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Exploration on the Construction of Smart Classroom of Mental Health Educational Curriculum of University in Big Data Era

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Abstract: The mental health educational curriculum in universities emphasizes the organic combination of theoretical knowledge and practice of the subject. In order to cultivate students' abilities such as independent thinking, experimental design and self-learning, it is crucial to actively apply Smart Classroom to the teaching of mental health educational curriculum in universities. Based on the requirements of Big Data Era, it is necessary to carry out a scientific review of the current teaching situation of mental health educational curriculum in universities. Besides, the teaching should fully take the characteristics of Big Data background into consideration, and actively carry out the practice and exploration of Smart Classroom teaching mode, in order to promote the personalized, in-depth, accurate and intelligent development of the curriculum.

Keywords: Big data; Smart classroom; Mental health education

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1. Introduction

At present, China makes great efforts to promote the reform of higher education system and the innovation of teaching methods, and focuses on the full integration of the Big Data in "Internet+" era and artificial intelligence into the teaching activities of higher education. This has become the mainstream trend of higher education reform promoted by the development of the times. In the Action Plan for the revitalization of teacher education (2018–2022) issued by the Ministry of Education, it is clearly stated that the education should actively promote the transformation of teaching methods characterized by autonomy, cooperation and inquiry, and make full use of different new technologies such as Cloud Computing, Big Data, Virtual Reality and Artificial Intelligence, aiming to promote the construction and application of teaching service platform for teachers' education information. Based on technologies and platforms such as Big Data, cloud computing, smart devices and the internet, Smart Classroom is a kind of teaching mode that subject knowledge will be vividly displayed to students with the help

of efficient and intuitive multimedia teaching system [1]. It is important to fully rely on the Age of Big Data, try to closely combine the advanced artificial intelligence with the teaching of the curriculum, explore the construction path of Smart Classroom, and fully realize the individuation, deepening, precision and intelligentization of the curriculum. This is not only a strong call of the times but also inevitable trend of the innovation of the teaching of psychological health educational curriculum in China.

2. Review of the current teaching situation of mental health education in university based on the requirement of Big Data era

Literally, Big Data refers to the collection of massive data. According to the existing research, it should have basic characteristics as follows: firstly, the number of information data is extremely huge since Big Data is a collection of all kinds of d information; secondly, the type of information data is various because Big Data is a kind of information resource produced by the integration and concentration of many kinds of information; thirdly, the transmission speed of information data is extremely fast due to the development of information technology; fourthly, the content of information data is changing rapidly; fifthly, the processing and filtering of information data is more complicated. Due to the large number of data sources and types, it is necessary to collate useful data through specific technologies in order to make effective use of it.

The curriculum of mental health is a compulsory and important basic for current college students. On the whole, in recent years during the teaching there are the following problems: firstly, the curriculum mainly focuses on the basic theoretical knowledge of mental health in the class, which lacks the training of practical abilities like students' self-design of psychological experiment and scientifically-solving of psychological problems and crisis intervention; secondly, its content is out of line with the theoretical courses and cannot keep up with the rhythm of the frontier research of psychology, which will do a harm to the students' systematic mastery of the more advanced theoretical knowledge, experimental practice and scientific research methods; thirdly, its teaching evaluation overemphasizes the academic examination results of the subject, neglecting the evaluation and examination of students' independent design of psychological experiments and practical operation skills, as well as their ability of scientific research. The curriculum should not only emphasize the basic theory, but also the ability to design experiments and practice independently. In other words, teachers should pay attention to both the theory and practice of to carry out teaching activities.

Based on this, it is very necessary to carry on the practical exploration of Smart Classroom teaching mode in the teaching practice. Smart Classroom is characterized by the digitalization of teaching decision-making, the immediacy of evaluation feedback, the three-dimensional interaction between teachers and students and the intelligentization of resource push, which will effectively stimulate students' self-learning awareness and enhance their self-learning ability [2]. The comprehensive application of "Smart Classroom" in both theoretical and practical situations can not only promote the transformation from "knowledge classroom" to "Smart Classroom" but also help to liberate students from passive knowledge acquisition in the offline classroom, making students' learning change from knowledge acquisition to problem solving. In addition, during the process, teachers constantly put the standard of scientific research and spirit through every teaching stage, which enables students to solidify the norms and spirit of scientific research in wisdom, internalize it in heart and externalize it in practice [3]. This is very important to improve the students' ability of independent study, independent thinking, independent experiment design, experimental-program making and experiment carrying out.

