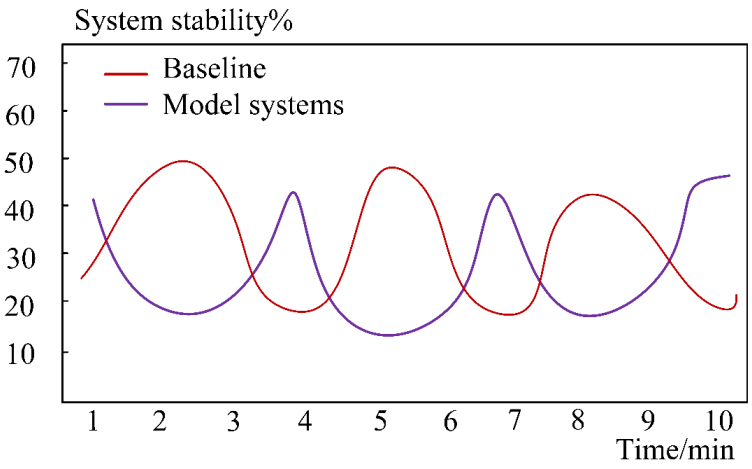


and analyze the relevant data and the stability of the system, 1,000 sets of data were selected and repeated several times. For the accuracy of the experimental results for this specific application, a relatively stable environment was chosen for the operation of the model system. The final average of the experimental results was taken for the evaluation and analysis of the experimental results. During the operation of the hierarchical progressive modeling system, the input data of 1,000 groups were first classified and processed, and the data were ordered into the corresponding transmission channels. Then, during the data processing, the system deletes or flags any data that does not meet the conclusions. The purpose of processing the data in this way is to reduce the error rate of the results and also to increase the overall system performance. If all erroneous data can be screened out, then the resulting experimental results data is also very reliable. In the whole experiment, we focus on the performance of the whole system when analyzing the data in a hierarchical progressive model, which determines how well the system can handle the data. The specific results of the final experiments are shown in Figure 6, which shows the data output to the computer.

As can be seen in Figure 6, the overall performance efficiency of the hierarchical progressive model is no less than 70% when dealing with 1,000 sets of huge data in the operational state of the data. The goal of our current study has been achieved in terms of maintaining a stable working state in the face of such a large and cumbersome amount of data and information. In summary, the model construction of the hierarchical progressive approach in the educational ecological environment studied in this paper can meet the classification and management operations of handling data related to reforming the university English teaching model. The constructed model is more meaningful for practical use and has more relatively smooth characteristics.

In exploring research on the reform model of university English teaching in an educational ecological context with a hierarchical progressive model, the problem of reforming the university English teaching model is addressed. Firstly, it identifies which aspects of university English reform need to be studied. It investigates the various levels with which reform can be carried out. Finally, it

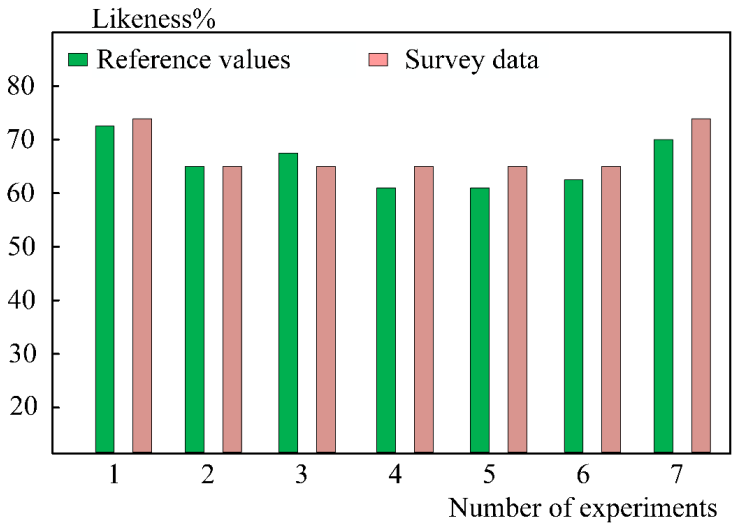
Figure 6. Plot of System Stability Data as the Model System Processes the Data



uses the constructed model system to assist in analyzing the collected data types. This is a very fast statistical process, except that it is a time-consuming step to capture the various attitudes of students within English at university. Still, once the feedback has been collected, the process is very fast. In order to further confirm the extent to which the educational ecology of the tiered progression model has been explored for the reform of English language teaching at university, a university was selected and feedback was collected from all students studying English. The collected data were entered into the system modeled in this paper, and the data were categorized and integrated. A better experimental environment was chosen during this experiment in order not to have other factors influence the results of this experiment. Figure 7 shows the final results produced.

