Exploration of art education and teaching mode in local normal universities based on the background of big data

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Abstract: With the development of the Internet today, the advent of the era of big data, the gradual emergence of various Internet + models of innovation and entrepreneurship, these changes mean that the traditional modes of art education in colleges and universities have followed a significant change. New teaching technologies and teaching concepts such as open video lesson, visualization teaching and big data creation mode came into being, which have an impact on the traditional teaching mode. Local higher normal colleges and universities are to train local primary and secondary school teachers, timely and effectively adjusted according to the social development training programs to meet the needs of the reform of the middle school curriculum. Based on the big data environment, this article summarizes the Innovative practice of art education both at home and abroad, and puts forward the exploration of the teaching mode of combining "cross-border integration", "project-oriented" teaching and "maker education".

Keywords: art education; local teachers colleges; teaching mode; maker education

1. Introduction

Nowadays, the rapid development of the Internet has prompted the advent of the era of big data. Big data is based on a huge data system and hundreds of millions of data analysis. All kinds of information can be shared on the Internet. Many Internet + models of innovation and entrepreneurship are available. In an all-round way, "mass entrepreneurship and mass innovation" not only become an important strategy for promoting the economic development of the country in the future, but also bring about thinking to the existing education and teaching in colleges and universities. Under the background of big data, teaching and learning in colleges and universities continue to improve the teaching mode through technologies such as computer cloud computing, multimedia visualization teaching, MOOC and micro-class teaching. Big data plays a catalytic role in teaching modes and methods, as well as thinking, which in turn leads to the innovation and transformation of the whole teaching model. The background of big data has more fermented changes in teaching thoughts, teaching evaluation modes, etc. More efficient analysis of big data and cloud computing can help them to obtain more useful and timely information.

The advantages and characteristics of higher normal colleges are teacher education. Higher normal colleges are to train high quality teachers and primary and secondary backbone teachers for primary and secondary schools. The model of talent cultivation should fully reflect the characteristics of teachers. In recent years, with the deepening of economic reforms, the reform of higher education has also been followed to adapt to the development of a market economy and to meet the various needs of social development. As a result, normal colleges and universities in recent years to change the previous single teacher education, but there is a double situation of normal and non-normal education.
Art education in normal colleges and universities has developed rapidly since the beginning of the 21st century, and basically it has been opened in normal universities and colleges. However, art education can not always get away with the title of "painting major." From this view, art is equal Painting, and art is not just painting. Professor Yin Shaochun holds the view that the five core literatures of art disciplines in the report of art core literacy are image reading, art performance, aesthetic judgment, innovative ability and cultural understanding.

![Diagram of Art Education](image)

**Table 1. Core literary chart**

As can be seen from Chart 1, the art major is a multidisciplinary comprehensive major, involving humanities, philosophy and aesthetics. Art has such meanings as "art," "art," "art," "technology," and "humanity." This determines that drawing is just one aspect of art discipline training, that is, it has visual cognition. From visual perception to the development of many aspects of core literacy requires continuous learning. However, there are major differences between art education and professional art colleges in normal colleges and universities. The normal education is still the main direction of education. It is the goal of higher normal colleges to cultivate qualified teachers. From some research on the arrangement of art education course in normal colleges and universities, the classroom teaching can not meet the requirements of the curriculum far and wide, and a certain amount of independent learning is needed to realize the knowledge acquisition. At the moment, the establishment of various platforms based on big data based on Internet has laid the foundation for students to learn independently.

### 2. The advantages of Integrating large data into Art Teaching

Big data refers to the use of common software tools to obtain, manage and process data, big data can be set up independent learning platform, flip the classroom, visual teaching and other art teaching to achieve independent learning and interaction between teachers and students. In the big data to change the traditional single teacher teaching, and to achieve true teaching growth, the formation of a new teaching situation.

