Design and Realization of Art Design Network Teaching Platform Based on J2EE

Baoyang Zhao[✉]

Jiangxi University of Applied Science, Nanchang 330109, Jiangxi, China
`hid2562022@163.com`

Abstract. Art design refers to a discipline that integrates art, science and technology, and this discipline emphasizes creativity. Modern art design is gradually moving towards industrialization and developing faster and faster. Therefore, the demand for talents in art and design is also increasing. There are many differences between the training mode of talents in art and design and talents in traditional industries. Art and design talents pay more attention to practicality and creativity. Therefore, with the help of network teaching platform as an idea of art design education. At present, many colleges and universities have opened a number of design-related majors such as art design and advertising design. However, on the one hand, it is affected by the lack of school funds, and on the other hand, the school's resources cannot be fully utilized. Therefore, in order to meet the rapid development of computer technology, information science and virtualization technology, it is particularly important to design an efficient and energy-saving art design network teaching platform.

Keywords: online classroom · art design teaching · teaching design

1 Introduction

With the rapid development of social economy, the Internet affects all aspects of our lives, and the increasing maturity of network information technology also creates better opportunities for education. The teaching mode of the past has long been eliminated and is no longer popular with the public. Therefore, the teaching model needs to make some changes. However, it is very difficult to carry out online classes in the field of art and design teaching, and there are many force majeure factors.

This article will also start from the two teaching forms of conventional classroom and online classroom, and point out that the two are interdependent development trends, and it is imperative to introduce art design teaching into online classrooms. Finally, combined with the case to analyze how to carry out the art design teaching based on the network classroom, including; the choice of learning theory, teaching mode and so on [11]. Then, according to the above content, the problems existing in the art design teaching based on the network classroom are discussed and researched, and finally scientific and reasonable countermeasures are formulated. Apache Hive is a data warehouse infrastructure for processing structured data in Hadoop. There are many similarities with
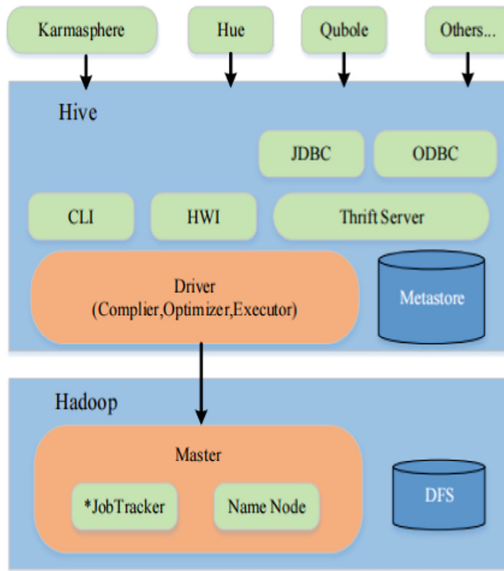
Fig. 1. Hive architecture diagram

traditional relational databases [2]. It can map structured data files and database tables, A convenient SQL query language that can extract, transform, and load. Hive will use HiveQL to write queries Convert sentences into one or more Hadoop map tasks and submit them to the underlying Hadoop clusterto do it. Includes a compiler and an execution engine. The compiler converts the query into a mapTask, the execution engine submits tasks to the Hadoop framework. Because Hive is built on the MapReduce programming model, so it can be easily extended. It is ideal for querying data directly from HDFS and HBase [4] (Fig. 1).

