

Construction and Application Pattern Analysis of English Classroom Intelligent Teaching System

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Keywords: English classroom; intelligence; teaching system; personalized development

Abstract: English classroom teaching reform is constantly trying various innovative teaching models, each teaching model has its own characteristics, suitable for different groups and environments, English classroom intelligent teaching system can not only integrate various teaching models, but also greatly reduce the burden and pressure of relatively scarce teachers. More importantly, it is the best way to improve students' awareness and ability of autonomous learning. This is the biggest characteristic of English classroom intelligent teaching system.

1. Introduction

The ministry of education in the English curriculum standard request "fully reflects the value of language learning for students to develop", "focus on language learners' different characteristics and individual differences", "full consideration of language learning and sustainable", "attaches great importance to the language learning and the practical application", "focused on evaluation of the students' comprehensive language using ability, enrich and expand the channel of learning English, but, as the school students admission number increased year by year, and didn't get the corresponding improvement teaching environment and conditions, foreign language teachers is relatively serious shortage, the teaching effect is difficult to meet the requirements of the ministry of education and standards. Due to the different characteristics and individual differences of learners, it is difficult to achieve their goals. In-depth attention to personalization can provide students with the most suitable learning strategies, reduce the learning cost of students, improve their independent learning ability, and thus improve the teaching efficiency of English class.

Educators have tried many English classroom teaching modes, such as hierarchical teaching, modular teaching, research-based learning teaching and computer-aided teaching. Computer aided teaching combines traditional classroom teaching with modern information technology, implements the advantages of network courses and traditional classes, pays attention to individual differences, develops students' potential, and provides personalized teaching resources for students from different starting points. However, these teaching modes may not share the pressure and burden of relatively scarce teachers, or they may not provide enough personalized teaching strategies. The intelligent teaching system in English classroom is the best way to solve this problem. English intelligent teaching system can predict students' knowledge mastery degree from the observed test results and practice results, or try to predict students' ability value in a certain aspect, select the most suitable learning strategy for students, and improve students' autonomous learning consciousness and autonomous learning ability. Autonomous learning awareness and autonomous learning ability include three processes: self-monitoring, self-guidance and self-reinforcement. It is necessary to adopt the method of planned or skilled learning to achieve the degree of automation, urge students to arrange study time regularly and effectively, and enable students to achieve learning objectives through self-monitoring, feedback and adjustment.

2. Understanding and Positioning of English Classroom Intelligent Teaching System

From the perspective of cognitive science, artificial intelligence is a new form of imitating human conscious ability. It integrates the conscious ability developed by human beings into automatic operating system and applies it to human production and life. This process involves many fields, such as computer science, cybernetics, information theory, neurophysiology, linguistics, psychology and so on. The integration and automatic processing and application of artificial intelligence to the imitation of consciousness ability are the main characteristics of artificial intelligence, which is different from other kinds of imitation of human ability. Generally speaking, consciousness is the ability of human beings to know the world and know themselves, among which the most important is the ability to know oneself. The essence of the application of artificial intelligence in education and teaching is to develop the consciousness ability of individual learners through automatic operating system, especially the development of their own learning and thinking, so as to help individual learners improve their learning and thinking ability, and finally improve their learning efficiency and obtain better learning effect.

English classroom intelligent teaching system is a systematic application of artificial intelligence in English classroom. In principle, it is to develop and promote students' learning and thinking ability in English classroom. The difference is that it can provide students with individualized learning characteristics and levels, learning effects and problems, and individualized solutions in English classroom in a systematic and automatic way. It greatly improves the teaching efficiency of teachers and students in English classroom. English classroom intelligent teaching system to some extent than English classroom teachers' teaching ability, nature of the system used to have developed excellent education concept and teaching knowledge, but it cannot completely replace teachers in English class teaching, teachers' teaching English class has a stronger binding and more flexible service. English classroom intelligent teaching system should become the most powerful auxiliary means of teachers' teaching in English classroom. It should be based on the constraint environment established and created by teachers. Under the more flexible teaching service provided by teachers, it should provide students with individualized learning characteristics and levels, learning effects and problems, and individualized solutions.