As can be seen in Figure 7, the model system of the hierarchical progressive approach in the educational ecological environment in the process of exploring the information data related to the

Figure 7. Data Feedback Graph



university English teaching reform model. The final results show that student messages still favor a relaxed and enjoyable classroom environment and interesting book content. This further demonstrates that student perceptions must be the main focus of any changes to the English language teaching model for university students.

Analysis of Practical Applications

In education, teachers have been exploring how to improve student learning outcomes and meet their personalized needs. The hierarchical progressive method, as a teaching strategy, is widely used in classroom teaching. However, we must also recognize some limitations in the implementation process of the hierarchical progressive method, which require us to think deeply and solve them. Next, this article will explore the limitations of the research to understand and apply this teaching method.

Limitations in the Field of Teaching

This article mainly focuses on the application of hierarchical and progressive methods in the field of education, especially in the teaching of subject knowledge and the cultivation of skills. However, this method does not apply to all teaching fields and contexts. In some special fields or specific tasks, different teaching methods and strategies may be required. In addition to the hierarchical and progressive approach, teachers can combine other teaching strategies and methods to meet the needs of different students. For example, strategies such as cooperative learning, exploratory learning, or personalized learning can be introduced to increase student engagement and learning motivation.

The Challenge of Student Differences

Although the hierarchical progressive method can provide personalized teaching based on student differences and needs, it still faces some challenges in practical implementation. For example, teachers may need to deal with time differences between students at different levels and how to manage grouping and resource allocation effectively. In order to have a more accurate understanding of student learning progress, teachers can conduct regular evaluations and provide personalized feedback in a timely manner. This can help students adjust their learning strategies promptly and provide targeted support and guidance.

The Importance of Teacher Professional Development

Implementing a hierarchical and progressive approach requires teachers to possess corresponding professional knowledge and skills. Teachers need to be familiar with learning objectives and tasks at different levels and be able to adapt to the needs and feedback of students. Therefore, the professional development and training of teachers are also important factors for the successful implementation of the hierarchical progressive method. Teachers need to receive relevant professional training and continuous development to improve their teaching ability in the hierarchical progressive approach. By communicating and sharing experiences with other teachers, teachers can continuously optimize their teaching strategies and better respond to student differences. In order to smoothly implement the hierarchical progressive method, teachers need to fully prepare teaching resources and manage student learning behavior and classroom order reasonably. Teachers can utilize multimedia technology, textbooks, auxiliary tools, and other resources to provide rich learning materials and activities to support student learning processes.

Complexity of Effectiveness Evaluation

Evaluating student learning outcomes at different levels is one of the key steps in implementing the hierarchical progressive approach. However, the evaluation process may have some complexity and subjectivity, and accurately assessing student mastery and determining whether to proceed to the next level are challenging. When implementing the hierarchical progressive method, teachers should

maintain flexibility and adjust their teaching plans and methods at any time. Based on student feedback and evaluation results, teachers can adjust the level of content, difficulty, and time arrangement in a targeted manner to ensure that students make progress at appropriate levels.

Summary

By adopting diversified teaching strategies, regular evaluations and feedback, teacher professional training and development, continuous adjustment and improvement of teaching plans, and resource support and management, we can better address the limitations of the hierarchical progressive method, improve teaching effectiveness, and meet the personalized needs of students. The hierarchical progressive method introduced in this article has been widely applied in educational practice. Some practical application scenarios can be seen, such as the following.

Subject Knowledge Teaching

In various subject areas, teachers can use hierarchical and progressive methods to organize and present teaching content. Divide learning objectives into different levels based on students' previous knowledge and ability levels and gradually guide them to master knowledge step by step. For example, in mathematics teaching, teachers can divide the course content into three levels: basic, intermediate, and advanced based on students' mathematical foundations, gradually guiding them to improve their mathematical skills.

