Innovations

# Implementation and Challenges: Art and Design Curriculum Reconstruction Based on OBE in the Context of Industry-Education Integration.

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***Abstract:***

*Within the context of industry-education integration, higher vocational colleges bear significant responsibilities in enhancing the quality of teaching and bolstering the cultivation of professional skills. This research emphasizes the exploration of the efficiency and challenges involved in reshaping the art and design curriculum based on the Outcome-Based Education (OBE) concept. Our findings suggest that implementing an OBE-oriented art and design curriculum can significantly elevate students' learning outcomes and professional skills, yet concurrently poses a series of challenges: such as ensuring the alignment between industry demands and curriculum practicality and adaptability; establishing a scientific and effective comprehensive quality evaluation system; and enhancing students' innovative abilities. To address these, we propose strategies including deepening corporate collaborations; enhancing teachers' professional competencies; developing diversified evaluation systems, and promoting holistic student development. This research offers instructive implications for enhancing the teaching quality of art and design courses and implementing the OBE concept effectively.*

***Keywords:*** *Industry-Education Integration, Outcome-Based Education (OBE) Concept, Art and Design, Implementation Efficiency, Challenges*

**Introduction**

With the development of the global economy and changes in industries, the modes of talent cultivation have been constantly evolving to meet new demands. Especially in the field of art and design, rapid changes in technology and market conditions are creating a rapidly changing demand for talent. Thus, effectively cultivating vocational skills and innovative capabilities, and enabling students to adapt to these new demands has become an important issue in the field of education.

In recent years, the concept of Outcome-Based Education (OBE) has gained wide attention and application in the field of education. It is guided by learning outcomes, focuses on the cultivation of students' practical application abilities, and emphasizes students' autonomous learning and exploratory study. Several studies have shown that the OBE concept can improve students' learning outcomes and vocational abilities (Brown, 1988; Stambs&Schenkat, 1990; Akir et al., 2012). In the field of art and design, reshaping courses to meet the market demand for vocational skills of talent has also become a trend. This course design method based on the OBE concept is precisely aligned with the goals and direction of current education reform.

However, implementing the OBE concept is not an easy task. Effective alignment of course content with industry demands, the establishment of a scientific and effective teacher evaluation system, and the improvement of teachers' teaching skills are the major challenges faced when implementing the OBE concept. Therefore, in-depth exploration and research on these issues have significant theoretical and practical value for promoting education reform and improving education quality.

This paper aims to thoroughly investigate the execution efficiency of the OBE concept in art and design courses, as well as strategies and methods for addressing challenges. Through this research, we hope to provide beneficial insights and suggestions for improving education and teaching, thereby promoting the process of education reform, improving education quality, and delivering more high-quality art and design talents to society.

**Research Objectives:**

The primary aim of this research is to rigorously investigate the efficiency of execution and challenges faced in the restructuring of arts and design curricula based on the Outcome-Based Education (OBE) philosophy against the backdrop of industry-education integration. Through comprehensive curricular reform, this study focuses on breakthroughs in enhancing vocational skills training quality and precisely meeting regional economic development and talent cultivation needs. The overarching goal is to elevate the overall quality of higher vocational education, providing both theoretical support and practical guidance for educators and educational researchers. The specific research objectives are as follows:

1）Efficiency Exploration: To holistically analyze and evaluate the efficiency of restructuring arts and design curricula based on the OBE philosophy in the context of industry-education integration, elucidating the value and role of this pedagogical transformation in enhancing educational quality and students' vocational skills.

2）Identifying and Analyzing Challenges: To delve deeply into the challenges and issues that may arise during the implementation of OBE-driven restructuring of arts and design curricula. Starting from both practical and theoretical standpoints, this objective aims to propose targeted solutions and recommendations.

## Literature Review

In the context of accelerating economic globalization and the development of the knowledge economy, intensified industrial competition and growing innovation demands have led to higher practical, innovative, and applicability requirements for vocational talents. However, the traditional education model, dominated by theoretical knowledge, is evidently unable to meet these demands. Vocational colleges, as the main training bases for practical skill-oriented talents, bear the responsibility of fulfilling local economic development's talent needs (Huang, 2020). Nowadays, art and design, as disciplines balancing art and technology, are deeply integrating with emerging technologies such as digital technology, virtual reality (VR), and additive manufacturing (such as 3D printing), resulting in talent cultivation that must align closely with actual industrial requirements. Overall, changes in the international economic environment, adjustments in industrial structures, and technological innovations have posed new challenges to talent cultivation in China's higher education.