3. The necessity and feasibility of smart classroom construction of university mental health education in Big Data era

3.1. The construction of mental health education Smart Classroom in colleges is an urgent call for classroom teaching in the Big Data era

3.1.1 Mental health education Smart Classroom is more open and interactive

Compared with the traditional one of mental health education course, the teaching mode based on Big Data Technology and Internet Information Technology is more open and interactive. For one thing, the interaction between teachers and students in universities is greatly enhanced under this model, which can fully realize real-time communication. Because it is not too limited by time and space, teachers can use a variety of media to carry out teaching, and students can use micro-class, network platform, micro-blog, Wechat and other ways to learn. And for another, this model is more open. Traditional education pays more attention to the study of book knowledge, while under the mode of smart classroom teaching, teachers can provide students with abundant knowledge and information of mental health education at any time, and besides students can also consult all kinds of relevant knowledge independently, fully meet students' individual learning needs, and effectively improve the overall teaching quality of mental health education [4].

3.1.2 The construction of a mental health education Smart Classroom can effectively promote the continuous deepening of classroom teaching reform

After its appearance, the mental health education Smart Classroom is gradually favored by more and more teachers and students. It can help teachers to constantly sum up the teaching experience in the teaching process and constantly improve the theoretical basis, so as to better carry out the teaching reform. For example, when doing the course, we can show some classic cases to the students through multimedia equipment, and guide them to learn to carry out self-psychological adjustment in time when there is psychological pressure, or take the initiative to contact the teacher to talk about their psychological confusion. With the help of this teaching mode, we can better create a space for two-way communication and interaction between teachers and students, especially by building a diversified online teaching platform, which can promote effective interaction between both sides and make the development of teaching activities smoother and efficient. At the same time, with the help of Big Data to carry out accurate analysis of teaching data, teachers can understand students' psychological needs and state of mind in time, effectively formulate personalized solutions [5]. As a result, students' psychological needs can be fully met, and students are ensured to face the present with an optimistic and cheerful attitude to meet the challenges of the future society.

3.1.3 The construction of mental health education Smart Classroom can promote the teaching evaluation system to be more scientific and perfect

With this mode, the teacher can carry on not only the careful design to the teaching details, but also the supervision and the record to the entire teaching process, analysis and statistics of the whole teaching process of the data indicators. After each stage of teaching, the recorded teaching data can reflect the whole teaching process truthfully, comprehensively and objectively. According to these data, teachers can analyze their own strengths and weaknesses. Therefore, the teaching model can promote the teaching process evaluation system to be more scientific and integrated.

3.2 The necessity of Smart Classroom construction of university mental health education curriculum in Big Data era

The Smart Classroom is a new teaching model that has emerged in the early 21st century with the active advancement of new curriculum reform and liberal education. It makes full use of the communication network, computer technology and scientific management concepts in schools, highly integrated with in-class information resources related to learning, life services and management, and systematically combines with various digital teaching resources, in order to achieve unified access control, resource management and user management.

Professor Zhu Zhiting believes that the Smart Classroom includes the basic frame systems such as environment, teaching methods, and personnel training [6]. Its basic aim is to implement the teaching and learning of wisdom and promote the development of learners' wisdom based on the intelligent teaching environment. As a new teaching mode based on modern information technology, this mode attaches great importance to the expansion of various teaching resources and learning facilities, greatly expands the teaching resources of the subject, and makes the whole teaching process more targeted and effectively helping students to complete personalized learning. Besides, teachers can also carry on an online comprehensive understanding to students' study conditions. Compared with traditional classroom teaching, this mode is more interesting and open, and can further integrate the teaching content and resources. Education is filled with wisdom through intelligent means, so as to stimulate the enthusiasm of students to participate in the study of the courses. At the same time, with the help of a scientific design rich in personalized, intelligent, and situational mental health education learning environment, teachers can transfer the focus from the knowledge to the development of wisdom and skills, which is helpful to improve students' learning efficiency and quality and effectively realize the individualized development of students. In addition, this mode can make the teaching evaluation timelier and more scientific, and make students and teachers discover their own defects in time, so as to realize the optimization of relevant teaching activities [7]. The introduction of an AR interactive psychological sand table in smart classrooms combines the advantages of AR technology and psychological sand table. Through AR technology, students can simulate real-life scenarios in the virtual world, better understand human behavior and psychological activities; the psychological sand table can help students explore their inner world, enhance-confidence and self-awareness. For example, the system projects a virtual mountain and sea scene, students can push the mountains and seas, create freely, interact with birds, marine life, move mountains to fill the sea, trigger volcanoes, etc., to achieve inner relaxation in fun interaction, and teachers can also develop personalized plans according to student performance and needs.

