

Research Article

Artificial Intelligence Technology Assisted Music Teaching Design

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Received 8 November 2021; Accepted 3 December 2021; Published 21 December 2021

Academic Editor: Baiyuan Ding

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With the continuous improvement of the global economic level and scientific level, information technology has penetrated into all fields of people's life. Today, the strategy of vigorously promoting educational modernization has created conditions for intelligent music teaching and promoted the in-depth application of artificial intelligence technology in education. Intelligent instructional design supported by artificial intelligence technology is the deep integration of information technology and music teaching. Through the intelligent perception technology, learning analysis technology, and emotional computing technology of artificial intelligence, an intelligent music teaching model is established. The online learning and education platform based on big data intelligence provides teachers with rich teaching methods, provides personalized evaluation and adaptive learning services for students' learning, and helps improve the efficiency of music teaching. The traditional teaching design model cannot effectively guide the intelligent music teaching and cannot meet the needs of students' development. Therefore, on the basis of previous studies, the author studies the intelligent teaching design supported by artificial intelligence technology. This study uses new generation information technologies such as big data, Internet of things, mobile Internet, and artificial intelligence to build a complete set of scientific intelligent music teaching design model. Wisdom teaching provides a reference for the whole process before, during, and after class, helps guide teachers to better carry out wisdom teaching, helps students explore cooperative and autonomous learning, and promotes the wisdom transformation of teaching methods and learning methods to a certain extent. Music classroom teaching has become more targeted and effective. Therefore, it is of great significance to cultivate intelligent music talents.

1. Introduction

Technology changes life; innovation leads the future. Traditional music teaching methods and learning methods can no longer satisfy the increasingly updated technology and culture, and the new ecology and new model of intelligent teaching must be reconstructed [1–5]. Intelligent music teaching empowered by artificial intelligence technology is the key goal of educational research in the new era, which is the organic integration of high technology and educational science. In order to keep up with the pace of today's era, it is very important to conduct intelligent teaching. Therefore, we must bravely shoulder the important historical task, put teaching reform at the top of education, gradually transform traditional music education to intelligent music education, and use new technologies such as artificial intelligence to cultivate smart talents and construct scientific. The

intelligent teaching design model opens a new mode of intelligent teaching to guide the implementation of intelligent teaching and lead students to realize interdisciplinary learning, deep learning, and unbounded learning [6, 7]. Artificial intelligence technology drives the development of smart teaching. The “father of cybernetics” Wiener said: “We have transformed our environment so thoroughly that we must now transform ourselves in order to survive in this new environment.” Education does not transfer knowledge from the outside to the inside, but to realize wisdom from the inside out. It is necessary to break the uniform traditional education form, build a smart education system that is compatible with the artificial intelligence era, and use artificial intelligence technology to systematically upgrade the learning environment, learning content, teaching methods, and management models, so as to provide students with rich choices and more personalized and more precise wisdom

teaching. Without intelligent education, it is difficult to realize modern education. The use of artificial intelligence technology is not only a demonstration of teaching tools, but also a new teaching ecology that is people-oriented, based on symbiosis, mutual building, and shared sharing. Intelligent education is a fair education for everyone, an education that extends to everyone's life, an education that suits everyone's personality, and an education that is more open and flexible [8], applying artificial intelligence and other modern information technologies to smart teaching, transforming the traditional teaching model of teachers plus textbooks plus students plus books to using high-tech big data analysis, cloud desktop cloud classrooms, and smart teaching using human-computer interaction form, with rich content and novel methods to guide students to actively participate in learning activities. The intelligent teaching environment is constructed by the extremely fast mobile 5G network, various big data, and new artificial intelligence technology products. Intelligent teaching is teaching aided by a new generation of information technology. Its core is to change the way teaching materials are used [9–13]. Informatization helps teachers prepare lessons intelligently, analyze and master their studies, and finally display teacher-student activities through tablets and computer devices. The teaching concept of “student-oriented, learning-based teaching” should be run through the entire learning activities, and artificial intelligence technology and equipment should be used to serve students' learning. Through the feedback and analysis of learning big data, teachers can quickly and accurately know which knowledge points of this class are difficult for students, so that they can accurately teach students in accordance with their aptitude and accurately make up for the difference. The biggest change brought about by the application of artificial intelligence technology is to empower teaching. The use of electronic teaching plans can avoid teachers' repeated copying work. Teachers can reintegrate high-quality resources at any time, which reduces the workload of teachers and can use more time and resources, energetic to provide students with personalized learning micro-tutoring to improve teaching efficiency. Students actively choose their favorite subjects and chapters for autonomous learning through computers or mobile phones or perform targeted analysis and extended exercises of wrong questions, which fully stimulates students' enthusiasm and initiative in learning. It is no longer necessary for teachers to ask questions one by one when answering questions. Students can use the tablet in their hands to answer. Teachers can see the feedback of students' answers in real time through the electronic whiteboard. Teaching is efficient and targeted; students have high interest, automatic participation, and strong interaction. This makes teaching more dynamic and scientific. Not only that, the system can also automatically count the correct rate of answers to help teachers analyze the teaching situation. Teachers use various intelligent tools to carry out teaching work, which greatly reduces teachers' repetitive work and greatly improves classroom efficiency [13–15].

