

The Construction of Smart Learning for Minority University English Learning From the Perspective of Smart Classroom

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ABSTRACT. *Wisdom learning is an innovation of learning style under the guidance of the smart Classroom concept, and it is an effective means to improve the efficiency of university students' language learning in the information age. This paper introduces the smart learning mode of English in minority university from the concept of the smart classroom and its interactive, experiential and diversified characteristics. It focuses on the learning design of the smart learning mode before, during and after the class. Smart learning is an effective solution to the problems of unbalanced English education resource, low initiative and efficiency in English learning in especially the underdeveloped area in China.*

KEYWORDS: *Smart classroom, Smart learning, Minority university, English learning*

1. Introduction

The current development of high education in China is generally promising, but the development gap between urban and rural areas and between the east and the west still exists. In some coastal cities, people have enjoyed most advanced education resources while many minority universities in the central and western regions are still included in the project of Targeted Poverty Alleviation. Due to the poor living and working conditions in underdeveloped regions, most excellent teaching talents would rather do other work in big cities than to teach in those places, which makes the gap of imbalanced education development between developed and underdeveloped areas wider. From a macro perspective, China's education is facing the superposition of multiple levels of education and historical missions, and the cask effects are becoming more evident. It is based on such a reality that the wisdom classroom concept came into being, and its mission, to a large extent, is to make the superior reaching resources shared equally, which will greatly promote the equity of education. The smart classroom which caters to the development trend of current teaching resources and methods helps teachers and students to communicate dynamically and openly. So it promotes personalized learning among students and enables teachers to better understand each individual's learning efficiency and implements flexible teaching strategies and evaluations accordingly. At the same time, the scientific data collected during the process helps teachers to flexibly and properly handle any emergencies in teaching. With its unique superiorities, Smart Classroom English Teaching provides students with a superior learning environment and immersive sensory experience, allowing them to experience all aspects of social and cultural life in English speaking countries, which will eventually stimulate students' interest in learning and enhance their motivation to learn English.

2. Background of Smart Classroom

Smart classroom claims a new requirement for basic education under the background of informatization, big data and artificial intelligence. Constructivism holds that learning should be based on the student-centered theory and believes that the access to knowledge depends on the support of external environments, including the construction of teacher-learning partnerships, and the proper use of certain Learning resources. Constructivist requires teachers to change their roles from feeders and imparters of knowledge to assistants and promoters of students^[1]. With the rapid development of information technology in the new era, the new situation requires teachers to adopt new English teaching ideas, design, methods and models in the English teaching process. By building a student-centered learning platform, students can obtain the resources, information and services they need in time, enjoy personalized resources and services, and constantly explore their interests and hobbies in English, which is conducive to develop their potential to make English learning easier and more efficient and finally to transform the identity from “a teacher-centered” into a “learner-centered”.

Smart learning mainly goes through the process of pre-class preparation, interactive classroom, online testing, homework after class, autonomous learning and error correction. With the help of various new media, new technologies and smart devices, students can create and demonstrate realistic learning situations for classroom English teaching before, during and after class to enhance the three-dimensional communication between teachers and students and help learners to construct their system of knowledge^[2]. The smart classroom learning is progressive and the whole process is divided into many small sections while each of them is interconnected and mutually reinforced. During this learning process, students decide their own pace and choose rationally appropriate material according to their level and interests. The three-dimensional and autonomous learning process will help students step by step to achieve their goals. Smart classrooms apply the latest educational information and advanced technology to promote students' self-directed learning, and students will become more positive since the ways of learning are more interactive and interesting. Based on big data information analysis, students' learning behaviors can be monitored in real-time and regular feedback on students' performance greatly improve their learning effect.

3. Concepts and Characteristics of Smart Classroom

3.1 The Concept of Smart Classroom

Today, the concept of a smart classroom has undergone great changes. A smart classroom in the new era of socialism refers to an intelligent and efficient classroom based on advanced learning methods and aiming at promoting the development of students' core literacy by using intelligent information technologies such as artificial intelligence, big data, cloud computing and the Internet of things. The building of a "cloud -- platform -- terminal" structure aims to create a networked, accurate, interactive and intelligent learning ecosystem to provide a full view teaching application integrated with online and offline resources, in-class and extra-curricular assignments and virtual and reality transformation^[3]. It will promote the innovation of the teaching model of subject intelligence, truly realize personalized learning and individualized teaching, and promote learners to turn knowledge into wisdom.

