Research on the Implementation Path of PBL Mode in the "Craft" Module of High School Art

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ABSTRACT

The article aims to integrate the PBL mode into high school art classrooms, cultivate students' independent exploration and group cooperation abilities through project-based learning, and promote the development of students' deep learning and core competencies. Firstly, this paper clarifies the definition and characteristics of PBL mode, and then, it analyzes the compatibility between PBL mode and the high school art "Craft" module in terms of curriculum objectives, teaching design, and evaluation system. Finally, taking the "Carpentry" course as an example, this paper discusses the implementation path of PBL mode in the "Carpentry". This includes four stages: project determination, project design, project implementation, and evaluation and reflection.

Keywords: *PBL mode, High school art "Craft" module, Implementation path.*

1. INTRODUCTION

Against the background of educational reform, the cultivation of students' comprehensive literacy and innovation ability has become the core pursuit of education. The "Craft" module of high school art aims to cultivate students' artistic literacy, practical operation ability, and awareness of cultural inheritance. Under the traditional teaching mode, students' enthusiasm and initiative are limited to a certain extent, making it difficult to meet the needs of talent cultivation in the new era. As a new teaching model, PBL mode is guided by real problems, emphasizing the focus on the essence of the discipline, the cultivation of knowledge transfer ability and practical creation ability, and highly compatible with current educational concepts. The integration of PBL mode into the high school art "Craft" module has broken the dilemma of traditional teaching model.

2. CONCEPT EXPLANATION OF PBL MODE

2.1 Definition of PBL mode

The PBL teaching model, also known as the project-based teaching model, originated from Kepler's project method. Its essence is to organize and carry out activities around a problem, ultimately forming a product that solves the problem.[1] By understanding this essential connotation, people can clearly perceive that the PBL teaching model is not an empty theory, but has practical and feasible operational steps, from targeting problems to conducting activity exploration, and ultimately pointing to problem-solving in the form of "products". In recent years, with the reform of education, PBL has also received widespread attention from scholars in the Chinese education field. In this context, project-based learning is defined as a "teaching" and "learning" model that is widely applied in teaching. The PBL mode requires students to focus on the core concepts and principles of the subject, and to be able to engage in activities based on real life to explore and solve problems. Through group cooperation, they can produce the final work and complete the construction of knowledge meaning.[2] This teaching model has changed the traditional classroom format, entrusting the classroom to students and emphasizing the cultivation of students' self-learning ability and teamwork spirit. From this, it can be seen that the characteristics contained in project-based learning are in line with the requirements of talent cultivation in the new era.

2.2 Characteristics of PBL Mode

The characteristics of project-based teaching model are authenticity, inquiry, and practicality. These characteristics run through the entire project. Authenticity is first reflected in the selection of project themes, which should be closely related to students' real lives; Secondly, it is reflected in project activities, the equipment, tools, materials, etc. that students come into contact with should be considered to be similar to their daily life situations; Finally, in the results presentation stage, it is necessary to ensure that the final product can be achieved in a real environment. Inquiry learning refers to the process in which teachers stimulate students' thinking through questioning and setting questions, and use group cooperation and independent exploration to solve problems and achieve the goal of deep thinking and learning. From the practicality of project-based learning, on the one hand, it is reflected in discovering problems in practical situations, ensuring the pertinence and practicality of project-based learning. On the other hand, students enhance their practical skills through practical operations and other processes during the activity process. Therefore, from the perspective of students, project-based teaching fully utilizes the student-centered concept and cultivates students' ability to explore independently; Through the collaboration between teachers and students, teachers and students have developed their cooperation ability; The result, in the form of “multiple evaluations”, has exercised their critical thinking ability. From the perspective of teachers, project-based teaching has changed the traditional classroom teaching model and created a problem-based learning classroom, transforming the classroom model from "teacher" as the main body to "student" as the main body, and from emphasizing theoretical knowledge to emphasizing the principle of balancing theory and practice. However, the content requirements of the high school art "Craft" module aim to understand and record the artistic styles, development trends, and regional customs of different handicrafts in the local or other regions through practical activities such as visits, inspections, research, and creation, and to understand the relationship between handicrafts and folk culture. It is necessary to promote traditional Chinese handicrafts to enhance students' cultural confidence, and be able to set themes based on social needs, innovate traditional handicraft designs, and improve students' comprehensive practical abilities. Therefore, the author believes that incorporating the PBL mode into the teaching of the "Craft" module in high school art can fully stimulate students' potential and innovative vitality, improve teaching quality and effectiveness, and promote students' comprehensive and diversified development.