3. Construction of English Classroom Intelligent Teaching System

English classroom intelligent teaching system is a dynamic and interactive WEB server application, which is first based on the English classroom resource module, then the English expert module for auxiliary teaching, and then the English classroom learning module for students to learn independently. English classroom intelligent teaching system includes four kinds of users: English experts, English teachers, students, system administrators. User login, according to different identity has different module operation rights. The system administrator is the person who carries on the daily maintenance to the system resources, the English expert is the senior teacher who can thoroughly analyze the knowledge point, the degree, the determination degree involved in the English test question, the teacher is the general English teacher who organizes the designated class and the student, the student is the ordinary student who participates in the classroom teaching.

3.1 English classroom resource module

The English classroom resource module consists of four parts: English knowledge module, English learning method module, English problem module and user information module. English knowledge module is a collection of knowledge points and teaching contents of classroom learning. It comes from English teaching materials and teaching materials related to them. It can also be a typical teaching material uploaded by teachers and students and systematically absorbed. It records all knowledge points of English vocabulary and grammar, including knowledge point category, knowledge point name, knowledge point correlation level, etc. It is not a simple copy of the content and layout of teaching materials, but a network map of teaching contents through hypermedia hot

words and hot maps, which fully reflects the excellent teaching ideas and achievements of English experts. The content of English classroom teaching is preset by the teacher in advance or updated in the course of students' learning.

English learning method module is a collection of personalized solutions based on students' learning characteristics and level, learning effect and problems. It records the specific contents of students' learning, including topic serial number, knowledge point serial number, determination degree, etc. It also records the knowledge and experience of English experts, including topic serial number, knowledge point serial number, determination degree, etc.

English exercise module is a collection of various exercises corresponding to each knowledge unit, and exercises are generally in the form of multiple choice questions. According to the five learning goals of language knowledge, language skills, emotional attitude, learning strategies and cultural consciousness, the exercises are divided into five aspects: language knowledge exercises, language skills exercises, emotional attitude exercises, learning strategy exercises and cultural consciousness exercises. Each exercise includes information such as question number, question questions, options, answers, analysis instructions and the purpose of the questions.

The user information module is the information of all types of users, including user name, password, user category, etc. The students' learning characteristics and learning state are obtained by the intelligent system through the analysis and statistics of the students' errors in the process of doing the questions and the learning results of each knowledge unit.

3.2 English Expert Module

According to the characteristics of English teaching, the assessment and consolidation of basic knowledge is mainly manifested in the analysis of the situation of teachers doing objective questions for students. Each objective question has one or more knowledge points included in it. In this way, the English expert module is mainly manifested as a rule-based expert module to complete the diagnosis of learning problems of middle school students in English teaching. According to the characteristics of English teaching, the function of problem diagnosis can also be summarized into two aspects, one is the quantitative analysis of knowledge points, the other is the quantitative analysis of students. The quantitative analysis of knowledge points means that teachers diagnose the knowledge points of some students after uploading the answers. Generally speaking, teachers can consciously assess some knowledge points when organizing a certain examination. When using the quantitative analysis of knowledge points, the questions selected by the teacher organization examination determine the accuracy and credibility of the analysis results. In general, the use of quantitative analysis by students will be more frequent. In most cases, English teachers use the English expert module to analyze the diagnosis of quantitative students, and then carry out targeted teaching.

In addition, the English expert module also contains the learning function, which is independent of the problem diagnosis function in the system and is not open to ordinary teachers. It only provides an external interface for English experts to maintain the English learning method module. Through the interface, experts can modify or add and delete the contents of the knowledge base, which is conducive to the expansion of the system and the enhancement of credibility.

3.3 English classroom learning module

In the process of learning, students can get individualized guidance and help from choosing learning content, understanding learning goals, evaluating learning results and diagnosing learning process, so that learning can be more efficient. The English classroom learning module is an autonomous learning module that helps students to realize individualized learning. English classroom learning module is to carry on the diagnosis exercise first, after the student user logs in the system, may choose 10 questions in each knowledge point in the exercise library, carries on the exercise, after the exercise completes may carry on the self-diagnosis to own does the question situation. Generally speaking, whether the diagnosis results are accurate and in line with the actual situation depends on the number and quality of the selected topics. The more questions, the higher the quality, the more accurate the system diagnosis results will be. This refers to the question and

quality refers to the question in the question bank English experts input to the knowledge points of high accuracy.