There are many information platforms on the Internet, and many excellent teachers selflessly upload their own

exquisite courseware and other teaching resources to the platform, providing a wealth of cloud classroom, cloud courseware, and other course resources for everyone to share, learn from each other, and truly achieve mutual aid and mutual learning in education, cooperation, and win-win. The way of class has also changed a lot. Some platforms can realize the same class in different places around the world. Starting from the original intention, selflessly conveying the infinite power of knowledge to others, it reflects the respect for knowledge to the greatest extent and once again proves that knowledge has no boundaries and learning has no framework. The way students practice has also changed. Students can use mobile phones or tablets to practice online, and teachers can get feedback in time [16]. Teacher evaluation has also been greatly changed. For example, some software can easily evaluate and provide feedback regarding the situation of students. Examination methods have also changed. For example, with some answering software, teachers can use the software to automatically collect statistics on students' performance after students have completed them and provide fast and accurate data for teachers to analyze test papers and quality after the exam.

The integration of artificial intelligence technology into the smart teaching design into the classroom is not only an update of teaching methods and technology, but also an enrichment of knowledge and a transformation of teaching concepts. The development of smart teaching from the three-dimensional dimensions of time, space, and equality education provides both for top students. The broader space for progress and the precise support of intelligence have realized that, in all stages of talent training, in different situations, the most efficient and reasonable methods are used to train future highly intelligent talents. The deep integration of artificial intelligence technology and smart teaching design can effectively make up for the shortcomings of traditional education, focusing on cultivating students' abilities, improving students' information literacy, meeting students' individualized learning needs, and achieving the goals of smart education [17].

2. Artificial Intelligence Technology and Intelligent Teaching

2.1. Artificial Intelligence. Artificial intelligence itself is an interdisciplinary subject that simulates human abilities and intelligent behaviors. It has a wide range of fields, including mathematics, linguistics, psychology, brain science, and philosophy [18]. Artificial intelligence technology is the core technology of information technology in the new era. It mainly uses computers to imitate human thinking and some intelligent behaviors, such as search, reasoning, memory, speech recognition, knowledge expression, and processing of fuzzy information, so that it can behave like humans, as well as advanced intelligence and thinking to achieve higher-level computer applications. It is an extension of human's existing ability and has high intelligent technology beyond the scope of manpower. Since entering the twenty-first century, artificial intelligence technology has made great progress in big

data processing, algorithm, and deep learning and solved many challenging problems such as reasoning, speech recognition, image recognition, natural language processing, perception, and moving and manipulating objects [19]. At present, relevant artificial intelligence technologies include machine learning, deep learning, natural language processing, artificial intelligence algorithm, inference engine, learning calculation, image recognition, and other technologies [20]. With the strength of our country and the progress of science and technology, artificial intelligence technology has also developed rapidly. Today, it has been widely used in various important fields, such as transportation, logistics, finance, communication, medical treatment, education, and even into families and individuals. It is closely related to the lives of ordinary people, such as mobile phone voice, eye iris and face recognition, and fingerprint recognition. It has formed a series of rich industrial fields such as new forms and models, and education is no exception, which has brought revolutionary influence and endogenous driving force to the society. With the help of the Internet and the high development of science and technology, artificial intelligence technology has the advantages of repeatability, digitization, stylization, accuracy, and stability beyond human ability [21–23]. Only human unique consciousness and high-level thinking activities are realized through search, reasoning, induction, and association. Applying the integration of artificial intelligence technology and mobile 5G to the field of education, giving advanced power and energy to educational development and classroom reform, and improving some existing technical problems in current education, plays a very important role in promoting educational reform.