3. COMPATIBILITY BETWEEN PBL MODE AND HIGH SCHOOL ART “CRAFT” MODULE

When exploring the compatibility between PBL mode and the high school art "Craft" module, analysis can be conducted from multiple dimensions. The PBL mode, as a student-centered teaching method that emphasizes the combination of theory and practice, is highly compatible with the curriculum objectives, teaching design, and evaluation system of the high school art "Craft" module. To fully understand the compatibility between the two, researchers can explore it from the following three aspects.

3.1 Compatibility of Course Objectives

The "National Curriculum Standards for High School Art (2017 Edition)" (hereinafter referred to as the "New Curriculum Standards") explicitly state that the high school art curriculum regards moral education as the fundamental task, focusing on cultivating students' abilities to learn independently, cooperate, and explore, as well as the ability to propose and analyze problems in real-life situations, comprehensively apply art disciplines and interdisciplinary knowledge and skills to solve problems, thereby improving students' core literacy.[3] The “new curriculum standards” take core literacy as the guiding principle. What is the core literacy? The 2022 version of the compulsory education curriculum standards describes core literacy as follows: "Core literacy is the concentrated embodiment of the educational value of the curriculum, and it is the correct values, essential qualities, and relational abilities that students gradually form through curriculum learning to adapt to personal lifelong development and social development needs."[4] However, to implement this vision, there is an urgent need for a teaching model that is compatible with it. Project-based learning can precisely shoulder this responsibility. Project-based learning is a deep learning model that emphasizes the development of students' subject essence, knowledge transfer ability, and practical creativity during the project process. These indicators are key to measuring the development of students' core literacy. From this, it

can be seen that project-based learning is an important way to cultivate core competencies and is compatible with the objectives of the high school art "Craft" module course.

3.2 Compatibility of Teaching Design

The "New Curriculum Standards" propose suggestions in teaching design, such as advocating thematic research-based learning, pursuing authenticity in learning, creating problem scenarios, guiding students to explore independently, and breaking down basic problems into "small problems".[5] This means that art classes are no longer limited to imparting knowledge, but instead focus on research-based learning around themes that are relevant to daily life. Teachers play the role of guides, giving students the initiative in the classroom and exercising their ability to learn independently and solve problems. The teaching design of this module has the characteristics of authenticity, inquiry and practicality. Project-based learning is a systematic construction of critical thinking, innovative thinking, and social responsibility through task-driven approaches in real-life situations, integrating disciplinary knowledge and practical abilities, and achieving critical thinking, innovative thinking, and social responsibility through collaborative exploration. It emphasizes student-centered approach, guiding students to "learn by doing", highlighting the characteristics of authenticity, comprehensiveness, inquiry, and practicality in the learning process. Comparing the teaching designs of the two, the author believes that they have a certain degree of compatibility in teaching design.

3.3 Compatibility of Evaluation System

The compatibility between PBL mode and the evaluation system of the high school art "Craft" module is reflected in two aspects. From the perspective of evaluation objectives, both focus on cultivating students' knowledge and skills, cultural understanding, and comprehensive literacy. From the perspective of evaluation form, the author specifically applies Yin Shaochun's quantitative evaluation formula for art learning to the "Craft" module. Evaluation can be divided into two types: one is the interaction between teachers and students, where teachers evaluate students' works; Another method is the use of evaluation scales, which are commonly used among students for peer evaluation and self-evaluation.[6] This art teaching evaluation formula undoubtedly provides scientific and systematic guidance for the overall art teaching evaluation. Project-based teaching evaluation is showing a diversified trend, advocating students to complete project activities through self-evaluation, intra-group and inter-group peer evaluation. The self-evaluation form provides students with an opportunity to examine themselves internally; Intra-group peer evaluation facilitates students to see the gaps between team members and enhances teamwork; Inter-group mutual evaluation allows different project teams to discover their own shortcomings through horizontal comparison, thereby improving the competitiveness of the group. Through in-depth analysis of the PBL mode and the evaluation system of the high school art "Craft" module, it can be found that they not only highly match the macro evaluation goals and forms, but also coincide with the current cutting-edge educational concepts in the specific implementation process.