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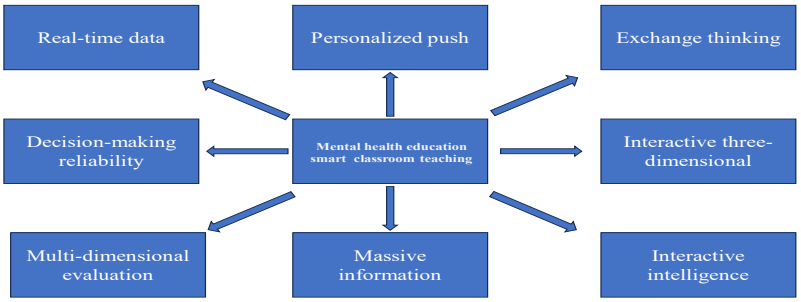

Figure 1. Advantages of mental health education Smart Classroom.

4. The practice and exploration of smart classroom teaching in university mental health education course in Big Data era

At present, as for the development of higher education, it has become an important direction to reform the teaching by means of internet information and Big Data technology. With the help of Big Data analysis technology, during the design process, teachers should fully consider the teaching needs of three stages of mental health education before class, during class and after class, it includes pre-class preparation and research, self-study guidance, resource sharing and interaction among students during class, and online testing and communication after class, do well in the detailed design such as learner analysis, teaching goal setting, teaching strategy adjustment, teaching evaluation and judgment, fully stimulate students' learning initiative and highlight students' main status, and to achieve truly innovative development. Combined with the practice and exploration of the mode in our university, there are the following five aspects for universities to construct the mode. The basic links of the mode is shown in **Table 1**.

Table 1. The basic links of Smart Classroom teaching

Basic links	Teaching tasks
Preparation before class	Analysis of learning situation Pre-teaching tests Teaching design Resource Push
Implementation Link in the class	Situation Creation Cooperative inquiry Display and share Assessment feedback Multiple evaluations
After-school promotion	Post-teaching tests Knowledge push Reflect on learning Expand and upgrade

4.1. Reasonable selection of smart classroom teaching platform to do a good job before the introduction of preparatory work

In order to give full play to the advantages of the mode, teachers should first choose the cloud teaching platform more suitable for students to study, which can effectively improve the teaching efficiency. With the help of the current popular cloud teaching platform, teachers and students can use mobile phones, tablets and other tools for communication and interaction, fully realize the online communication and online teaching of high

integration. Besides, teachers can upload and download the course materials and information and carry out the daily teaching management. At the same time, each link for students to understand knowledge needs teachers to carry on scientific guidance. Under this mode, teachers should do a good job of leading preparation before class according to the needs of teaching objectives. In practice, teachers can use Big Data to analyze students' basic characteristics, teaching objectives and other contents, and push relevant learning contents to students before class[8]. After that, teachers can use the school's smart classroom platform, smart phones, computers and so on to preview the lessons before class. Teachers can also make PowerPoint slides or short videos of teaching contents and send them to students to watch and learn before class, in order to help them fully understand the learning content before class. Teachers can also design a number of issues about the course, and let students study and communicate through the platform, thus contributing to more professional knowledge accumulation. Through their own careful access to relevant information, students can preview and understand the knowledge to be learned, which can lay a solid foundation for later learning.