2.2. Intelligent Music Teaching. At present, the academic community has a variety of understandings on wisdom Teaching: Qian Xuesen, a famous Chinese scientist, from the perspective of system science, proposed to use Dacheng wisdom teaching to cultivate high-end innovative talents, eliminate the differences between various science and technology, integrate science and art, and integrate natural science and philosophy and social science, so as to achieve a large-span analogy and complete innovation. Professor Zhu Zhiting believes that intelligent teaching is to use various intelligent technologies to optimize the learning environment, let teachers and students jointly display novel teaching methods, and provide students with new and simple learning methods, so as to obtain efficient learning results and cultivate students into quick thinking, straight and intelligent talents. Pang Jingwen, a domestic researcher, believes that intelligent teaching is to use the intelligent teaching design model to complete the teaching goal of cultivating students' wisdom through pleasant and personalized classroom teaching in the environment of artificial intelligence technology. It is an intelligence based education to cultivate students into intelligent talents. Some scholars believe that intelligent teaching is to set up all links of intelligent learning teaching with the support of a new generation of information technology such as artificial intelligence, with the

goal of students' intelligent learning and development. That is, under the intelligent environment such as artificial intelligence, teachers use various new generation information technologies and a variety of teaching resources to carry out teaching activities, aiming at stimulating teachers' teaching wit, improving teachers' professional technology, and cultivating intelligent talents. It has the basic characteristics of activity, efficiency, sharing, and interaction, so as to further improve the students' laziness and laziness in traditional classroom teaching negative and other phenomena [24]. Intelligent teaching is not only the informatization and intellectualization of educational infrastructure, but also the transformation and upgrading of educational ideas and methods, from focusing on the construction of "things" to meeting the diversified needs and services of "people." Only by focusing on students, tapping students' potential, awakening students' self-worth and enlightening students' wisdom, can we calmly deal with the challenges brought by the era of artificial intelligence technology.

2.3. Instructional Design. In the 1950s and 1960s, the systematic method of system science (including system theory, information theory, and cybernetics, also known as the "old three theories") was applied to the field of educational technology for the first time, the new theory of "instructional design" was created, and the "old three theories" had a far-reaching impact on instructional design. Now it is generally believed that teaching design is to analyze and plan the teaching objectives, teaching difficulties, teaching process, student exercises, summary and evaluation, and other elements according to the provisions of curriculum standards and students' characteristics, make an overall and detailed plan for a class, design reasonable teaching links, and complete a detailed and operable teaching plan and complete the teaching task scientifically according to the teaching plan. According to different elements in the teaching process, classroom teaching can be divided into three categories: classroom teaching with "teacher teaching" as the main body, classroom teaching with "student learning" as the main body, and classroom teaching with "resources" as the main body.

2.4. Intelligent Music Teaching Design. In today's intelligent education environment, students' access to information has greatly increased, the traditional music classroom teaching design has been difficult to meet the development needs of students, students have no passion for backward and monotonous teaching media, and students' learning interest is not high. The research and promotion of intelligent teaching design model are particularly urgent and important. "Intelligent teaching design" is an intelligent and efficient teaching guidance scheme applied in the whole process before, during and after class based on the constructivist theory and around the student-oriented central concept and supported by a new generation of information technology such as mobile Internet, Internet of things, big data, cloud computing, and artificial intelligence technology. Intelligent instructional design is the deep integration of artificial

intelligence technology and teaching, pays attention to the mutual penetration of “teaching” and “learning,” plans classroom elements such as teaching resources, problem tasks, teaching links, and teaching hands, and forms specific teaching cases. In the intelligent instructional design model, there should be the application link design of intelligent technology and sufficient resource preparation to facilitate students’ personalized learning and open learning; we should also predict the learning situation and students’ psychological development provided by big data and design a variety of emergency plans for temporary adjustment in the teaching process. When designing intelligent teaching, teachers should carefully design teaching situations in combination with students’ own basic situation, students’ social living environment, and cognitive development characteristics, so as to cultivate students’ intelligent brain and stimulate students’ learning enthusiasm, resulting in “I want to learn and I love learning.”

3. Artificial Intelligence Technology Aided Intelligent Music Teaching Design

3.1. Design Conditions. Intelligent teaching requires music teachers to pay more attention to cultivating students’ wisdom generation and practical ability while practicing the traditional three-dimensional goal. “Smart classroom” is to integrate information technology and network technology into classroom teaching, so that students and teachers can give full play to their enthusiasm and initiative and educate people in an all-round and systematic way. According to the teaching characteristics of each class, teachers should design specific learning objectives, set up teaching situations that students are interested in, provide students with a vivid and interesting virtual environment, encourage students to practice, and properly integrate the teaching objectives into each learning link of intelligent teaching. The ultimate goal of wisdom classroom is to promote the generation of students’ wisdom, and wisdom is a comprehensive and multidimensional goal, integrating knowledge, ability, emotion, and will. The important mission of education in the “Internet+” era is to cultivate intelligent talents.