To correctly understand the definition of smart classrooms, we should grasp the new connotations contained in the above concepts: First, in the concept of system services, we should focus on the needs of new curriculum implementation and new reform of exam evaluation, highlight the training requirements of the core literacy, support and serve the transformation of talent training mode and teaching methods under this information environment; Second, the whole structure of the system needs to be upgraded. The overall design of the products which were developed separately and partially should be integrated with unified technical standards, easy sharing of data and application so as to form a complete system of information-based classroom teaching. Third, when building the platform system, artificial intelligence, big data and other intelligent technologies should be fully applied to empower the system with more functions. Automatic speech recognition, pattern recognition, natural language processing and other technologies should be widely adopted to improve the AI capabilities of intelligent service; Fourth, as about the teaching application mode, Smart Classroom transforms the application of some courses, parts, and scenes taught in the past to all subjects, all processes, and normalized applications to realize the integration of in and out of the classroom, online and offline, Virtual and reality, which infiltrate every process of teaching and learning^[4].

3.2 Characteristics of Smart Classroom

3.2.1 Omnidirectional Interactivity

The essence of classroom teaching is interactive and interlaced, which is a kind of intersection and collision between teachers and students. The construction of a smart classroom is to achieve and support a full range of interactive effects, which are mainly reflected in the following three aspects: the first is the interaction of media. The whole process of learning and communication through multimedia by voice, physical movements or other means are recorded in forms of data in the system. When data is analyzed intelligently, each student will be provided with professional feedback and more personalized recommendation for his further study. The second is the interaction between teachers and students. Interaction through face-to-face or web forums, QQ, WeChat or other networks make barrier-free interactive communication accessible between teachers and students anytime, anywhere and that will stimulate students' in-depth learning and inspirations. The third is the interaction between students. Face-to-face or real-time communication through intelligent devices promotes the exchange of students' ideas and encourages them to jointly solve the problems and difficulties in reality, which is beneficial to

develop their communication and problem-solving skills [5].

3.2.2 Learning Experience

Teacher's Classroom teaching should attach more importance to students' learning experience and efficiency. In the classroom of the smart classroom, the learning environment has unique characteristics such as adaptability, perception, vividness, and interactivity, which can increase the student's experience of the learning process, thereby helping students to enhance learning interest and concentration, improve learning effects and practical communication ability; in smart classroom teaching, the three-dimensional realistic learning scene conforms to contemporary university students' behavior habits, full sense of technology learning equipment and endless learning resources, which can guide students to actively participate in classroom learning. These mobile, situational, and perceptive activities enable students to apply quickly and efficiently the knowledge to solve the problems that arise in the actual learning, and finally promote their growth of wisdom in practice.

The rapid development and improvement of information technology provide students with more learning channels. Today's university students can easily search for information through portable devices and communicate and interact with each other anytime, anywhere. In a scenario-based learning environment, their thinking and cognition are more specific and realistic. These diversified learning tools can help students to deepen their understanding of knowledge concepts, ontology knowledge, method ontology knowledge, application of ontology knowledge and the construction of intelligence [6], which can help students to build a semantic network of the learned knowledge and enable them to become knowledge activists and practitioners, and ultimately achieve efficient absorption of knowledge. Smart learning which makes students more focused and motivated will promote a change from duck-filling learning to self-directed learning. In all, making learning a pleasant experience is the ultimate goal of smart learning.