#### 2.1 The breakthrough of Big Data in Traditional Art Education

Traditional art education and teaching is taken "closed" teaching, led by the teachers, the use of PPT lectures, paintings and other single mode of transmission. Students in the process of teaching has always been passive acceptance, such as some art history theory, aesthetics, comparison of Chinese and Western art knowledge points in the absorption and digestion there are many problems. In the era of Internet information, this single mode of transmission is bound to cause the teaching lag. At present, the era of popularization of smart electronics, students use mobile phones, computers or PAD more than five hours a day, so that teachers through the "project teaching", "interactive classroom". As a result, big data and art teaching in colleges and universities combine to make use of big data so that teachers and students become part of the cycle of teaching elements, effectively changing the teaching situation of teachers.
Table 2. The Establishment of New Teaching Relationship

2.2 Promoting the construction of independent learning platform

Compared with the traditional learning platform, the platform based on large data has unparalleled advantages. The chart (Table 3) is analyzed as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Traditional learning platform</th>
<th>Big data platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audience range</td>
<td>Inside the school</td>
<td>Society</td>
</tr>
<tr>
<td>Coverage range</td>
<td>Small range</td>
<td>Large range</td>
</tr>
<tr>
<td>Content update progress</td>
<td>Slow</td>
<td>Timely and effective</td>
</tr>
<tr>
<td>Tools</td>
<td>Single</td>
<td>Diverse (various media)</td>
</tr>
<tr>
<td>Learning interactive quality</td>
<td>Poor interaction</td>
<td>Strong interaction</td>
</tr>
<tr>
<td>Personality information push</td>
<td>None</td>
<td>comprehensive</td>
</tr>
<tr>
<td>information content</td>
<td>a bit less</td>
<td>Much more</td>
</tr>
</tbody>
</table>

The table 3 more fully illustrates the Internet and intelligent tools (mobile phones, PAD), the full popularity of many communication tools such as Baidu Library, GOOGLE academic, CNKI, WeChat public platform developed rapidly, these platforms have a strong open. Both for students and teachers to facilitate interactive exchanges, students can also complete self-learning. As a discipline of arts education in visual arts, under the environment of big data, various open platforms for communication can be used to view and download high quality works of art and art history materials through the online exhibition halls of major museums both at home and abroad. Previously printed Time can not be compared. Class lectures and discussions, extracurricular use of the platform Released with the students related knowledge points.

3. Fine Arts Education in Higher Teachers Colleges Implementing "Cross-border Integration" and "Project-oriented" Teaching

Professor Yin Shaochun put forward the core literary skills of art disciplines, art education to break the people thinking is only the "painting" restrictions. Art education is a wide range of disciplines, "cross-border integration" of training innovative talents will form a "art + skills + culture + other disciplines," the integration model. In 2014, a top design college in Chicago set up an MBA with a direct blend of art design and business management to provide a more
comprehensive quality education for innovative and creative art professionals. As a result, "cross-border integration" of learning will really make students versatile.

In the era of big data, the significance of project-based teaching in promoting effective teaching is obvious, especially in learning art history, Chinese and Western art history and so on. A study of art history, students in the classroom to listen to teachers lectures and gaze PPT, the students do not intuitive knowledge of the point of view, rote some knowledge of the same point, Thinking is still foggy flowers.

The new teaching model allows students to participate in teaching, each course evolved into a subject, requiring each student to individual or form a group. Individual students or task force in each class project tasks assigned, the use of existing intelligence tools, libraries, museums or online museums, GOOGLE academic, CNKI and other related databases to see the information they need, based on the summary of the investigation report. In the process, once the progress of the research is blocked, the students will actively go on to new and deeper studies on the problems encountered or communicate with the teachers. Gradually there will be a gratifying situation. There is no longer a lack of interactive teaching activities between students and teachers. Students take the initiative to recognize the historical teaching, aesthetics, engineering, philosophy, archeology and art Anthropology and other aspects of the subject knowledge, so gradually change the "intelligent network generation" students think PC, PAD, smart phones and other Internet access only, the game's tools, but the real evolution of these tools into their own learning tool.

At the end of each project, students and teachers should enter into the inquiry session to exchange ideas on the desirability and shortcomings of students' investigation and research so as to enable students to increase their awareness and really reach the target of art core quality raised by Professor Yin Shaochun. As an art education student in normal universities and colleges, most of its post-graduation work is to enter primary and secondary schools as art teachers. Each task of the project ends, and students are required to combine their art textbooks with primary and secondary schools to study and research Data, into primary and secondary art appreciation class. The benefits of this approach is obvious, art appreciation classes at primary and secondary schools and art classes in colleges and universities are not the same, you need to art appreciation class in a short period of time using vivid language organization and teaching, so that primary and secondary students enjoy entertaining Art appreciation class. Only by doing so can their own understanding of art be able to show their own characteristics in the art appreciation class at primary and secondary schools. At the same time, the students' own academic accomplishments are promoted.