The traditional classroom environment is mainly composed of teachers and students, blackboard, and chalk. “Wisdom classroom” is to integrate information technology and network technology into classroom teaching. This study mainly uses Shivo whiteboard, Shivo easy classroom, and Shivo class optimization masters to build a powerful interactive teaching platform, which takes multimedia interactive whiteboard tools as the application core, intelligent teaching under the support of the Internet: the massive resources and rich teaching tools of the electronic whiteboard, as well as infrared sensing technology and multi-touch, intelligent recognition of gesture actions, can enlarge, shrink, and erase the whiteboard content, make the interaction between teachers and students more smooth, and make the classroom more interesting. Easy classroom intelligently pushes learning materials, which facilitates the interaction between teachers and students. It summarizes and generates individual evaluation data for various teaching

links such as real time answer and selective answer. Teachers can reasonably group students according to their actual learning situation to realize hierarchical teaching. The class optimization master makes the class management easier, evaluates in an all-round way, sends comments in real time, makes the classroom performance clear at a glance, and stimulates students’ competitiveness. Students’ terminal tablet realizes paperless learning and greatly improves learning efficiency. Multimedia, multiscreen display and other aids make the smart classroom more interesting. Intelligent learning environment creates more suitable learning conditions for students and provides effective support for students’ independent construction and learning of knowledge [25, 26]. Wireless network coverage, teacher-student interaction system, and other equipment enable teachers and students to easily obtain teaching resources and make teaching achievements more efficient.

3.2. Design Elements. “Teaching framework” refers to music teachers’ comparative learning based on the previous teaching design and the current intelligent teaching before teaching design, and cleaning up the elements of the teaching process composed of intelligent classroom environment, teaching objectives, teaching methods, and teaching evaluation, so as to help teachers carry out teaching design in an orderly manner. Therefore, the teaching framework is the train of thought preparation for teachers to carry out intelligent teaching design in the intelligent teaching environment, the preliminary preparation for the perfect implementation of intelligent teaching, and the overall planning for the whole process of intelligent teaching before, during and after class. It includes six design elements: getting familiar with the intelligent environment, creating teaching objectives, obtaining teaching resources, conceiving teaching methods, presupposing teaching situations, and predicting learning results. They are carried out from front to back to complete the whole teaching process. This detail is shown in Figure 1.

Familiar with the smart environment, the smart environment is the smart classroom, which is composed of mobile 5G networks, PCs, electronic whiteboards, cloud classrooms, and artificial intelligence education products. Teachers use these new generation technology products to automatically collect and analyze students’ learning conditions and environmental characteristics. Integrate analysis, automatically evaluate learning effects, automatically identify students’ learning needs, and formulate personalized learning plans and push resources. Intelligent classroom is not a simple accumulation of information technology products. When choosing to use it, we should take into account the students’ individual chemical situation and the actual needs of teaching links, be familiar with and flexibly use new technologies, effectively apply them to teaching links, and realize technical empowerment for intelligent teaching.

3.2.1. Create Teaching Objectives. The presupposition of intelligent classroom teaching objectives should not only meet the three-dimensional objectives proposed by the new

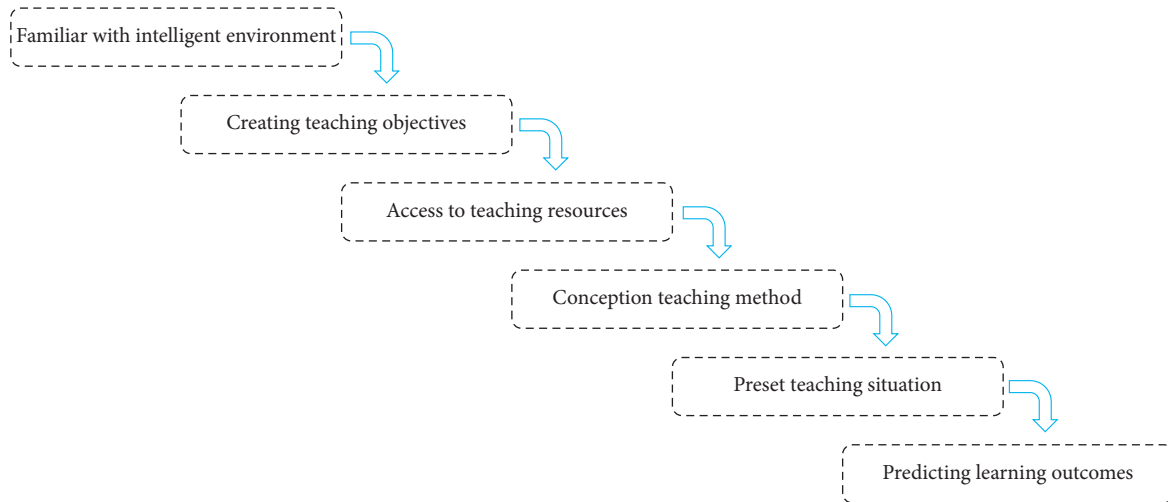


FIGURE 1: Design elements of intelligent teaching architecture.

curriculum reform, namely, knowledge and skills, process, and methods, emotional attitudes, and values, but also pay attention to cultivating students' wisdom generation and practical ability. The ultimate goal of intelligent teaching is to promote the generation of students' wisdom through intelligent classroom teaching and cultivate students into intelligent talents.