4.2. Do a good design of smart classroom cultivation objectives and teaching models for mental health education curriculum

It should be said that the main training goal of mental health education course is to train students' ability of thinking, putting forward research problems and solving practical problems. Therefore, teachers should be good at guiding students to systematically study and master the contents of mental health education curriculum from both theoretical knowledge and practical operation, according to the relevant content, scientific and effective psychological experiments to design or solve practical psychological problems. At the same time, teachers should also be based on the overall needs of the society for the training of psychology professionals, the training objectives of mental health education courses and the actual learning situation of students, the knowledge goal, ability goal and quality goal of each unit are clear. According to the actual situation of mental health education course, teachers can change some of the theoretical and experimental classes into online self-learning. In the teaching process, the teacher can let the student study the related theory and the practice operation knowledge independently through the on-line video resource, guides the student to use the psychology related theory knowledge to raise the research question, under the guidance of the teacher, the students can independently complete the psychological experiment design, the psychological experiment programming and the concrete implementation of the relevant operating procedures. In the course of teaching practice, especially in the initial stage of teaching the theory course of mental health education, the teachers can introduce or design a large number of educational practice cases in combination with case teaching, to help students really understand and master the basic theoretical content.

At the same time, teachers should introduce or design cases to deepen students' understanding and mastery of mental health education theory, which will help students in the next stage of online learning, independently acquire the relevant theoretical knowledge in the field of practice and operation of mental health education. For example, in the special content of "Self-awareness", we help students systematically understand the relevant knowledge of self-awareness, such as MBTI personality test by combining online teaching resources. At the same time, we design activities such as "My Self-portrait", "Guess Who TA Is", "Growth Steering", "Wearing a Tall Hat" to help students fully and objectively understand themselves. We also follow up and urge students to start with small things in their daily life through such as "How to Break Through Self" to help students learn to persist in self-breakthrough and improve their self-awareness level. In the evaluation of teaching effect, the construction of mental health education smart classroom can track the whole process of students' learning, the data of real-

time test, after-class test and follow-up feedback in online classroom are integrated into the evaluation system of mental health education curriculum to realize real-time and dynamic feedback of evaluation information, reconstruct the formative curriculum evaluation system of mental health education. The design of the training objectives of the smart classroom for mental health education courses can be carried out from the following four aspects, as shown in **Table 2**.

Table 2. Design of teaching objectives for mental health education courses

Cognitive objectives	Emotional attitude objectives	Behavioral objectives	Technology fusion objectives
Self-awareness expansion Cognition of psychological laws Technical tool cognition	Emotional regulation ability Cooperation and empathy consciousness Growth mindset shaping	Problem-solving skills Social interaction skills Self-help and help-seeking behavior	Technological empowerment Immersive experience Resource link

4.3. To do a good job in the design of smart classroom teaching plan and teaching in the course of mental health education

Teaching in class is the main content of teachers' teaching work. After entering the stage of classroom learning, teachers can change the traditional teaching mode, make use of mental health education Smart Classroom and have good interactions with students, so as to further enhance the efficiency of classroom teaching [9]. Students have become the main body of study under the mode of Smart Classroom. Teachers can use various advanced techniques based on mental health education to provide professional guidance for students. For example, the content of the current lecture can be transmitted to the student's terminal and three-dimensional display, in order to help students understand the learning content. At the same time, to reduce the difficulty of learning, teachers can create an immersive situation, and guide students into the situation through teaching equipment and methods. Teachers can discuss the learning content or set up the application scene of the relevant professional courses, and then lead the students to apply the professional knowledge to solve the problems by role-playing. Generally speaking, the teaching content system of mental health education includes the basic theory and the practice. The content of the theory course, including the general principle, basic thought, basic method, and psychological experiment design of mental health education, can be arranged offline. The practical application, including the practical operation and specific application of mental health education, can be carried out online and offline in two ways. In practice, we mainly let students discuss various concrete problems in the field of mental health education, guide students to put forward problems, solve problems, and come up with corresponding suggestions. We should pay attention to combining the current research hot spots of mental health education and keep up with the pace of mental health education research. For example, in smart classroom education practice, we can try to write the corresponding psychological experimental program on E-Prime software, which is very operable and implementable. The main purpose of the offline experiment course is to let students work out the corresponding experiment program and implement the experiment operation according to the experiment design plan. In this way, students can master the professional knowledge of mental health education systematically, improve their practical application ability, and enhance innovative thinking. Combined with the characteristics of the mental health education curriculum, a three-segment mental health education curriculum smart classroom teaching design method can be used to carry out [10]. The basic elements of the model are shown in **Table 3**.

