The Reformation of College English Teaching under the Background of Smart Education

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Abstract: In order to reform the college English teaching, teachers can use smart education to release teaching information on the education platform, analyze students' data and intervene through Big Data, and teachers and students and can interact through the education platform. Based on the characteristics of college English curriculum, it is feasible to apply smart education to college English teaching and realize the personalized mode of teaching and learning.

Keywords: Smart education, College English, Personalized mode of teaching and learning

1. Smart Education

In recent years, with the rapid development of information technology, intelligent community, intelligent campus, smart classroom and other fields based on the Internet and Big Data technology have become the focus of people's attention. The outbreak of COVID-19 in 2020 has brought great challenges to college education and employment of college students. During the 13th Five-Year Plan period, with the release of a series of educational informatization policy documents such as the *Outline of the National Medium and Long Term Education Reform and Development Plan (2010-2020), the Ten-year Development Plan for Educational Informatization (2011-2020), and the 13th Five-Year Plan for Educational Informatization*. It shows that the Ministry of Education has promoted the role and status of college education informatization to a strategic high-level and college education informatization is ushering in a great historical development opportunity. In the new wave of education informatization, the construction of "smart campus in colleges and universities" will surely usher in a great development opportunity, and at the same time promote and realize the modernization of management, teaching, scientific research and service of colleges and universities.

In such an era, the new generation of intelligent teaching methods represented by 5G, industrial Internet and artificial intelligence are rapidly boosting all walks of life from "information" to a new stage of "everything intelligent". But on the other hand, in the post-epidemic era, how to cope with the impact of college students under the teaching problem, how to use high-tech means to enable the university education to digital transformation, power of colleges and universities to build "intelligent campus", has become the current social problems, colleges and universities to be solved urgently is the focus of the state, society and enterprises increasingly.

2. New English Teaching and Learning Mode under Smart Education

Under the background of the new era, higher education gradually realizes the intellectualization of classroom teaching, and the smart English classroom has become the inevitable trend of the development of education. Smart classroom can meet the requirements of language education in international development and promoting the development of foreign language teaching.

With the deepening of the reform of English teaching and the vigorous promotion of the reform of English classroom teaching by the Ministry of Education, the concept of education and teaching is changing from "teaching-oriented" to "learning-oriented". New teaching models such as group discussion, small class sizes, flipped classrooms and mixed teaching are being promoted. Then, under the baton of Ministry of Education of "three classrooms", relying on the wisdom of education English teaching model conveniently and focus for the campus, classroom, education management provides a new generation of digital solutions become popular nowadays industry, but not all the wisdom of

education into the bureau, can provide from the end to cloud one-stop solution for wisdom.

(1) Change Teaching methods to Relieve the "big class" pressure of Smart English class and build an English smart classroom ecosystem in the context of "Big data".

One of the necessary conditions is to change the teaching method to relieve the "big class" pressure of smart English classroom. For many years, English teaching in China has been based on large classes, with too many students, which exceeds the carrying capacity of the classroom ecology and affects the communication between teachers and students and the development of classroom activities.

Under such circumstances, students can be divided into groups by using the "group" function in the learning platform. Discussion, communication and in-class practice are carried out in groups, and each student in the group has his own responsibilities and tasks.

(2) Change the teaching concept and reconstruct the structure of Smart English classroom, build an English smart classroom in the context of "big data"

The core lies in the transformation of teaching ideas and the reconstruction of the structure of Smart English classroom. The first thing to change is the classroom lecturer and "teacher-centered" aspect. We should pay attention to the interaction among the group of smart teachers, the group of smart students and the environment of smart classroom, and take the participation and activity of the group of teachers and students as the main criteria for evaluation. The main function of modern information technology is to serve classroom teaching, teachers and students. Teachers should change their over-dependence on multimedia courseware, network teaching platform and mobile teaching platform. In classroom teaching, we should arrange teaching content and teaching practice reasonably according to students' absorption speed and acceptance ability.

However, never put everything to information technology and lack of communication and interaction with students. Teachers should adhere to the leading position in classroom teaching, and give appropriate guidance and inspection to students' learning before, during and after class, so that modern information technology can be integrated into classroom teaching, and achieve a "seamless connection" with English smart classroom ecology. The best situation is that the teachers and students do not feel the deliberate use of information technology in the process of teaching and learning, but they really enjoy the benefits of information technology.

(3) Reform the evaluation mechanism and build healthy English smart classroom environment and construction of smart English classroom in the context of "Big Data"

It is necessary to reform the evaluation mechanism and establish a healthy English smart classroom. Traditional classroom teaching evaluation subject, evaluation form is single, the construction of diversified evaluation mechanism is imminent. On the one hand, the subject of teaching evaluation is diversified. For example, teachers' ecological group, students' ecological group, and objects faced by the subjects of teaching and learning can be evaluated mutually, that is, between teachers, students, teachers and students, teachers and teaching objects, and students and teaching objects can be evaluated mutually. Moreover, these evaluations are two-way, consultative and cooperative, and promote the harmony and stability between the ecological group of teachers, the group of students and the smart environment.