4. IMPLEMENTATION PATH OF PBL MODE IN THE "CARPENTRY" COURSE OF THE "CRAFT" MODULE

4.1 Project Establishment Stage

In the practical framework of project-based learning, the project theme serves as the problem oriented starting point and constitutes the fundamental support for the entire teaching activity. Firstly, in selecting the theme, it should comply with the high school art curriculum standards and be suitable for developing students' core literacy. Secondly, teachers need to fully understand students' level of literacy and knowledge foundation, choose project themes with moderate difficulty levels, so that students can have a sense of participation without dampening their enthusiasm for learning and exploration. Finally, project-based learning themes need to focus on the problems that need to be solved in real-life situations. Real problem scenarios can help students engage in learning more quickly, enabling them to truly achieve "learning by doing", acquire and integrate knowledge through practice, and cultivate core literacy. Based on this, the author has established the project-based theme of the "Carpentry" course as "Craftsmanship: Class Shared Bookshelf Construction Plan".

4.2 Project Design Stage

During the project design phase, teachers need to make detailed arrangements for students' activity time and content. In terms of time planning, teachers need to plan the total duration of activities and the time required for each stage of tasks. In terms of activity content, teachers need to design the steps for implementing project activities, as well as the tools and resources required for project activities. At the same time, teachers should clarify the scaffolding assistance they should provide during activities. Finally, a project design table is created(“Table 1”).

Table 1. Project design table (self-made)

Stage	Steps	Required tools and resources	Teachers' activities
Stage 1 (1 class hour)	Entry activity	Multimedia teaching equipment, related themed books, and image materials	Set up problem scenarios to guide students to participate
	Planning scheme	Project Task Description	Guide students to develop reasonable practical activity plans
Stage 2 (2 weeks)	Activity exploration	Bookshelf production related books, internet	Provide information and data collection methods
	Producing	Draw drawings, set structures and components, and annotate dimensions. According to the drawings, prepare white pine wood square, five plywood, and wood glue	Production director
Stage 3 (1 class hour)	Display evaluation	Multimedia display equipment	Develop evaluation criteria and guide students to conduct diverse evaluations

4.3 Project Implementation Stage

Project implementation aims to solve problems and is a key link in implementing project plans and core competencies. It mainly includes four steps: entry activity, planning scheme, activity exploration, and work production (“Figure 1”). During the project implementation process, it is required that teachers and students participate together to complete reasonable and complex learning tasks. Teachers should stand from the perspective of guides and managers, giving students sufficient initiative.

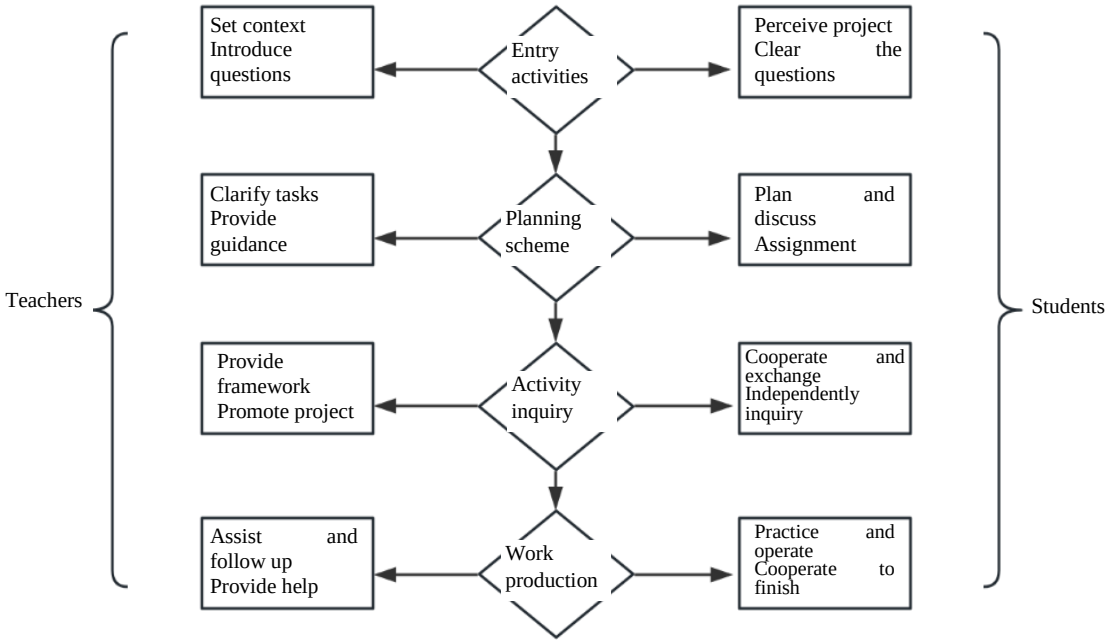

Figure 1 Implementation process diagram.

