

Research on Golden Class of Informatization Teaching Method and the Cultivation of Teaching Art in the Artificial Intelligence Era

Shi Junwei

School of Management Science and Engineering, Shandong Institute of Business and Technology
Yantai, 264005, China

Abstract—In the informationization era, the deep integration of information technology and mathematics courses has greatly improved the form of information dissemination and interaction between teachers and students, and has created a new classroom teaching environment for educators and learners. This paper first briefly answers what is "water class" and what is "golden class"; from the low-level classroom, instilling classroom, closed classroom and rethinking, the paper discusses the water of the water class; from the high-level classroom, dialogue classroom, open classroom, knowledge and action, and combination of learning and thinking, this paper discusses the golden of the golden class. Conduct student-centered university teaching and curriculum specialization design research, scientifically improve the teaching level of new undergraduate college teachers, and create a team of "golden teachers" with professional competence, education and teaching level. Results of reverse design and continuous improvement systematically promotes the establishment of a talent training program with conformity and achievement, and guarantees the construction of the new normal of the golden class with system construction. Eliminate the water class and create the golden class to improve the quality of teaching.

Keywords—Golden class; Artificial intelligence; Information technology; Classroom teaching; Teaching art

I. INTRODUCTION

On June 21, 2018, the Ministry of Education held the first new-age undergraduate education work conference in China's higher education since the reform and opening up. In five months, first-rate undergraduate education has been a hot topic in the higher education sector and even in society. The "water class" and the "golden class" have become hot words, and "eliminating water courses and creating gold courses" have been recognized by higher education institutions and the society. So, what is the "golden class"? What is the "golden class" of Chinese universities? What measures will we take to build a "golden class" for Chinese universities?

What is the "Golden Lesson"? It can be attributed to "two sexes": high-level, innovative and challenging. First, the high-order nature is the organic integration of knowledge, ability and quality, and the comprehensive ability and advanced thinking of students to solve complex problems. Course teaching is not a simple knowledge transfer, it is a combination of knowledge, ability and quality, and it is not just a

combination of simple knowledge, ability and quality. A key requirement for undergraduate graduation certification is the comprehensive ability and advanced thinking of graduates to solve complex problems. There is no standard answer, and more is the training of ability and thinking. Second, innovation. Innovation is reflected in three aspects. First, the curriculum content has cutting-edge and contemporary characteristics. Second, the teaching form reflects advanced and interactive. It is not full house, not me to listen to you; third, the learning results are exploratory and personalized. It is not simply telling you what is right and what is wrong, but to train students to explore and to develop the personality characteristics of students. The degree of challenge means that the course must have certain difficulty. Students and teachers need to take a jump to get it. The teacher should take the time to spend time and energy to prepare lessons. Students should have more study time and thinking after class. Be a guarantee.

The traditional teaching content is just a simple textbook knowledge. After using the information means, the teaching materials can be processed. Using multimedia technology to transform past static and two-dimensional textbooks into dynamic, three-dimensional or even four-dimensional textbooks composed of sounds, words, animations and images. For example, Bihui Tingle's micro-learning platform allows teachers to upload learning resources, such as micro-course videos, classroom videos, courseware, etc., to make the courseware more vivid and enhance students' interest in learning and self-learning. The use of online teaching extends the teaching content from books to all aspects of society. In this way, the knowledge of books is enriched and expanded, and students can learn more, faster, and better during the prescribed teaching time.

In the instructional design of information technology, students change from passively accepting knowledge to actively learning knowledge, and through information technology, use various learning resources to actively construct knowledge. Students must not only learn knowledge, but also master the ability to learn. Students must have independent learning, creativity, innovation, self-learning, self-management, collaboration, and coordination. Students will become explorers of knowledge and true cognitive subjects in the learning process. In traditional instructional design, students only act as loyal listeners. Little or no opportunity to take

advantage of your initiative. What I have learned is only a retelling of the content of the textbook. Bihui Tenge's micro-learning platform can also monitor the learner's learning situation in real time from the perspective of the teacher. The teacher adjusts the teaching plan according to the learner's situation at any time, so that the teaching can be taught according to the material.