Secondly, students carry out knowledge point reinforcement exercises. Students can choose knowledge points for intensive exercises after logging into the system, or they can enter the question bank of knowledge points for practice after diagnosis. If the student has a history practice record, the system will sort the knowledge point arrangement according to the student history practice analysis, which will make the system more humanized. Classification sort according to the strong, medium and weak learning effect to sort, students can choose the corresponding modules to practice according to their own learning situation. In this module, the user will list each practice according to the date and time period, and give the students a reference. Meanwhile, according to the history practice, the system gives the students the study conclusion, according to the law of memory forgetting, the system lists the corresponding exercise questions for each knowledge point that needs to be consolidated, so that users can consolidate the knowledge points, improve the learning efficiency and strengthen the interest in English learning.

4. Application Pattern of English Classroom Intelligent Teaching System

4.1 Students' autonomous learning model

The English classroom learning module is the data structure of the intelligent teaching system to analyze and statistics the various cognitive characteristics of students, which is used to express the students' cognitive status and mastery of English knowledge and skills. At the same time, the English classroom learning module has the function of continuous information transmission, continuous information feedback and continuous information processing. It is formed according to the interaction between students and the system, the process of doing questions and academic achievements. It takes students as the main body, according to the students' existing knowledge, learning habits and learning emotions, and each student's learning level, learning effect and existing problems, and provides learning content, practice activities, interaction and learning tips for students' cognitive status and mastery of English knowledge.

Students for the first time into the intelligent teaching system need to input the information such as name, password, E-mail, the information is recorded to the user information in the module, start learning English after class module, system module can call English exercises for students by the students answer a set of test, test result will be record to the user information in the module, and automatically be learning module analysis and discrimination, it is concluded that the interpretation of the corresponding error, the formation of learning sets, intelligent teaching system restart learning module sets the discriminant of the student's English learning method, learning strategy for students and navigation strategy, It is suggested that students should learn from which knowledge point, after the completion of learning, the system will once again call the English exercises, provide the corresponding knowledge point exercises for testing, the cycle repeats. Because English classroom information module is to use network learning content to arrange, this kind of network learning content fully embody English education experts and advanced teaching ideas and results, so the English classroom learning module in network learning content to students' mastery of knowledge and skills, able to fully reflect the students' overall level of learning and learning state.

At the same time, the English learning method module divides the learning goals and problems into five aspects: language knowledge, language skills, emotional attitude, learning strategies and cultural awareness. The students' learning level and learning effect are divided into three levels: strong, medium and weak, so that the English classroom learning module can fully reflect the specific and personalized learning characteristics and provide specific and personalized solutions.

4.2 The mode of timely teacher intervention

The English classroom teaching module is the reasoning program and driver for the intelligent teaching system to judge the students' English learning status, at the same time, it provides reference and help for teachers to intervene in students' learning at the right time. In this module,

teachers' teaching guidance is based on students' existing knowledge, learning habits, learning emotions and other characteristics, as well as each student's learning level, learning effect, existing problems and other learning states to make reasoning and judgment, in view of students' cognition of English knowledge and mastery of skills. Intelligent teaching system is an open system structure, which has the function of absorbing and accumulating new teaching strategies, and can continuously improve and enhance the function of teaching guidance.

The intelligent teaching system starts the user information module to check the student's learning status, then transfers the student's English learning method set in the English learning method module to judge, forms the teaching strategy and the navigation strategy, then the intelligent teaching system adjusts the corresponding learning content in the English classroom knowledge module according to the teaching strategy. and form a new set of English learning methods, the intelligent teaching system starts the English learning method module again to discriminate the student's English learning method set, and forms a new teaching strategy and navigation strategy, and then circulates back and forth.

5. Conclusions

English classroom intelligent teaching system is not only an automated operating system for English learning and teaching, but also, more importantly, it integrates excellent and cutting-edge English teaching ideas and methods, which means that it can handle and solve most English learning problems, and can provide corresponding personalized solutions. It is similar to an English learning expert group, which is the biggest characteristic of English classroom intelligent teaching system. Therefore, the establishment and design of knowledge network and method set is not the task of individual teachers, but a project and project that needs to be studied and developed jointly by artificial neural network experts and English education and teaching experts. Only in this way can we improve the intelligence of English classroom intelligent teaching system and solve all kinds of complex practical problems of English teaching, which is often the misunderstanding of many scholars in this field.

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