Teacher's role in this process is changed from the traditional class executor to project assignor. The supporters in the middle of the process make a systematic analysis after the task is finished to understand the mastery degree of the students. Teachers use teaching platforms such as WeChat public platform, Tencent, etc. to introduce students to the relevant points of knowledge, solve problems for students. Use the form of data to understand the situation of students to master knowledge points.

![Table 4. The situation master knowledge points chart](image)

Teacher statistics project implementation essentials as follow:
Table 5. The theoretical framework on Project

4. The "National cultivation" Plan Provides Reference for the New Teaching Model

The "National Training Plan" refers to the primary and secondary school teachers' national training programs aimed at improving the overall quality of primary and secondary school teachers, especially rural teachers, an important measure. The "National Training Plan" consists of two parts: the "Primary and Secondary Teachers Demonstrative Training Project" and the "Central and Western Rural Key Teacher Training Project." At present, many colleges and universities, especially normal universities, undertake some training programs, including the training of primary and secondary school teachers, Primary school teachers, long-distance teacher training, teacher training in primary and secondary schools, lack of weak subject teacher training and other demonstration projects for the country's primary and secondary school teachers, and for the national primary and secondary school teachers to train the backbone to make a demonstration, and to develop and provide a number of high-quality teaching resources. Anqing Normal University, a local normal university, started its national education program in 2012 and the national education program for art education began in 2014. Every year, primary and secondary school teachers from all over Anhui Province carry out a half-month training in Anqing Normal University. The courses involve education, management of education, development of quality courses in primary and secondary schools, education and observation, and professional inspection.

The primary and secondary school teachers who come to take part in the national training are not only coming to attend the training to improve the teaching ability, but also bringing the key information for the art education in higher normal colleges. In the process of communication with primary and secondary school teachers, we learned that the current teaching situation is a one-man-to-one teaching task that undertakes several disciplines and covers disciplines such as art, sports, language and history. From this situation, we can visualize potential phenomena in primary and secondary schools, that is, art teachers in primary and secondary schools must have a versatile ability. This phenomenon also provides a reference for the training programs of fine arts education in normal universities. Teaching modes that are based solely on one-way transmission of paintings and traditions must not be compatible with the fine arts teachers.
required by primary and secondary schools. Based on big data, using advanced educational technology to build an independent learning platform, changing the passive mode of teaching into self-learning mode, which is a must for the new mode of higher art education.

In view of the status quo of primary and secondary art education and many visits to local primary and secondary schools in the NPU program, Anqing Normal University made an attempt in 2013 and applied for the pilot project of teaching reform by the Ministry of Education——“Integrated teaching of Music, Fine art, Sports”. In the school of fine arts, music, sports sophomore students in various professional selection of more than 10 students into the United States to learn the sound of the United States. Academic departments responsible for monitoring the entire implementation process, the use of remote tracking service, student internship links do statistical analysis to see the implementation of the effect. Through the integration of timbre and beauty teaching trainees' internships, the study report was written in the form of practical experience. The educational administration established the files of various materials for the study and internship of several students and gradually formed the empirical mode of reform pilot. The continuous optimization process in the project teaching made the reform of this pilot project very effective.

More than ten students in the sophomores of fine arts, music and sports were selected to learn from the Integrated teaching of Music, Fine art. The educational department is responsible for monitoring the whole implementation process, using the remote tracking service to do statistical analysis to the students' practice link, and to check the execution effect. Through the practice of the Integrated teaching of Music, Fine art students, to examine the report form in practice, The educational administration established the files of various materials for the study and internship of several students and gradually formed the empirical mode of reform pilot. The continuous optimization process in the project teaching made the reform of this pilot project very effective.

Therefore, when the national training program improves teaching business ability for primary and secondary school teachers, the plan provides some reflection on the teaching mode of art education in normal universities, which is a new impetus to promote the development of art education in teachers colleges.

5. Realize the strategy of teaching optimization from creative market to maker mode

In order to meet the needs of society, local higher teachers colleges should develop teacher education and non-teacher education co-exist in the mode of running a school. Teachers education should train art teachers for primary and secondary schools. Non-teacher education is to develop talents to enter enterprises and institutions. In the era of big data, all kinds of Internet + innovation and entrepreneurship model emerging development, provide development ideas for local higher teachers colleges.