3.2.2. Access to Teaching Resources. The resources of the Internet are massive. Teachers should make full use of the intelligent cloud class to acquire effective resources through terminal devices, or provide students with ways and paths to acquire resources, and can access the resource library at any time. The cloud classroom can also automatically push resources through big data analysis, so that students can take the initiative to get information, scientifically collate information and process information. Explore in a cooperative way to effectively improve students' ability of intelligent learning and achieve the realization of teaching objectives. The characteristics of each discipline require teachers to collect relevant materials of the discipline as much as possible, so as to make it consistent with the reality of students' life and the characteristics of students' age development, mobilize students' enthusiasm for active participation, and learn independently. Rich network resources provide students with learning content far beyond textbooks.

3.2.3. Conceive Teaching Methods. The student-oriented teaching concept should be reflected in the link of wisdom teaching. According to the requirements of the realization of teaching objectives, teachers should conceive effective teaching methods. The teaching methods of wisdom teaching mainly include independent inquiry, task driven and cooperative discussion. Teachers should create a situation for students to perceive problems, carry out learning according to problem tasks, guide students to actively acquire knowledge, let students actively construct learning methods such as

practice, exploration, and application, verify the learning process with the answers to problem tasks, and promote the generation of students' wisdom.

3.2.4. Preset Teaching Situation. In the smart classroom environment, teachers create real and interesting situational themes with the help of information technology resources and equipment according to the needs of teaching content, so as to inspire students' thinking and cultivate students' problem-solving ability. Appropriate teaching situation can arouse students' interest in learning and help improve teaching effect. Intelligent teaching requires teachers not only to skillfully operate intelligent teaching software and hardware and various advanced information technologies, but also to preset the automatic generation, diagnosis, and analysis of big data in the teaching process, as well as the difficulties that students may encounter in the learning process and the possible conditions in the interactive process, analyze and select the appropriate artificial intelligence auxiliary system, and envisage the solution strategy in advance. Through the presupposition of the situation, the whole teaching process is under the control of teachers at any time and carried out in an orderly manner.

3.2.5. Predict Learning Outcomes. Teachers release test questions to students at any time according to students' learning. After students answer questions, the system automatically calculates scores and corrects errors, then displays and analyzes them according to the feedback of big data, puts forward suggestions and guidance to students in time, analyzes students' error prone and weak links, and continues to automatically push the student's error prone question type. Systematically analyze the answers of each student, sort out the overall learning level of the class, and predict the confusion and error prone questions that students may have. Teachers can collect these data and carry out targeted teaching.

3.3. *System Design.* With the development of music education and technology, the traditional classroom teaching design process cannot meet the requirements of intelligent teaching. The traditional classroom teaching process usually adopts the “4 + 3” model, that is, the four operation links of teachers (lesson preparation, teaching, assignment, and evaluation) and the three learning links of students (preview, listening, and completing homework). In the classroom process, the classroom communication between teachers “teaching” and students “learning” is relatively single, lacking in-depth interaction between teachers, students, and students. The intelligent teaching design of this study is several important intelligent classroom solutions and intelligent teaching practice in the stage of comprehensive basic education. Combined with the intelligent teaching experimental results in the intelligent education demonstration area, based on the teaching concept of “learning first,” and according to the use of artificial intelligence technology and information technology, the teaching process is divided into three modules and seven links of “before class, during class, and after class.” The teaching cycle of “7 + 7” sustainable development has been formed. In smart teaching, teachers’ “teaching” has become seven steps (resource release, goal setting, sensory introduction, task distribution, guidance and explanation, detection and evaluation, and extension and push), and students’ “learning” has also become seven steps (independent preview, learning expectation, situational experience, cooperative learning, onstage explanation, consolidation of quiz, and breakthrough points), and the interaction between teachers and students is more vivid and rich.

From the “4 + 3 model” of traditional classroom teaching process structure to the “7 + 7” model of intelligent teaching, it fully reflects the characteristics of intelligent teaching supported by artificial intelligence technology. Therefore, the ideal intelligent teaching process structure is the “7 + 7” model, which focuses on “student-centered,” pays attention to the mutual penetration and integration of “teaching” and “learning,” no longer constructs the teaching process by taking “teaching” and “learning” as separate elements, and is a complete large cycle model based on “before, during, and after class.” It is a new model of using artificial intelligence technology to achieve teaching objectives and finally promote the improvement and development of intelligent teaching in practice. The specific steps are shown in Figure 2.