II. HOW TO CREATE A GOLDEN CLASS?

From the perspective of the curriculum objectives, starting from the actual needs of teachers and students in colleges and universities, combined with the teaching practice of different colleges and universities, a clear and well-structured teaching material system has been set up, and the training goal of whole-person education has been established, reflecting the high level of "golden class". The standard of order. The resource support of the course requires both the "top design" of high-rise buildings and the rigorous and meticulous periodic construction. Including professional training programs, curriculum programs, curriculum standards, quality textbooks, teacher reference books, digital platforms, media resources, etc. are all important construction content.

From the perspective of teaching content, the selection of teaching materials focuses on ideological, wide-ranging, high-depth, taking into account science and humanities, focusing on cultivating students' ability to analyze and solve problems, intercultural communication skills, leadership, imagination, innovation, speculation, etc. The multi-dimensional ability reflects the innovation, challenge and high-level of the "Golden Lesson". No matter how advanced the curriculum model, it will ultimately be realized through teachers in the classroom. Teachers are the key factor in creating a "golden class" for applied colleges. Long-term, systematic and continuous training is an important means to improve teachers' teaching ability.

From the perspective of teaching methods and curriculum evaluation, the course uses the "output-oriented approach" to input the unit structure design of input facilitation, output drive, and output evaluation, stimulate interest, reserve knowledge, develop ability, guide output, and task content can be measured. It can help to build a "golden class" with innovation and challenge.

From the perspective of teaching mode, the course is equipped with resources such as micro-courses, digital courses, interactive courseware, mobile learning applications, etc., relying on the campus wisdom education cloud platform of the School of Business of Shandong Institute of Business and Technology, to help build an online and offline hybrid "golden class". Through study and discussion, unifying thoughts, improving theoretical quality, changing teachers' perceptions of curriculum and teaching, guiding them to scientifically formulate colleges and universities' training objectives, and setting courses according to "market demand, professional standards, and enterprise needs." The curriculum construction guidelines based on the needs of students and the need to educate the needs of the society, the construction of college "golden class" as an important measure of professional construction and brand formation.

The "Golden Class" class is an active community of highly interactive learning elements. In addition to the interpersonal interaction between students and teachers, the interaction of people and technical tools, the interaction of technical tools and resources, the interaction of technical tools and space, the interaction of physical space and virtual space all play an important role in determining the effect of learning. . In addition, the "Golden Class" class should also achieve dialogue, interaction and integration between disciplines, so that the knowledge of different disciplines is divided, closed, and single, towards integration, openness, and diversity. The interaction and integration between different disciplines can help to change the practice of organizing classroom content simply by subject logic, emphasizing the learner's experience, individual life and core literacy, breaking the inherent boundaries of the discipline, and taking the real problem as the core curriculum. Refactoring.

III. INNOVATION OF CLASSROOM TEACHING METHODS IN THE ARTIFICIAL INTELLIGENCE ERA

A. *The main challenges for the development of education innovation in the era of artificial intelligence*

In today's rapid development of artificial intelligence, big data, virtual simulation and "Internet +" technologies, education and teaching are facing many development opportunities, but at the same time, the application of technology has brought many challenges that need to be addressed.

Challenge 1: The application of technologies such as "Internet +", multimedia, artificial intelligence, and big data provides a means to quickly acquire and present knowledge and information, but it also changes the rhythm of teaching and learning. How do teachers control the rhythm of teaching and learning to make them more in line with the cognitive rules of students.

Challenge 2: The application of technologies such as "Internet +", artificial intelligence, and big data has broken the pattern in which students mainly acquire knowledge and information through classrooms and have consistent learning steps. How do teachers cope with the huge differences between students due to the broken pattern, so that classroom teaching is as suitable as possible for the actual situation of more students.

Challenge 3: The application of artificial intelligence, big data and other technologies may bring greater convenience to teachers in correcting operations and scoring. However, while saving time, teachers also lack the opportunity to fully understand each student's learning situation, and the targeting of teaching regulation may be greatly affected. How do teachers weigh the pros and cons and use technology reasonably to fully understand the actual situation of students and to reduce the burden as much as possible.

