Article

Research on the Construction of Future Smart Classroom Teaching Mode

Jian Huang,Haimei Wei*

Huanggang normal University, Huanggang City,Huanggang 438000 , China

Abstract: Based on the vision of "future campus", this paper discusses the new model of "future classroom", which is an important part of "future campus". Under the background of the rapid development of educational science and technology, this paper makes a positive discussion on the design idea of "future classroom", and establishes a kind of "future classroom" which can make educational equipment intelligent, participate in experience humanized and open space resources. in order to meet the changes of learning mode faced by students in the new teaching space, but also fully take into account the learning needs of students. On this basis, this paper also introduces three new learning models.

Keywords: future classroom; new learning mode; teaching space

1. The connotation of the future classroom

In recent years, "Future School" has carried out a lot of research and practice in educational and scientific research institutions and schools at home and abroad. "Future School" takes the 21st century as its goal, modern educational information technology as its support, personalized teaching and learning as its goal, and training talents to meet the needs of social development as its goal.[1]. With the development of science and technology and the progress of society, education is also undergoing great changes. The traditional classroom teaching model has been unable to meet the needs of modern teaching, therefore, how to design and develop a new teaching model has become the focus of researchers. The future classroom is an important carrier of school teaching, and its design ideas and ways of expression will change accordingly. At present, with the rapid development of educational information construction in China, people pay more and more attention to the research and practice of "Future classroom". With the deepening of the strategy of educational informatization in our country, "Future classroom" has become a new teaching structure and

a new development direction to reform the classroom and improve the effectiveness of teaching situation. There are some simple introductions to the concept of "future classroom" both at home and abroad. Some scholars have proposed that the future classroom is no longer a specific physical classroom, but should be corresponding to the traditional classroom and modern classroom.[2].

2. Characteristics of future classroom design

2.1 AI-oriented educational equipment

Intelligent control of the underlying environment of the classroom is not only an important condition for the future classroom construction, but also the embodiment of the humanization of the teaching environment.The intelligent classroom educational equipment, which is guided by neuroscience and learning science, and supported by a variety of technologies, is a three-dimensional structure that combines the physical space with the teacher's virtual space. In addition, there are also some easy-to-operate digital platforms that can integrate immediate unconscious feedback with students' learning, such as providing instant feedback in e-mail or to collect students' views on the course. In addition, there are some teaching media that can help teachers and students to teach smoothly, such as the recording system. Teachers can track real teaching records by automatically downloading the cloud. Free interaction based on artificial intelligence technology makes intelligent interactive devices make learning more interesting and practical. In teaching practice, teachers should also think, research and develop the teaching content.

2.2 Digital resource sharing

The openness of future classrooms is mainly reflected in the openness of teaching space and teaching resources. In the future classroom, teachers and students can dynamically divide the classroom according to different teaching needs, fully realizing one room with multiple functions. Meanwhile, the network space formed by various teaching application data platforms makes interaction and connection ubiquitous. In terms of teaching resources, future classrooms will be equipped with abundant learning resources, such as learning tools, learning materials, and experimental equipment. The classroom walls are to some extent blank, constantly enriching the classroom with student works. At the same time, through interaction in cyberspace, teachers and students can flexibly introduce external digital resources, and can output classroom discussions to multiple screens, making real-time input and output more open in the teaching ecosystem. With the dual opening of teaching space and teaching resources, students' learning and teachers' teaching will enter a new stage, creating more possibilities.