2   The Development of the Network Environment

China Internet Network Information Center (CNNIC) released the "23rd Statistical Report on the Development of China's Internet". The data shows that: up to now, the Internet penetration rate in China has exceeded the global average level of 21.9% for the first time with a ratio of 22.6%. The number of Internet users reached 298 million, the number of broadband Internet users reached 270 million, and the number of national CN domain names reached 13.572 million. The three indicators continued to rank first in the world. The most common network applications used by college students are: online music, instant messaging, and online news. Relatively speaking, the frequency of use of online news is relatively low, while the use of online video is relatively high. According to the results of a questionnaire survey conducted by China Learning Network on "Online People's Congress" and "Online Jiangda University", 80.17% of the current students feel that the learning effect of the online college is "average" or above. Few college students can adapt to the characteristics of online learning [1] (Fig. 2).
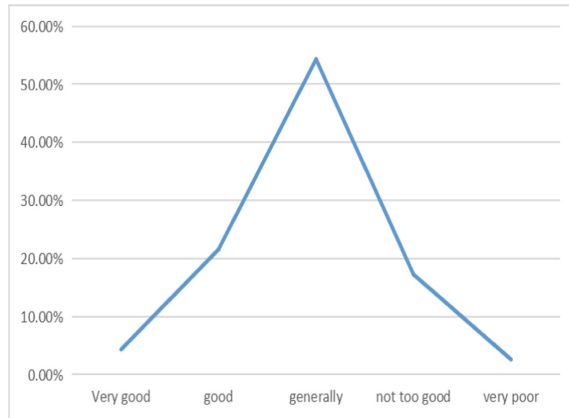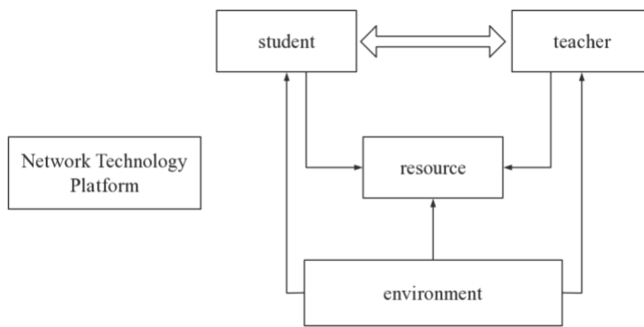
Fig. 2. Responses to e-Learning Survey Results

Fig. 3. Five elements of an online classroom

3   Overview of the Color by Number Course

"Digital Color" online classroom are: students, teachers, resources, environment, and technology, as shown in the Fig. 3.

4   System Requirements Problem Description

The art design network management system introduces the package diagram, divides the requirements according to the function, and obtains different types of use cases. A package diagram as a subsystem [9]. The art design network teaching platform system can be divided into multiple subsystems such as topic selection management subsystem, creation and demonstration subsystem, scene creativity subsystem, display evaluation subsystem, educational affairs management subsystem, user rights management subsystem, and collaborative creation subsystem [3] (Fig. 4).
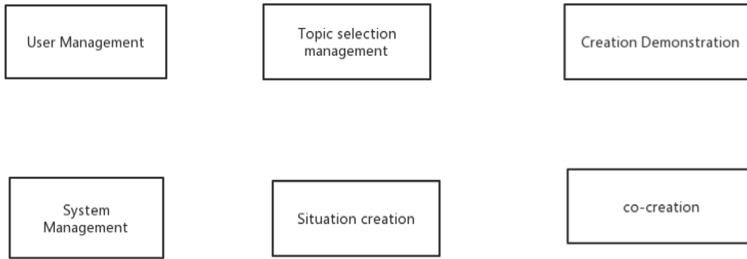
Fig. 4. System function package diagram

5   Demand Acquisition Mode

In the process of research, interviews and forms are used to collect the content of the needs, and after the collection, the content is classified and summarized [5]. Determine different functions according to different categories, and distinguish the needs of operators, managers, and decision makers from the authority, so that grassroots users and managers can meet the needs.

Analyze and summarize the results after coordination and communication, and finally organize them into the form of software engineering requirements. Then confirm with the user, so as to verify the accuracy of the requirements [6].

Communicate and coordinate with users to ensure that the baseline meets the requirements and the demand analysis is completed [12].

6   Detailed System Design

This system uses J2EE to design the Web application system. Considering the need to improve the efficiency and smoothness of the system during operation, the system uses a four-tier architecture [8]. The four-tier architecture consists of presentation layer, business logic layer, persistence layer and database layer. The four-tier architecture is more convenient for the subsequent maintenance and update of the system, and the operating efficiency is more efficient than the traditional three-tier architecture. It is an architecture model that is often used in network application systems. The main functional structure of the system is shown in the Fig. 5.