B. *Artificial Intelligence Promoting Educational Innovation*

Artificial intelligence accelerates the shift in student learning styles. Artificial intelligence has injected new vitality into individualized learning and fostering innovative thinking. The important problem facing education and teaching in the new era is that technology plays a very limited role in

supporting students' learning, individualized development and thinking cultivation. Artificial intelligence changes the way students learn, and can generate personalized, customized learning programs based on students' specific learning needs, and provide an immersive learning experience and a highly intelligent learning process tracking service.

Artificial intelligence further enriches the content of education and teaching. The "New Generation Artificial Intelligence Development Plan" clearly requires: "Set up artificial intelligence related courses in primary and secondary schools, and gradually promote programming education", and soon artificial intelligence technology will directly become the general teaching content of the basic education stage. At the same time, artificial intelligence is forcing the reconstruction of the teaching content system, the curriculum content of innovative thinking and collaboration ability training will be strengthened, and the implementation of interdisciplinary content integration becomes an inevitable trend. For example, STEAM education has already presented typical characteristics in this respect.

Artificial intelligence has changed the way teaching is evaluated. The use of artificial intelligence technology can provide more diverse process-based teaching evaluation, making the evaluation means more abundant, the evaluation process more scientific, and the evaluation results more accurate. The synergy between the intelligent teaching assistant and the intelligent evaluation system can provide students with comprehensive learning diagnosis and timely and precise learning intervention, thus realizing the scale and individualization of teaching.

Artificial intelligence significantly improves the level of education governance. The in-depth application of artificial intelligence in the field of education management will make management services more intelligent. The informationization and intelligence of education management can effectively support the separation of education, management, and evaluation, improve the level of public service of education, and promote the modernization of education and governance systems. Based on the artificial intelligence of education big data, through the data collection, modeling, intelligent analysis and systematic analysis of the education and teaching process, the scientific decision-making of education and teaching and the precision of resource allocation are realized.

Artificial intelligence has completely changed the role of teachers. The deep integration of artificial intelligence and education has given the teacher's role a new era connotation. Artificial intelligence does not directly replace teachers, but through the combination of "human-technique", teachers can be freed from heavy knowledge transfer and engage in more creative moral education and ability development. The requirements of teachers' ability in the intelligent era have also undergone tremendous changes. The requirements for teachers' information literacy have been upgraded to an unprecedentedly important position. The teacher's ability standards will be redefined and the professional requirements for teachers will be fully updated.

C. Artificial intelligence promoting education transformation and upgrading

First, a comprehensively perceived learning place. In the past, the campus was just a physical place to teach; in the future, the campus will become a smart space for all things connected. Using Internet of Things technology to monitor parameters such as temperature, light, sound, smell, etc., automatically adjust windows, lamps, air conditioners, fresh air systems and other equipment, and actively respond to campus security warnings to ensure green and efficient operation of school systems. Using context-aware technology to capture learner information in a natural state, accurately identify the student's growth status, provide learning diagnosis reports, height and weight charts, health analysis reports, etc., to provide strong support for students' physical and mental health development. Use big data technology to track the learning process, understand students' cognitive levels and characteristics, and provide tailored learning paths.

Second, a flexible and innovative school layout. With the advent of the artificial intelligence era, educational concepts and teaching organization forms are undergoing profound changes, and the form of learning space will also change. We need to turn the same classroom into a flexible and innovative learning space, break the factory-floor classroom design, equipped with mobile, easy-to-change table and chair facilities, and support teachers in carrying out diverse teaching activities. Expanding the public space of the school, in accordance with the multi-functional, reconfigurable design thinking, strengthen the mutual transformation of the learning resources, activity areas, rest areas and other space resources, to provide students with more space for activities and communication, and promote the social development of students. Optimize the campus space, provide students with hands-on practice venues, establish a new learning environment such as maker space, innovation lab, and cultivate a community of practice with common interests.

IV. THE CULTIVATION OF TEACHING ART IN ARTIFICIAL INTELLIGENCE ERA

"Education must adapt to the development of society. This is a big trend." Li thickened said that the future education should take the road of educating people. He explained that the fundamental characteristic of educating people is to cultivate students with creative thinking, critical thinking, humanistic artistic thinking, design thinking, collaborative thinking, overall thinking and intuitive thinking. He deliberately emphasized that there is no computational thinking, because that is what the machine is doing.