4. Design of Learning Model for English Smart Classroom in Minority Universities

English is a compulsory course for basic education in China. As one of the subjects occupies most school hours and scores in university courses, the achievement of English learning imposes a direct impact on the overall development of students. On the one hand, a long term struggling in English will bring great frustration to the physical and psychological growth of adolescence. On the other hand, inefficient learning will result in the other two consequences: the students with poor foundation may finally give up learning hopelessly. And for those who are struggling to improve English have to spend more time on English which brings bad effects to the study of other courses [7]. So the consequence will definitely harm the students whatever which result is. Since the 18th National Congress of the Communist Party of China, the government has increased its investment in hardware and software facilities for basic education in the central and western regions where economic development is inferior. What does not match the speed of hardware development is people's mind and practice on how to apply these modern information technologies to make up the gap of superior education resources in these areas. Smart learning advocates advanced teaching concepts, methods, equipment and environments to cultivate students' interest in English learning, which will finally improve the English learning achievements in school. It is urgent to build a physical environment that is conducive to smart learning based on existing resources composing of mainly the infrastructure, network, information technology learning platform and smart mobile terminal equipment. In this way, smart learning can achieve a relative balance of superior educational resources across the country. And more importantly, smart environments in smart classrooms are conducive to promote students' wisdom and cultivate students as smart talents of the times. Smart classroom teaching involves activities among all participants in classrooms and generally includes three stages.

Pre-class preparation is essential for smart learning. It makes students familiar with the content in advance and shifts the focus of learning from traditional after-class consolidation to the preparation before class so that students can join a class with questions and cooperate with others to solve problems, which is better for constructing their knowledge system and increase class learning efficiency. When students receive various types of homework in forms of pictures, videos and audios before the class, they will learn and practice repeatedly according to their own pace. They may imitate and respond online while watching and the process is recorded as diagnosing feedback for further improvements. In this way, both teachers and students will be able to supervise the whole learning process to ensure an effective and productive learning achievement.[8]. Teachers can also inform students to learn in advance through terminals such as computers or mobile phones through various online MOOC platforms and micro-class video resources. As long as the school, teachers, students, and parents cooperate well, the existing network information resources have basically met the various needs of college

English pre-learning, which saves a lot of effort and resources to make their own systems.

In short, pre-class preparation is an important part of smart learning. Compared with traditional style, the most important feature of the preparation phase of smart learning is to apply various information technologies to impart students in advance the knowledge that teachers are going to teach in the coming class and diagnose by themselves by taking online assessments through network platform before class. Finally, teachers will save their time to repeat the same content when teaching in the classroom and focus more on students' inquiries through cooperative learning. Therefore, smart learning is not a unidirectional and no feedback input, but two-way, interactive learning among students and between man and advanced information technology.

4.1 Interactive Learning between Teachers and Students

The learning activity in the classroom is the core of smart learning. For smart classrooms, students are the subjects and participants of classroom teaching while teachers are the mentors and organizers. With the help of modern information technology, smart learning can provide continuous and efficient interaction between teachers and students and among students, which will promote the generation of individual wisdom in these interactions [9]. Compared with the traditional classroom, teachers spare no efforts to introduce and explain the content of textbooks in the hope that students can understand and make notes as much as possible. Although the information transmitted in this way is more direct and students' behaviors are easier to be controlled, it deprives their opportunities for active thinking, questioning, and criticism, and it does not take into account the reality of differentiation in acceptance among different individuals. Smart learning, instead, applying individual media before the class such as MOOC, micro-video, WeChat, or even QQ, Tit Talk to provide students with personalized and repeated learning based on a certain topic to meet different needs of students. When they come to the classroom, the time of textbook lecturing can be saved to organize discussion and questioning activities among all participants. The traditional cramming-style teaching has now become an interactive, heuristic and blended smart learning model.

During this process, the teacher's role is to organize students to participate in various activities. For example, by carrying out situational simulations to train students' communication and oral expression skills; to share how to solve the boring and complex grammatical rules problems such as subjunctive mood and attributive clauses and so on. In such a classroom, the boundaries between teachers and students are no longer so clear because students sometimes play the role of teachers while a teacher may also become just an audience in the class. According to the theory of "The Cone of Learning" proposed by American scholar Edgar Dale in 1946, the knowledge acquired through the teacher's lecture has the lowest memory retention rate which is just about 5%, and the ways to learn through audiovisual, discussion, demonstration and teaching others are more efficient, the memorization rate for the last one by teaching others can be kept above 90% according to this study. Certainly, we need to realize that the concept of smart learning does not simply mean the stacking of intelligent devices, but more concentrates on the smart selection and utilization of learning concepts, methods and strategies. 4.3 consolidation after class