Secondly, diversified evaluation forms, flexible use of quantitative evaluation, qualitative evaluation, formative evaluation and termination evaluation and other evaluation forms should be applied. Our evaluation is not only quantitative evaluation based on data, but also qualitative evaluation based on logical analysis. There are not only formative evaluations based on teaching process, but also summative evaluation based on teaching results.

In the context of big data, building a harmonious and stable smart English classroom has become an important research topic for front-line English teachers. The current English smart classrooms carries too much capacity and imbalance in the structure of English smart classroom we have to shift from changing teaching methods, teaching ideas, reform the aspects such as appraisal mechanism, alleviate English classroom wisdom bearing force, refactoring English classroom smart structure, build healthy English classroom ecological wisdom.

3. The Personalized Mode of Teaching under the Background of Smart Education

"Smart education" environment is the support environment for teachers and students to implement

personalized teaching, which is mainly composed of data, algorithm, resources and courses.

First, there is a large number of teaching resources. Due to the differences between teachers and students, the environment of "smart education" must prepare a large number of teaching resources, so as to ensure that the recommended teaching resources can meet the actual needs of personalized teaching activities of teachers and students from the aspects of diversity, richness and high quality.

The diversity of teaching resources is mainly reflected in the types of content of resources. On the basis of all subject categories of national curriculum, local curriculum and school-based curriculum, it should also include all kinds of extended resources.

The richness of teaching resources is mainly reflected in the presentation of resources. The common presentation of contents can be text, picture or dynamic audio and video. The high quality of teaching resources is mainly reflected in the system, comprehensiveness and depth of resources. Systematicness refers to the natural and smooth connection between knowledge points should be ensured on the basis of careful division of resources. Comprehensiveness means that resources should contain all the contents required by teachers and students to carry out personalized teaching activities, so as to avoid incomplete knowledge structure due to the lack of content. Depth is the key to guide teachers and students to develop teaching content in depth and to induce students to think deeply. Whether teachers and students can provide teaching resources satisfying the above three characteristics is the basis of personalized teaching.

The second is personalized curriculum. In the process of practice and implementation of personalized teaching, apart from the visible physical equipment and software system environment, the fundamental difference between personalized teaching activities and traditional teaching activities is that personalized teaching activities must correspond to personalized curriculum content. Personalized courses need to be customized according to the differences of students. Personalized course content mainly includes differentiated course content and learning path.

Based on the curriculum content of the subject, personalized courses also include integrated courses and broad courses, providing comprehensive content support for students' knowledge construction and ability expansion. There are obvious differences in the composition, scope and nature of the three courses. Subject-based courses must maintain the systematicness of their own knowledge structure, provide students with the basic support to construct a complete knowledge structure of the subject, and strengthen the key and difficult points according to the specific situation of individual students. The integrated curriculum is formed by the integration of multiple subjects with strong internal connection, which breaks the disadvantages of students' single knowledge structure and weak comprehensive application ability caused by the conflicts between subjects in the past. The broad area curriculum integrates the knowledge of a wider range of disciplines and practical fields, and has a larger span of disciplines and comprehensiveness. With the increasing demand for comprehensive talents and the deepening of college entrance examination reform, it has become an important goal of education and teaching reform to cultivate interdisciplinary talents with strong comprehensive application ability across disciplinary barriers.

How are personalized course content and learning paths generated? Through a large number of pre-test surveys, students' knowledge and learning method information are collected for a long time, and various algorithms are used to analyze and mine information data, so as to recommend the course content and the best learning path in line with students' individual characteristics. Students can learn step by step according to the learning path recommended by the system and according to the real-time learning situation. Teachers should adjust the learning sequence and class hour ratio accordingly in order to achieve the teaching objectives more effectively.

The third is rich algorithms. Rich algorithms are the core ability of "intelligent education" environment to provide intelligent decision-making for personalized teaching. In the previous development process of educational informatization, due to the limitations of software and hardware conditions, participants' data interpretation and application were mostly based on previous personal experience, while their concerns were severely limited by data volume and processing capacity. With the continuous development of technology and the introduction of powerful computing capabilities, it has become a reality that rich algorithms provide teaching and learning wisdom support for participants in teaching activities. Such as machine learning algorithm, genetic algorithm, data mining algorithm and so on. These algorithms process and make decisions according to different business processes and corresponding data flows. The comprehensive application of all kinds of algorithms makes the data processing more refined, and strengthens the horizontal association between data, provides users with more holistic decision-making suggestions, and enables personalized course content and learning path

pushed to support personalized teaching activities more effectively.