Push resources, autonomous learning. Based on the psychological needs of students’ self-realization based on humanistic learning theory, the electronic whiteboard is used to push preview resources to students before class, such as learning task lists such as Mu class, micro class, learning courseware, and preview test. Driven by psychological needs, students can study independently with the help of smart phones or PC terminals and submit preclass preview. Let students have a sense of expectation for learning and mobilize students’ enthusiasm. Through data feedback, teachers analyze and study students’ preview, so as to select and design effective teaching methods and educational technology.

Analyze the learning situation and clarify the goal. Since the grouping of ability stratification is a simple classification of students according to problem answers and learning conditions, on the basis of this classification, students’ answer data are obtained with the help of easy classroom for learning situation analysis, and prominent cases are extracted for research, so as to clarify the tasks, interactive links, personality push, and technology use in the learning process: means, methods, and other aspects of personality guidance and guidance. The preclass stage of wisdom teaching is a complete learning process. First, teachers check students’ historical achievements and knowledge points through electronic whiteboard and easy classroom to determine teaching objectives. Secondly, students independently complete the preview test questions pushed by teachers and submit them to the platform to form big data for teachers’ analysis. Students can also discuss the problems encountered in the preview process based on the class learning exchange group. Thirdly, according to the feedback of goal presupposition, preview, and test, teachers conduct a comprehensive analysis of students’ learning situation, accurately understand the learning situation information, and formulate an appropriate teaching design scheme to realize teaching based on learning. Teaching materials are unified, but there are various differences between schools, classes, students, and survival. Therefore, learning situation analysis is particularly important and is the basic link of teaching design. For a class (50 people) in a medium development area, the learning level of class students is divided into three levels: excellent students, medium students, and backward students. The hierarchical model of “7 (middle) + 2 (excellent) + 1 (back)” can be introduced to study and judge the learning situation. This simple learning situation classification, combined with the automatically generated learning big data, analyzes the students’ preview situation. It is helpful for teachers to make a basic judgment on students and adopt reasonable teaching strategies and carry out classroom teaching design for all students.

Situational introduction to stimulate interest. As the saying goes, a good beginning is half success, and interest is the best teacher. Teachers put forward questions through the process description of the problem generation, stimulate students’ motivation, interest, and curiosity of independent discovery and cooperative exploration by creating a problem scene, and guide students into an immersive learning state of continuous exploration experience by creating a real environment. In actual teaching, make full use of the playing function of electronic whiteboard for images and videos and the game design function of classroom activities to set up teaching situations, flexibly select adaptation methods, and mobilize classroom atmosphere. Classroom atmosphere is an important psychological condition affecting teaching. How to stimulate students’ learning interest and desire for knowledge at the beginning of class is discussed. Situation introduction is particularly important. According to the teaching objectives, teachers create situations that meet the characteristics of students, set suspense, arouse students’ strong curiosity, and stimulate students’ learning interest and learning initiative. Situational introduction is a direct