In the homework section after class, students can use the smart platform to review the homework assigned by the teacher in the form of pictures, video, audio, or other forms and conduct intelligent self-test and knowledge consolidation. With the help of answering questions and automatic corrections on the self-learning platform, students can repeatedly study a certain language point until they have totally understood. For difficult points, they can get answers from classmates or teachers by posting help on the forum. The after-school learning in the smart classroom is a more dynamic, time-space-free, three-dimensional and efficient smart learning process.

6. The Advantages of Constructing a Smart English Learning Model in Minority University

The main purpose of creating a smart English learning model is to give students' subjective initiative into full play and improve their awareness and efficiency in independent learning. The development of information technology and the popularization of information platforms in schools provide a convenient and effective channel for English learning, and also provide new ideas for the innovation of classroom teaching models.

6.1 Promote Educational Equity

By applying modern information technology to minority university English classrooms, the interaction between teachers and students will be more convenient and efficient. While sitting at home or in a classroom, the rich resources and advanced learning methods can be learned through the internet without worries of time and

space limitations, and hence allows more students to share good teachers, learning materials and advanced methods, which will promote the equitable development of education across the whole country..5.2 Improve English teaching efficiency

With the advantages of rich English teaching materials, personalized learning assistance, real-time diagnose of assignments and diversified forms of learning, the smart classroom has significantly increased classroom functions and improved English teaching efficiency. In a traditional class, it is impossible for a teacher to interact with every individual in a class with 50 or more students. But today, the problem can be solved since the smart classroom is based on modern information technology to provide dynamic evaluation for every student's learning process and recommend intelligently appropriate materials for them. The construction of the smart classroom is based on the integration and utilization of resources, guided by advanced teaching theories and the introduction of modern teaching methods to promote the students' wisdom development. Especially or English education in underdeveloped areas, smart classrooms can help improve the effectiveness of information-based teaching reform in minority university and narrow the gap of English teaching quality between developed and developing regions .

6.2 Improve Students' Learning Initiative

Compared with traditional teaching methods, smart classroom teaching differentiates from traditional one in many aspects: modern electronic products are more popular, the learning contents are more abundant and dynamic, interaction and communication between teachers and students or among students in and out of class are more frequent, which undoubtedly provide the student with better learning experience. The ways of communication with instructors will be revolutionary since they can consult with each other from any place at any time when it is needed because the internet and technology will never be exhausted. Smart learning makes three-dimensional contact accessible and its diversified and vivid learning modes also enhance students' interest and initiative in learning.

6.3 Expanding English Learning Channels

Smart classroom is a universal and open teaching model which have greatly expanded the channels for students' acquisition of knowledge. In a smart classroom, a variety of high-quality English teaching software and equipment with advanced artificial intelligence can make students' learning more effective with less effort. As minority university students who are in their early adolescence, every individual has his own personality and learning habit and what smart classroom advocates is to provide diversified and intelligent solutions to their different needs so as to promote the development of wisdom.

7. Conclusion

The English learning achievement in minority university is a major event related to young people's sustainable development and the future of a the nation. With the rapid boom of the national economy and the improvement of people's living conditions, the software and hardware constructions in schools have been greatly developed, which creates necessary basic conditions for a smart classroom building. Smart learning, as an inevitable product of the development of the Internet, big data and artificial intelligence of this age, is becoming the mainstream of education globally in the new era and is also taken as a revision of the traditional teaching theories. Adopting a smart classroom learning model will make student's learning process more intelligent and efficient, it enables minority university students to exploit their potentials, improve their scores, and provide a broader space for the diverse development of teachers and students. In this way, the implementation of student-centered teaching ideas can be truly realized.

Acknowledgment

2017 Project of Teaching Content and Curriculum System Reform: The Construction of Smart Learning for Minority University English Learning From the Perspective of Smart Classroom, Qiannan Normal University for Nationalities (project code. 2017xjg0502).

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