The fourth is massive big data. The core idea of "smart education" implementation is intelligent adaptation driven by data. Due to the lack of means in the process of traditional teaching activities, data collection is mostly limited to the collection and statistics of all kinds of results such as test scores, and the collection of teaching process data is seriously missing, let alone the collection of personalized teaching data.

In the background of new technology, new equipment outbreak, with the increasing of education input, all kinds of acquisition device into the teaching environment, make the whole process, the whole teaching data acquisition, storage, calculation, analysis, undoubtedly the massive teaching activity data for personalized teaching activities laid the foundation data.

Third, the implementation strategy of "smart education" environment

High-speed network, smart education software platform, teaching behavior collection equipment in the classroom, students tablet software and other "smart education" software environment provide strong practical support for personalized teaching, which makes the ideal education of individualized teaching difficult to implement under the class teaching system have a focus. But these are not enough to ensure that teachers and students carry out truly personalized teaching, there must be scientific and effective implementation strategies to ensure the effectiveness of each link. Such a strategy should be to first detection as a starting point, with personalized counseling to the finish line, forming a "measure, to learn, practice, review - auxiliary" constitute a closed loop of the implementation of the strategy, to cover the whole process of detection data and business algorithm as the foundation, respect students individual difference, timely feedback to push the effective teaching contents and learning path, thus promotes the teaching goal to achieve.

One is to detect in advance and master the learning situation. Through a small number of questionnaires and exercises, to understand the students' pre-required knowledge and target knowledge. Understanding students' learning situation in advance is the advance preparation for ensuring the smooth development of teaching and personalized teaching. According to the pre-test, teachers can use the smart education platform to accurately push personalized filling content, learning content and learning path of new knowledge according to students' differences. At the same time, teachers can more pertinently adjust and organize their own teaching content in class after accurately understanding students' mastery of knowledge points, and preliminarily define the area of immediate development to provide data support for subsequent personalized teaching.

Second, flexibly organize classroom teaching according to massive teaching resources. "Intelligence education" environment for teachers and students to provide a lot of teaching resources, these resources to complete the detailed split of knowledge, make teachers have the flexible organization, and to regulate the conditions of the process of classroom teaching, and the distribution of classroom observation equipment, all kinds of teaching students of slab collect processing data can provide scientific basis for teachers to implement the teaching adjustment. It changes the situation that teachers only conduct teaching according to the presupposition of teaching plan and ignore the generation of class in the previous class-based teaching system, and teachers can guide students to achieve teaching goals more effectively.

The third is to monitor and consolidate knowledge points with individualized practice. "Intelligence education" environment of software platform can according to the students in the first test and in-class test reflects the learning situation, targeted to push personalized practice, to real-time detection students mastery of knowledge, and the practice of student data for intelligent processing, students will grasp of timely feedback to teachers, so that teachers adjust the follow-up teaching, More efficiently promote the personalized teaching activities of teachers and students.

Fourth, to build a diversified and efficient tutoring system. The problems most students encounter in the learning process of traditional teaching activities are not difficult themselves, as long as they can get timely guidance can be solved. However, teachers' personal energy is limited, which constitutes the contradiction between students' basic guidance needs and teachers' energy.

The software platform of excellent "smart education" environment is an intelligent "online teacher", who can analyze the specific situation of students' problems in the practice process and decide whether to push exercises to students to consolidate knowledge, or push teaching resources of relevant knowledge for students to re-learn the knowledge point. If students still fail to solve their problems through online tutoring by intelligent "teachers", the system will prompt real teachers, who can then

focus on offline tutoring.

Personalized teaching is the ultimate pursuit of every educator and the only way to realize the modernization of education in China. With the continuous innovation and development of information technology and its integration with education, it is believed that personalized teaching will be implemented in a wider range, so as to cultivate more innovative talents for the country.

Acknowledgement

References

[1] RYCHEN D S, SALGANIK L H. Key competencies for a successful life and a well-functioning society [J]. Hogrefe&Huber, 2003
[2] Sun, Pingping Gu, Lingang. Fuzzy knowledge graph system for artificial intelligence-based smart education [J] JOURNAL OF INTELLIGENT AND FUZZY SYSTEMS, 2021
[3] Ahanger, Tariq Ahamed Tariq, Usman Ibrahim, Atef Ullah, Imdad Bouteraa, Yassine. ANFIS-inspired smart framework for education quality assessment. IEEE access, 2020
[4] Jia, Xiaoge. Research on the Role of Big Data Technology in the Reform of English Teaching in Universities. [J] WIRELESS COMMUNICATIONS AND MOBILE COMPUTING,2021
[5] Lin V. Review of: Key competencies for successful life and well-functioning society [J]. 2004.