3. The new model of classroom learning in the future

3.1 Adaptive advanced learning

Based on learners' existing knowledge and abilities, recommend suitable learning resources for learners according to their needs and interests, and provide them with suitable learning styles and tools according to their needs and interests. let them carry out autonomous learning efficiently in an efficient, flexible and autonomous learning environment, and diagnose and feedback the learning results. Promote the continuous progress and personalized development of learners. It is suitable for high-level research.. The specific adaptive framework diagram is shown in figure 1.
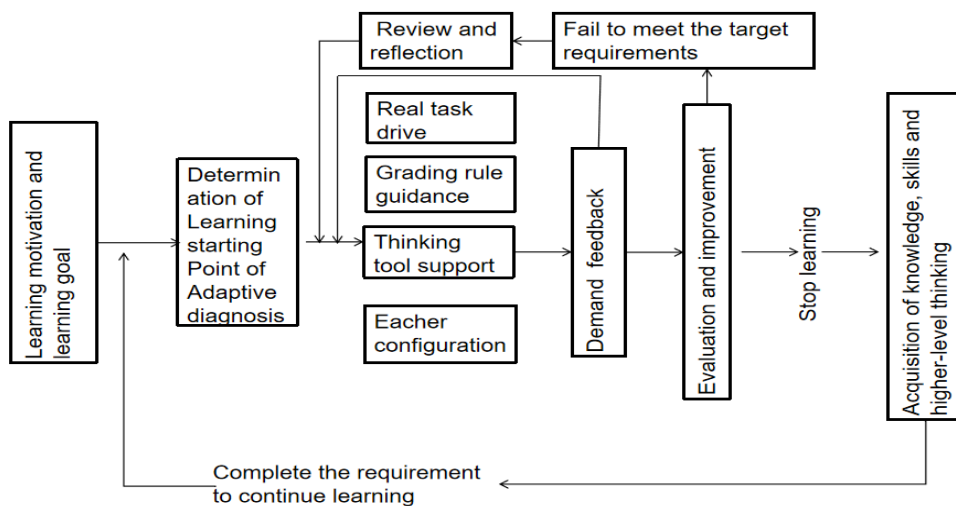

Figure 1. frame diagram of adaptive advanced learning

According to the learning situation of students, this model pays enough attention to different learning starting points, makes use of a variety of learning platforms and tools, and transforms traditional learning into a new learning process, so that students can learn according to their own learning process. At the same time, they can also use immediate evaluation and feedback to improve learning efficiency, so as to ensure the effectiveness of learning. On this basis, according to different levels of students, develop advanced courses suitable for them, and use a variety of auxiliary tools to help them complete the project. Then, through the actual homework, let the students write and report in their own language in their daily life, and they will have different learning achievements according to their different learning levels. the teacher evaluates the personal mastery of their whole unit to lay the foundation for the next study.

3.2 Multidimensional interactive learning

Learning is a process of socialization. The most important feature of the future classroom is the convenient interaction and connection, which allows students to establish all kinds of links between online and offline, so as to achieve multi-directional interaction and deepen their understanding of what they have learned. Multi-dimensional interactive learning is a new teaching method that organically combines a variety of learning resources with scientific and technological means to provide omni-directional and personalized learning experience. It breaks through the traditional classroom teaching mode and pays more attention to the development of students' self-study and innovation. The basic idea of multi-dimensional

interactive teaching is "people-oriented", which fully arouses the enthusiasm of students and their enthusiasm for learning. Through the introduction of advanced scientific and technological means such as virtual reality, augmented reality and artificial intelligence, students can practice and simulate in the virtual environment, so as to enhance their practical application ability. At the same time, in the multi-dimensional interactive teaching, we pay more attention to the students' teamwork and communication. Through online interactive platforms and instant interactive tools, students can learn and share with each other.

3.2.1 Textbook confirmation

The areas suitable for multi-dimensional interactive learning are: micro-phenomena in microscience, heterogeneous cultural phenomena, historical situations in the humanities, as well as difficult knowledge and skills divorced from real life. It is a kind of research-based learning suitable for teaching content, with flexibility and extensiveness.[3].

3.2.2 The specific transformation process

In this new classroom model, teachers will make full use of the concept of multi-dimensional interaction, arbitrarily assemble the tables and chairs in each learning area in the classroom, and carry out multi-dimensional interaction with the learning cycle center as the core. Comprehensively mobilize students' five senses (touch, touch, hearing, smell, taste), so that students can gain a profound experience of knowledge under the coordination of various senses. In such a learning environment, students can not only experience the pleasure that knowledge brings to them, but also experience the thinking that knowledge brings to them through a variety of senses. In this process of exploration, students can use their multi-disciplinary abilities.

3.3 Question inquiry learning

Finally, through a case study, this paper discusses how to cultivate students' innovative ability from the perspective of visual design. You can learn how to solve this problem. This model organically integrates the traditional teaching methods and network teaching, which can not only give full play to the guidance and incentive role of teachers, but also maximize the initiative, enthusiasm and creativity of students. This model makes full use of the learning platform and rich tools, so that students can choose their own scientific exploration tools in reading, experiment and discussion, and improve their ability to encounter all kinds of scientific problems in their daily life. realize the transfer and use of knowledge and stimulate students' interest and desire for learning.