In 2016, Premier Li Keqiang put forward the "artisan spirit" in the government report. This can be borrowed from the non-normal major of fine arts education in the local higher normal colleges in terms of personnel training mode. To guide students in the "art combined with artisan" paradigm for innovation and entrepreneurship. The model of "Art and Industry Integration" enables students to master the art from design to material cognition, and then to the physical production process. Meanwhile, it is of great significance in cultivating students' innovative ability and team spirit. As a local normal university, the development of local economy and culture is its unique feature. In cultivating students' creativity and creativity, they consciously combine local cultures to develop cultural and creative industries. In this process, their ability to research, design and produce special products will increase.

Design and production of products how to adapt to the market? "Creative Market" is the best way to make a work of art from product to demand. When a student's work goes to a "creative market," in which students can understand whether the work they have designed and produced is socially recognized, this is the best place to test whether a student's work is acceptable. Such students active learning, thinking how products get the "market"? The university are a small-scale society, The teaching mode of "combination of art and work" is carried out, Teachers encourage students to make relevant questionnaires before art design and take questionnaires to understand all kinds of people's needs.
Questionnaire:
1. like the color
2. the style of work design
3. the form of the work
4. product features
5. a combination of local culture, such as Huangmei opera culture, tourism, non-material culture
6. the price range
7. the type of pattern
8. material preferences
Participants as follows:

Results: The questionnaires from these invited faculty members both understand their preferences for the product they are looking for and can also be given advice from the faculty members concerned. After the questionnaire is collected, teachers and students should conduct a systematic analysis of the questionnaire and establish a database of market demand for products in terms of color, material, function and style by using data-based operation mode so as to build an efficient and reasonable platform for creativity. At this point, the establishment of "creative market" can effectively promote the "art combined with" teaching effectively.

Innovation and entrepreneurship have become an important part of promoting the development of the "new normal" of China's economy. In order to train and cultivate students' creativity and innovation, the opening of "creative market" of art education in higher normal colleges and universities has moved from the idea of "creative market" to the mode of "maker education". In the general situation of Internet, The New Model of Talents Cultivation in Normal Universities opens a new horizon. On January 28, 2015, Premier Li Keqiang conducted a special study on the executive affairs of the State Council to support the development of "Chuang Chuang Space" and set up a new platform for innovation and entrepreneurship. Maker education model, refers to efforts to turn various ideas into reality. Innovation,
entrepreneurship and creative education are closely related to each other. The spirit of creating customers is pioneering and open source, collaboration and sharing, focusing on the spirit of enterprise and teamwork, emphasizing the desire to turn dreams into reality and the qualities that dare to take risks and challenges.

The mode of “Maker education” makes the non-normal art teaching in normal universities become agile, and the project-oriented teaching form will become a daily pattern. A variety of innovative and creative teams are formed in "project-based" teaching. The "project-based" model of the maker model enables creative and innovative project design and enhances the ability to extensively collect resources and exchange people at all social levels. And then use the knowledge of the classroom, using existing materials, tools and equipment, individual students or team members try to solve the problem, in the process of solving the problem, students gradually form a kind of innovation ability, and in the actual project to form complementary teams, virtually Foster students' sense of teamwork.

6. Conclusion

To sum up, with the advent of big data, the way people live, work and learn changes accordingly. Under the era of big data, the new teaching mode driven by innovation and creativity has brought the thinking and development impetus to the art teaching in normal universities and colleges. However, students living in the "80" and "90" and "00" popularization of the Internet can not meet the needs of their development with traditional teaching. There is no lack of innovative and adventurous students among these students, who have great enthusiasm for creative entrepreneurship. As a local normal university, keeping up with the pace of the times, it is an important standard to cultivate college students to find problems, raise questions and solve problems, and to give individualized training to college students in order to meet the needs of talents in the era of big data. Therefore, the new teaching mode of "combination of art and industry", "cross-border", "project-oriented" and “maker education” has become the new focus of art education and teaching in local normal universities. Under the background of big data, under the backdrop of big data, local colleges and universities should combine local culture with the characteristics of running a school to encourage students to actively innovate, innovate, start their own businesses and train applied talents who are in need of the society. This is a topic of sustainable development.

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