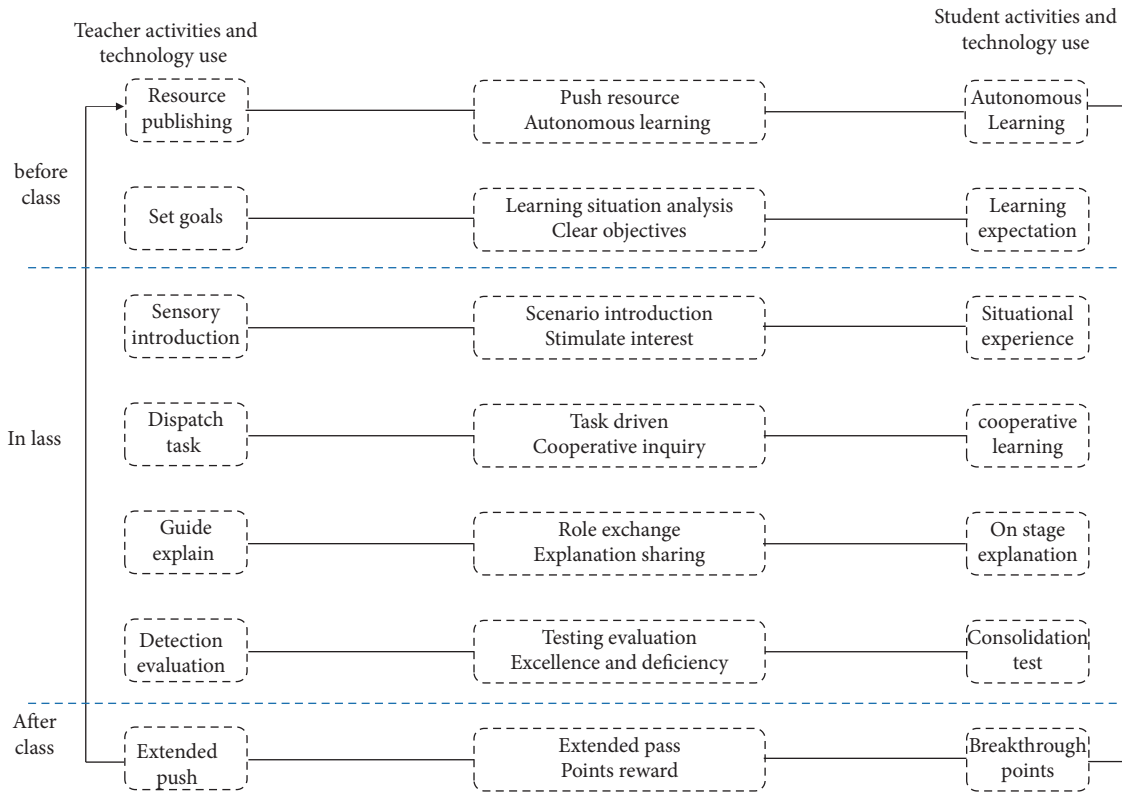


FIGURE 2: “7 + 7” model of intelligent music teaching.

stimulation of senses, which is deeply loved by students. Happy and novel situations can quickly attract students’ attention to teaching. It is a teaching link worthy of use and praise. Situational design should vary according to materials, which requires careful design by teachers. There are the following common situational designs: first, film and television animation situation. We should make full use of multimedia and use animation to show students the situation of the problem. The second is the problem situation. The core of intelligent teaching is to analyze and solve problems. As long as teachers carefully design problems before class, problems from daily life can generally arouse their interest and make students really feel that knowledge is closely related to life. Although situational introduction is only a small part, it can activate the learning atmosphere of the whole classroom and promote students to complete teaching tasks with passion.

Task driven, cooperative exploration. Guided by the distributed cognitive theory, following the principle of “student-oriented,” intelligent teaching establishes a correct view of teaching and teachers and students, emphasizes students’ active learning, cooperative exploration, and interacts among groups to promote students’ independent acquisition of knowledge. In the process of wisdom teaching, teachers should abandon the idea of being eager for success and instant success, always pay attention to students’ learning state, slow down the rhythm of the classroom, create problem situations that help students explore independently, and let students actively participate in learning. The interactive teaching platform integrates

cloud computing, situational awareness, intelligent recording and broadcasting, resource sharing, learning performance prediction, content planning, and other functions. Teachers distribute learning tasks in the form of questions to students’ terminal tablets through electronic whiteboards for students to try to explore. Driven by the goal and task, students conduct cooperative discussion and explore problems through groups in the easy classroom. Teachers should create an inquiry atmosphere as much as possible and introduce learning resources according to the difficulty of learning content. Teachers should create conditions and help for students’ attempt and inquiry and provide intelligent search, intelligent simulation teaching system and intelligent partners through understanding students’ learning situation and according to specific learning tasks and students’ problem-solving needs. AI assistant explains intelligent exercises, guides students to solve problems, and helps students easily master knowledge difficulties, use a variety of intelligent technologies to verify and summarize, and use the favorable environment of intelligent classroom to judge the learning results. In this process, even if students make some mistakes, it is desirable. At least they dare to practice. More importantly, they can cultivate students’ ability of cooperative exploration and intelligent learning.

Exchange roles, explain, and share. Based on the constructivist theory, the cognition that students have generated is not fixed. It follows that students continue to blend with new knowledge in the later learning process. The understanding of new knowledge will be gradually updated and

strengthened with the increase of time and experience, and different students will have different understanding and understanding when learning the same knowledge. Therefore, it is necessary to teach students according to their aptitude and create a personalized learning environment for students. By trying to explore, students have a preliminary understanding of the learning tasks of this class, and some top students have obtained the correct methods and results. At this time, if the new course is explained according to the traditional teachers, and the students passively accept learning, it will weaken the importance and sense of achievement of the students' inquiry process. On the contrary, teachers choose better students to act as teachers. Each student is responsible for teaching the content of a knowledge point or a topic, explaining and demonstrating with an electronic whiteboard, and sharing how to explore the process and methods of learning and acquiring knowledge through the application of a variety of intelligent technologies. The knowledge and methods spoken by peers with their familiar and friendly language and synchronous adaptation rhythm are closer to their age characteristics and more acceptable and understandable. Teachers make timely comments, guide, summarize, and supplement the key and difficult points, pay attention to the learning status of backward students, stimulate students and teachers to ask questions, or carry out online communication and discussion between teachers and students, and students think about each other, exchange ideas and understanding, promote telepathy and thinking consensus, and break through the limitations of time and space of traditional classroom teaching, to make classroom teaching always maintain an active life state, so as to effectively develop and enhance wisdom. According to the interaction of students, teachers should timely provide feedback regarding the results obtained and then summarize and comment on the key, difficult, and doubtful problems, so that students can complete the transfer of knowledge and achieve their goals in practice. Let students play the role of teachers to show and explain onstage. Students are highly motivated. At the same time, they also encourage other students to strive for the opportunity to go on-stage. This learning process has strongly exercised students' knowledge inquiry ability, organization and planning ability, and oral expression ability, which is of great significance to their future growth and truly reflects the intelligent teaching concept with students as the main body and teachers as the leading role.