4. The future teachers' practical effect presupposition

4.1 Continuous research promotes the reshaping of teaching processes

As a new idea and thought, "Future classroom" is a comprehensive reshaping of the traditional education and teaching process under the background of "Internet +" and supported by network information technology. It breaks the "arbitrary" teaching method of

teachers in the traditional classroom, highlights the dominant position of students, and makes learning really become students' independent choice. On this basis, teachers will also make use of network technology and online platform through in-depth mining and analysis of network resources, to provide students with more rich and diverse learning resources, broader learning space and more high-quality and efficient educational services. The idea and idea of designing students to deeply explore the learning model and construct a "future" learning model is of certain reference significance for us to carry out education and teaching reform under the condition of information technology in the future.

4.2 Promote the empowerment and efficiency of learning with spatial change.

"Future classroom" has great advantages in cultivating students' autonomous learning ability, communication ability, cooperation ability and computer ability. At the same time, it also has great advantages in cultivating students' creative thinking and critical thinking. Through the observation and study of the "future classroom", we think that the "future classroom" has indeed played a positive role in cultivating students' various qualities. Through space transformation, the classroom is moved from the original fixed classroom and classroom to a variety of spaces such as cloud, air, ground, sea and so on. Through such spatial transformation, students are provided with more learning environment and resources to choose from. However, we should also see that the "future classroom" plays a very significant role in cultivating students' creative thinking and critical thinking.

4.3 Pay attention to the needs and experiences of all stakeholders in the learning space.

On this basis, this paper puts forward a new research method, that is, a new research idea. [4].Of course, other relevant personnel, such as students' parents and teaching administrators, should not be ignored, because the teaching space is not only the material space, but also the "virtual space" under the digital technology, and of course, it also includes others. In particular, when designing the learning space, we should consider whether the teacher can easily use it and whether it is convenient to operate. Because of innovation, the learning space should not become a new teaching burden for teachers.[5] On this basis, this study puts forward a student-centered and student-centered learning space design. As far as students are concerned, while considering whether the physical properties of the space meet the students' comfort and safety needs, we should also consider the personalized learning needs of different types and grades of students from the point of view of equipment configuration and layout. In the process of teaching, attention should be paid to the combination of entity and virtual learning space in order to improve students' digital ability. In the future classroom design, in addition to the use of science and technology, we should also pay attention to the interaction and cooperation between students. In this interactive learning atmosphere, students can communicate and cooperate better, and can effectively improve their communication and cooperation ability.In addition, future classrooms can help students develop more possibilities.

5. Conclusion

In the classroom of the future, imagination is the driving force of creation, while technology is the support and stimulation of passion. The classroom of the future is a "home" in which everyone has his own ideas, independent but vibrant, releasing a strong desire to explore, allowing children to explore and grow up freely. Therefore, in the process of classroom application and education and training in the future, teachers should be guided to pay more attention to students' core literacy, not only to the cultivation of students' subject quality and professional ability, but also to the characteristics of the information age.[6]. Based on the pattern of the global village, based on the concept of cultivating global citizens, teachers can master the design of interdisciplinary tasks, organize students to solve and explore real problems, and use learning resources and human resources in the open learning environment of information technology to infiltrate the cultivation of students' core skills and literacy, so as to enhance the level of teachers' design of constructive learning activities.

With the continuous development of science and technology and social progress, the field of education is also constantly changing and innovating. The future classroom construction looks forward to a more intelligent, diversified and personalized development direction. First of all, the future classroom will fully integrate advanced scientific and technological equipment and educational resources to realize intelligent teaching. In addition, the future classrooms will provide rich educational resources, including virtual reality and online courses, so that students can study and explore in a wider range of fields. Finally, the future classroom will pay more attention to personalized education. Every student's learning needs and hobbies are different. In the future, classrooms will meet students' needs through personalized learning plans and teaching methods to help them explore their potential and interests. In a word, the future classroom construction will be intelligent, diversified and personalized as the main development direction.

Conflict of interest: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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