In the information age, artificial intelligence education teaches adults to the machine, and education is to distinguish people from robots. Li thickened said that the overall trend of education for educators has five points. The first is to stimulate students' interest in learning, the second is to cultivate students' innovative thinking and hands-on ability, cultivate the team's collaborative spirit, and contact the real world to solve real problems.

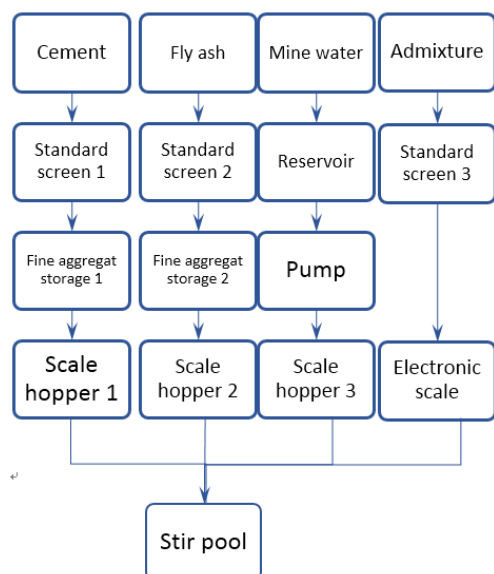


Fig.1 "Golden Class" of Informatization Teaching Method

"BBC analysis believes that the probability of teachers being replaced by robots is only 0.4%, but British education expert Anthony Seldon predicts that there are only 3,000 days left until the disappearance of human teachers. What is wrong? In the future, new social forms and educational samples In the state, knowledge, and learning style, teachers' ideological concepts, mental structure, lifestyle and role awareness, as well as the relationship between teachers and society, organizations, students, and peers, may undergo subversive changes."

"Artificial intelligence will trigger a revolution in modern teaching and learning. Many voice image recognition, wearable devices, and virtual reality imaging technologies have infiltrated the classroom, making the current teaching media, teacher-student evaluation feedback, and deep learning all changed. Students are personalized, Task-based learning, team-based learning, multidisciplinary integration and integration practices will all become more convenient with the support of smart devices.

Teachers should continue to grow their skills, make good use of artificial intelligence, improve the teaching effect, expand the boundaries of knowledge, and mobilize students' interests. They should not be indifferent and dismissive. At the same time, teachers must also reflect the status of the subject, always be the master of the school, pay attention to the growth of students. People are not only the cognitive body of learning knowledge, but also the living body with flesh and blood. Teacher careers will exist for a long time, and artificial intelligence will provide necessary assistance.

The "Golden Class" class is the practice field of information technology to help education and teaching. The quality and efficiency of the "Golden Class" class will be more and more benefited by the strong support of information technology. The environment is comfortable, the equipment is advanced, the control is convenient, and the interactive real-time information technology equipment will become a powerful weapon in the "Golden Class" class. However, the quality and efficiency of the "Golden Class" classroom is not

necessarily proportional to the modernization of information technology. The key is to be good at using information technology to provide effective support and practical services for education and teaching.

V. CONCLUSION

The future education and teaching activities will be inseparable from modern equipment. The interactive whiteboard will replace the traditional blackboard. Without this ability, it is difficult to complete the teaching and teaching tasks.

In the future education and teaching activities, after using the powerful artificial intelligence system, the sensory stimulation received by the students is rich, which will affect the students' attention to the teachers. Teachers need a rich and humorous teaching language to attract students.

Artificial intelligence is applied to education and teaching, the uncertainty will increase, because some things are pre-set, and the students facing are thinking people, students' behaviors and behaviors may exceed the preset, sudden The situation will increase, which requires teachers to deal with it flexibly.

In the future, during the learning process, the interaction time of human-computer interaction will increase, and the communication between people will be reduced, which will lead to lower emotional interaction. Therefore, teachers need to care more about caring for students and improve teachers. The feelings of life. Especially for some students who lack interest and confidence in learning, teachers need to encourage, guide and influence them.

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