The Fig. 5 analyzes in detail that the management system can be divided into the following categories: administrator, general user, personnel situation, text data, transaction processing, report printing, user management and system settings. Among them, the common user class and the system administrator class inherit the attributes of the system user class [7]. In addition to the user name, password, authority, login method, and logout, they also have their own attributes as the Fig. 6 shows.
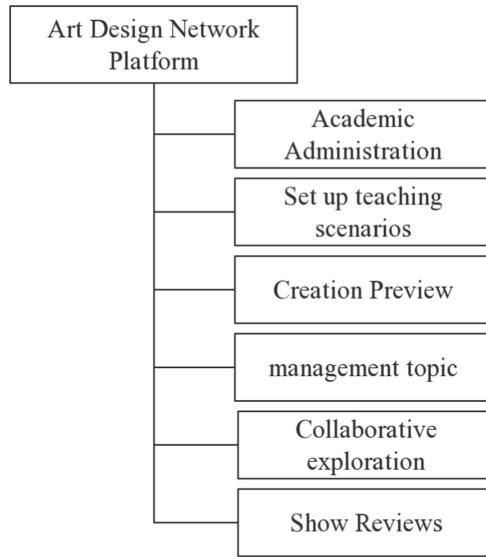
Fig. 5. System Functional Architecture

Fig. 6. System static relationship diagram

7   The Dissonance of Teaching Concepts and Media Technology

The ultimate users of CAI courseware are students, so the best criterion for testing CAI's success or failure is the student's experience. After the CAI courseware is developed, it is necessary to pay special attention to collecting the feedback from the students. It is also possible to use the online classroom teaching. Students can independently develop the CAI courseware according to their own characteristics, so that the students can have a deeper understanding of the true meaning of online classroom teaching in the process, and further Enhance students' UI interface related art design ability. Therefore, the current stage of art design teaching in online classrooms is only in the toddler stage. Although there will be many problems, I only hope to provide some references for art design teaching based on online classrooms.

8   Computer Application Fundamentals

As a supplement to the course content, the author selects 3 case micro-videos in each issue, the total duration of the three small videos is less than 10 min, and pushes the case video content. Students click on the theme content pushed in each issue to enter the study, case view. Frequently guide students to implement knowledge in combination with cases (Fig. 7).

```
<view class="element video" style="{{data.style}}">
    <video src="{{data.customFeature.videoSourceUrl}}
" controls binderror="videoError" data-compid="{
{data.compId}}"></video>
  </view>
      <video id="videoele-{{data.compId}}" src="{
{data.videoInfo.video_url}}" controls
binderror="videoError" bindplay="videoProjectPlay"
bindpause="videoProjectPause" data-compid="{
{data.compId}}" hidden="{{data.videoPoster}}">
    </video>

videoPlay : function(event) {
  var that = this;

  this.setData({
    videoPosterHidden : true
  });
```

Fig. 7. Video core code

9   Conclusion

This article starts from the theory, and combines the actual case to research and discuss the art design teaching based on the network classroom. The main contents are as follows:

According to the comparison of conventional classroom teaching and online classroom teaching, we can see the connection and difference between the two. It is helpful for everyone to understand the development of online classrooms. The development of online classrooms is not intended to replace conventional classroom teaching. The two are interdependent and complementary.

From the perspective of the characteristics of art and design education and teaching, online classrooms have the characteristics of multimedia, personalized learning, inquiry-based learning, openness, interaction, and nonlinearity. This is the introduction of online classrooms in art and design teaching. Where the advantage lies. Therefore, the possibility of introducing online classrooms in art design teaching is analyzed with the help of software and hardware facilities requirements.

Combining the actual case and the art design teaching theory based on the network classroom to analyze and discuss, we can find that effective teaching must be based on the relevant learning theory. Expounds behaviorism, cognitivism and constructivism in detail, and proposes that the teaching based on network classroom is not constructivism. Instead, different learning theories need to be used according to different learning tasks. Then, several teaching modes of art design teaching based on network classroom were researched. There are various forms of online classrooms, which need to be realized with the help of model teaching, the construction of learning environment and the creation of virtual learning community.

There are various forms of online courses, but there are still many problems. With the help of the analysis and research of online classroom teaching, we found that the current online classroom has the following deficiencies: teachers' cognition is not accurate enough, the understanding of online classroom teaching methods is incomplete, whether online classrooms focus on knowledge or experience, and conceptual confusion.

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