Foreign Language Learning

In foreign language learning, the hierarchical and progressive method can help students gradually improve language skills such as listening, speaking, reading, and writing. Teachers can divide learning tasks and materials into different difficulty levels based on students' language proficiency, ensuring that students receive language training and application at appropriate levels.

Personalized Learning

The hierarchical and progressive approach can provide personalized learning paths and support based on individual differences and student learning needs. Teachers can divide learning tasks into different levels based on student learning abilities and interests and design corresponding learning plans for each student. This can better meet the needs of students and improve learning outcomes.

Special Education

For students in the field of special education, the hierarchical and progressive approach is also an effective teaching strategy. Teachers can design personalized learning plans and teaching materials based on the special needs and abilities of students. Through adaptive hierarchical teaching, these students can overcome difficulties and improve their academic performance.

Future Work

The hierarchical and progressive method can be applied to various disciplines and educational fields, helping teachers provide personalized teaching and support. By reasonably dividing learning objectives and tasks, and guiding students to gradually improve their abilities in a targeted manner, the hierarchical and progressive method can improve the learning effectiveness of students and meet their personalized needs. In the future, the following development directions can be considered.

Integration of Educational Technology

With the continuous progress of technology, educational technology will play an increasingly important role in the hierarchical and progressive approach. Future work can combine educational technology with hierarchical and progressive methods to provide a more personalized and interactive

learning experience. For example, technologies such as virtual reality, augmented reality, and artificial intelligence can be used to create immersive learning environments, helping students better understand and master knowledge.

Data-Driven Personalized Learning

Big data and learning analytics technologies can help us better understand student learning needs and performance and provide personalized learning paths and support based on individual differences. By analyzing student learning data and feedback information, teachers can adjust the level and content of the hierarchical and progressive method to make learning more in line with the characteristics and needs of students.

Social Collaborative Learning

Future developments should also include combining social collaborative learning with hierarchical and progressive methods. Promoting cooperation and interaction among students can help students learn and support each other through communication and collaboration. Teachers can design learning tasks and activities with social elements, encourage students to explore and solve problems together and improve their learning effectiveness and teamwork skills.

Interdisciplinary and Comprehensive Learning

The future development direction also includes the promotion of interdisciplinary and comprehensive learning. The hierarchical and progressive method can help organize and guide students to learn across disciplines and integrate knowledge and skills from different disciplines. This can cultivate comprehensive thinking and the ability to solve practical problems.

In summary, the future development direction of hierarchical progressive learning will include integrating educational technology, data-driven personalized learning, social collaborative learning, and interdisciplinary and comprehensive learning. These development directions will further enhance teaching effectiveness, meet the personalized needs of students, and cultivate the comprehensive abilities they need in a constantly changing society.

CONCLUSION

With the advent of the information age, hierarchical progressive methods have been widely applied in various fields such as education, finance, and artificial intelligence, and more types of hierarchical progressive methods have emerged. This article investigates hierarchical and progressive methods in educational ecology to simulate and reform university English teaching models. Only a graded progressive model system that can correctly classify, filter, and analyze the collected sample feedback can ensure that the model system processes information correctly. In addition to the hierarchical progressive method, data theory learning algorithms and data union algorithms have also been integrated into the model construction process, and data deletion and labeling functions have been added to the basic model.

The purpose of incorporating these algorithms is to provide the model system with the ability to maintain consistency when facing large amounts of data and to provide a foundation for the effective processing of specific data in the next step. The results indicate that the hierarchical progressive mode system has good practical application prospects. However, this method still has some issues, such as encountering issues when the system processes data beyond its scope. Therefore, we must further research and incorporate more information channels to address these issues. In the future, we need to continue exploring these issues and find better alternatives to improve the processing capabilities of hierarchical progressive model systems. In summary, applying hierarchical and progressive methods

in educational ecology is of great significance and can serve as an effective tool to improve the teaching mode of college English.

DATA AVAILABILITY

The figures used to support the findings of this study are included in the article.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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