4.3.1 Entry Activity

The human element is designed to immerse students in problem-solving situations. Teachers set problem scenarios to stimulate students' interest and curiosity. By introducing a series of driving problems, students can connect them with themselves, generate endogenous motivation for active exploration, think about the overall direction of the project, and cultivate a broad perspective.[7] Taking this project as an example, the problem scenario can be set as follows: “Students, I discover that in the corner behind our class, there are various books donated by students piled up horizontally and vertically, like a shaky ‘mountain of books’. Once, when I wanted to find a book called 'History of Chinese Art’, I had to flip through it for half a day and accidentally knocked over the book next to them. This not only took time and effort to find, but also easily caused damage to the book. Faced with such a chaotic situation of book stacking, should we design a wooden bookshelf to make it easy and convenient to find books?”

4.3.2 Planning Scheme

Teachers group the whole class according to the principle of "homogeneity between groups and heterogeneity within groups". During the activity, teachers ask students to create an activity plan. Students should write down the tools, resources, and methods used in each task stage, making students aware that everyone is responsible for both their own learning and the learning of others.(“Table 2”) Only in this way can teachers and students improve the learning efficiency of the entire project team.

Table 2. Activity plan table

Task	Tools and resources	Method
Data research		
Creative planning		
Product production		

4.3.3 Activity Exploration

In project-based learning, it is necessary to be bold to break through the boundaries of the "classroom" and extend beyond the classroom. In addition to advanced studies such as discussion, analysis and exchange in class, students should also learn to collect relevant learning materials by using libraries, the Internet, museums, etc. There is a must to integrate classroom learning with extracurricular activities, and enhance one's comprehensive abilities and literacy.

- Task 1: Data Research

Each group will review materials related to bookshelf design, woodworking techniques, and required tools and materials, with a focus on the advantages and disadvantages of bookshelves made of different materials, structural stability design, and excellent creative bookshelf cases. The report needs to be conducted in groups through organizing and summarizing the collected materials related to bookshelves.

- Task 2: Creative Planning

Students can brainstorm in groups around bookshelf design. Teachers encourage group members to fully unleash their imagination and boldly propose various creative ideas. During the brainstorming process, they can use sticky notes to record each member's ideas, which facilitates centralized review and integration. After thorough discussion, the group should select the most feasible and innovative ideas, refine and improve them, and form a preliminary bookshelf design sketch, marking detailed dimensions, material selection, and functional descriptions.

- Task 3: Product Production

Production steps: Students plane the wool into wooden strips, carefully sand them with sandpaper, and cut them according to the dimensions marked on the drawing for later use. They use a chisel to carve out the bookshelf frame and card slot, and connect the parts properly. The areas with card slots are glued together with woodworking adhesive, fixed and dried, and then nail holes are drilled with a handheld drill. Finally, they tighten the screws at the connection to secure it, and place the cut pallets on the bookshelf frame.

4.4 Presentation and Evaluation Stage

In the achievement presentation stage, each group needs to showcase their bookshelf and send a member to give a detailed introduction, including design sketches, cost estimates, and highlights of their bookshelf design. Afterwards, other group members and teachers will raise questions about the content presented. The evaluation content covers multiple dimensions such as mastery of knowledge and skills, performance during the production process, and work quality. The evaluation method can be a combination of quantitative and qualitative methods, using teacher evaluation, student self-evaluation, and peer evaluation to provide qualitative descriptions, and finally combining various aspects of evaluation to obtain the final score of the group.

5. CONCLUSION

Against the background of core literacy, high school art classrooms should attach importance to the cultivation of students' self-learning and comprehensive abilities. There is a high degree of compatibility between the PBL mode and the high school art "Craft" module. In terms of course objectives, we are committed to the development of students' core literacy. In teaching design, the student-centered position is emphasized. In the evaluation system, the focus is on cultivating students' knowledge and skills, cultural understanding, and comprehensive literacy. Based on this, teachers should optimize the application of PBL mode in high school art courses, and cultivate more high-quality talents with creativity and practical abilities.

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