Test and evaluate, cultivate excellence, and make up for deficiency. Through cooperative exploration, peer explanation and sharing, and teacher guidance, students have a preliminary understanding of the knowledge of this class. In order to consolidate and extend the classroom learning effect, according to the students' learning rules, teachers should provide students with the opportunity to consolidate knowledge and complete the transfer in real time and conduct in class quiz in time. From the easy classroom test paper system, through automatic questions, manual questions, and self-questions, each student is matched with the exercises and tests of "tip toe is enough," and the

task list is intelligently pushed to students, so that students at different levels can get the most suitable test content, promoting students to complete actively and complete the understanding and digestion of knowledge in the shortest time. Students complete and submit tasks through the intelligent terminal. The system automatically calculates the total score and analyzes the test paper through manual or automatic marking by the teacher. The teacher makes targeted explanation and diversified evaluation according to the results of big data, uses the class optimization master to reward students with medals or points, updates the ranking of the honor list in real time, and carries out student-centered teacher-student interaction, Encourage top students to help poor students and let them play the role of "leader"; pay attention to secondary students and try to give full play to their learning potential; help backward students more, enhance their confidence in learning, and strive to minimize polarization and improve classroom teaching efficiency. Therefore, the dynamic evaluation data on students' learning effect can be recorded and analyzed through learning history data, data mining, and in-depth analysis, and intervene according to the data analysis results, so as to evaluate the learning process, predict future performance, and find potential problems. The intelligent auxiliary system dynamically monitors students. Every time students complete a learning task, the system will continuously identify and correct the individual knowledge ability value and the overall learning ability value of students, locate the loopholes of students' knowledge points, and check and make up for deficiencies, and the personalized chemistry learning plan determined for students will become more and more effective, providing a basis for the adjustment and improvement of teaching design.

Extend to break through the hurdle and earn points. It is students' nature to love games. The breakthrough mechanism of games is introduced into intelligent teaching. Through the setting of breakthrough level, students' desire for challenge is stimulated. After breakthrough, students experience the joy of reward and the feeling of success, so that students can place their learning in play, which not only meets students' psychological needs and emotional experience, but also helps cultivate students' learning interest and develop their potential. Class optimization Masters can set up a unique learning account for each student. After class, teachers face all students, push 1-2 time limited breakthrough questions to students through easy class, and students submit them after answering online. Teachers can set task points reward. Students can get corresponding points after submitting tasks. Teachers can get corresponding points for each unit or conduct periodic summary and reward every learning month. This periodic time should not be too long; otherwise, it will affect the stability of students' attention, but it should be continued to keep students interested in learning for a long time. The game encourages students to actively participate and develop and stimulates students' learning interest and motivation, and students' knowledge has also been consolidated and improved.

4. Conclusion

This paper discusses the design mode of intelligent music teaching from the aspect of music classroom teaching supported by artificial intelligence technology. This paper discusses the current research background of intelligent music teaching design, analyzes the research status of artificial intelligence technology and intelligent music teaching design, puts forward the research problems and difficulties, combines the research ideas and methods, and obtains the research value and significance of this paper. This paper defines the related concepts of artificial intelligence technology and intelligent music teaching design, expounds the cognitive theory and learning theory, and lays a theoretical foundation for intelligent music teaching design. This paper analyzes the six characteristics of intelligent music teaching design realized by artificial intelligence technology, which provides conditions for intelligent music teaching design; This paper summarizes the basic principle of intelligent music teaching design and expounds the important links of intelligent music teaching design. This paper analyzes the feasible conditions of intelligent music teaching and lists the design elements of intelligent music teaching framework. This paper designs the intelligent music teaching design model and process supported by artificial intelligence technology, so as to realize the continuous improvement and development of intelligent music teaching on the basis of the virtuous cycle before, during, and after class.

Data Availability

The dataset can be accessed upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest.

Acknowledgments

The authors thank Jiangxi Province Department of Education Science and Technology Project, Based on b/Structure University Music Distance Learning System Development and application research (no. GJJ209311).

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