Table 3. Three-part mental health education course teaching design in smart classrooms

Before class	In-class	After class
Precise research	Interactive experience	Follow-up tutoring
Resource guidance	Data driven	Home-school synergy

4.4. Do a good job of mental health education smart classroom courses online learning resources database design to consolidate the relevant knowledge

The online learning resource database of mental health education course should include three parts: teaching videos, course questions database and other learning materials. Teachers can record some micro-lessons about mental health education whose contents should focus on the content of teaching materials and expand on this basis. At the same time, teachers should set up questions database according to the teaching content, so as to supervise students' study and monitor their effect. In addition, teachers should widely collect and upload e-books, video resources, relevant research literature and cutting-edge information related to mental health education courses to the learning resource bank, so that students can supplement or expand their own learning content [11]. Smart classrooms can use sensors, cameras and other equipment to monitor and analyze students' expressions, behaviors and movements in real time. For example, students abnormal performance in class, such as looking down for a long time, staring vacantly, frequent small movements, etc., may indicate their poor psychological state. The can mark and warn these abnormal behaviors according to the predefined rules, and discover the possible psychological crisis of students in time.

After-class consolidation is the continuation and supplement of mental health education smart classroom teaching, because it can help students effectively strengthen the understanding and memory of mental health education classroom teaching knowledge. In the context of Big Data, teachers can effectively use Apps or cloud teaching platforms to consolidate students' psychological knowledge. For one thing, teachers can release the key knowledge content on cloud teaching platforms so that students can learn more emphatically after class. After class, teachers can use Smart Classroom to push students to review resources related to the major of mental health education. These resources should follow the development trend of the major at present, so that students can be guided through social surveys or social practice to complete. After completion of the wisdom evaluation of the classroom platform, teachers can give students special guidance based on the evaluation. In this way, students can continue to get opportunities to improve themselves after class. For another thing, teachers can arrange relevant homework topics on the cloud platform, so that students can finish them in their spare time. Through the platform, teachers can track and analyze the students' problem-solving cases, find out the deficiencies in the learning process and provide the basis for the next teaching activities.

4.5 We should attach importance to the integration of ideological and political elements in the smart classroom teaching of mental health education in order to cultivate students' humanistic spirit

According to the integration of ideological and political elements in the smart classroom teaching of mental health education, Big Data technology can make up for the lack of pertinence and effectiveness in the ideological and political education to a certain extent. With the help of the technology, we can effectively record students' learning trajectory, scientific analysis of students' mastery of knowledge, provide students with accurate personalized portraits, and dynamically study the students' ideological trends and their acceptance

of the ideological and political course, so as to realize individualized ideological and political guidance. This is beneficial to solve the problem that students' individual differences cannot be taken into account in large or combined classes of mental health education courses and improve the effect of ideological and political education. In the practice of education, we should conscientiously design the construction of ideological and political education in mental health education courses, and the specific content is shown in **Table 4**.

Table 4. Ideological and political teaching content of mental health courses

Three classrooms	Three permeations	Three main threads
Classroom teaching	learning	cultural confidence
School activities	life	professional ethics
Social practice	work	spirit of cooperation

In the course of mental health education, teachers should emphasize the ethical problems in order to cultivate students' humanistic spirit, emphasize rigorous experimental designs and strict experimental control in order to train students' rational spirit, positive spirit and realistic spirit; guide students to think about the problems and shortcomings of mental health education cases in order to train students' critical and skeptical spirit, guide students to put forward practical and social significance of mental health education research in order to enhance students' sense of social responsibility, cultivate students' spirit of innovation and exploration. At the same time, some smart platforms are installed with a psychological cognitive ability training system. We take the course of "letting eliminate the psychology of jealousy" as an example, teachers can use this system to evaluate and analyze students, fully understand the situation of students' jealousy, and students in a targeted way according to the detailed report obtained, so that students can gradually eliminate the psychology of jealousy and become more open-minded. In addition, in the practice of smart classroom teaching, teachers have more opportunities to adopt interesting and novel ways to make students accept the culture and values without psychological defenses, and to make subtle spiritual changes in the level of ideals and beliefs. Compared with the traditional explicit teaching method, it can more effectively eliminate the students' conflicted psychology in the process of cognitive learning and enhance the effect of ideological and political education in the course of mental health education.

5. Conclusion

To sum up, it is imperative to innovate the mode in the context of the Big Data era. With the help of Big Data and Smart Classroom, students' subjective initiative can be stimulated comprehensively, the benign interaction between teachers and students can be promoted, and the teaching quality and the overall quality of personnel training can be effectively improved, thus promoting the common development of both students and schools and sending more high-quality psychology professionals to the country.

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