In the face of these challenges, the Chinese government has adopted proactive strategies in the field of vocational education and skills training. According to the State Council's "Several Opinions on Deepening the Integration of Industry and Education" (2017), strengthening the fusion of industry and education and promoting the coherence of education chains, talent chains, industrial chains, and innovation chains are significant goals for China's structural reforms on the human resources supply side. Moreover, the Central Committee of the Communist Party of China and the State Council (2021) emphasized enhancing the quality of modern vocational education, optimizing the mode of schooling, deepening school-enterprise cooperation, and perfecting the comprehensive system of skilled talent cultivation. These policies manifest China's determination in the development of vocational education and skill-oriented talent cultivation.

However, despite significant progress in vocational education reform, there are still challenges to be overcome in China, such as the cultivation of practical abilities, teacher allocation, and the gap between actual and expected outcomes, among others. Particularly in the field of art and design education, the cultivation of practical abilities has been given higher priority, yet traditional curriculum systems fall short in meeting industry needs and applicability.

Therefore, the Outcome-Based Education (OBE) model, with its emphasis on practical application value, is more in line with the development trends of modern education.

Theoretical research on practical course teaching has a long history, tracing back to the era of Aristotle. The development of Dewey's "learning by doing" theory, competency-based theory, and Spady's Outcome-Based Education (OBE) theory have provided crucial theoretical guidance for the reform of practical course teaching and have advanced corresponding practical progress.

Internationally, examples show that Germany's "dual system" model focuses on the cultivation of application-oriented talents, guiding employment, and fostering applied talents equipped with both theoretical knowledge and practical abilities (Zhu Xiaoming, 2019). The UK education model adopts a philosophy of serving society, emphasizes the applicability and regional nature of education, and actively cultivates students' practical abilities to solve problems in actual production (Du, 2011).

In China, the concept of Outcome-Based Education (OBE) has been widely applied and has received research and practical attention from scholars. For instance, Jiang Bo (2003) underscored the importance of setting higher learning objectives to enhance students' learning motivation. Li Guangmei (2007) pointed out explicitly that the successful implementation of the OBE concept depends on clear teaching objectives, scientific teaching plans, and effective evaluation and implementation methods. Notably, Li Zhiyi and Zhu Hong, among others (2014), especially advocated the "student-centered" OBE concept. They insisted on using students' expected learning objectives as the learning guide, which helps shape students' correct learning attitudes, stimulate their learning passion, and enhance their acquisition of knowledge and skills. In addition, Zhang Xiong Wu (2010), based on stakeholder theory, proposed a "quadruple-linked training model" of "government, enterprise, school, student" from the perspective of "shared responsibility," aiming to address the deficiency of applied skill-oriented talents in practice and innovation abilities.

On the one hand, from a global perspective, the cultivation of high-quality talents needs to closely rely on societal needs. On the other hand, the improvement of talent skills must consider the actual needs of enterprises. Practical experience has proven that deep school-enterprise cooperation is an effective approach to cultivating skill-oriented talents. Internationally, school-enterprise collaborations adhere to a student-centered philosophy, aiming to cultivate students' professional abilities while also focusing on interdisciplinary comprehensive training.

In summary, these research findings collectively emphasize the importance of the OBE concept in modern education, providing useful references for the reconstruction of art and design courses based on the OBE concept in the context of industry-education integration. The cultivation of high-quality talents needs to closely depend on societal needs, and the enhancement of talent skills needs to be aligned with the actual needs of enterprises. Profound school-enterprise collaboration is conducive to the cultivation of skill-oriented talents.

**Methodology**

This study employs a mixed research method, with participants drawn from teachers of Art and Design majors from Shijiazhuang Information Engineering Vocational College, Shijiazhuang Preschool Higher Normal College, and Shijiazhuang Vocational and Technical College in Hebei Province. These participants include both on-campus professional course teachers and enterprise practice tutors. In the questionnaire survey phase, we selected all teachers from these three schools as our sample, totaling 76 participants. In the interview phase, we used a purposive sampling method and chose 12 teachers to conduct WeChat online interviews. As important participants in art and design education, their attitudes and perspectives significantly influence educational reforms and the enhancement of students' vocational skills. Through this mixed research method, we can gain a more comprehensive understanding of the current educational situation and vocational needs, thereby providing valuable references for curriculum reform in the field of art and design.

**Results**

In this study, we conducted a survey encompassing 76 school teachers and corporate instructors to explore the efficiency of execution in restructuring arts and design curricula based on the Outcome-Based Education (OBE) philosophy within the context of industry-education integration. This survey examined four key dimensions: instructional objectives, instructional content, instructional outcomes, and instructional evaluation, with each dimension being assessed through five questions.

In the dimension of "instructional objectives," the overall mean score for the indicator "courses effectively stimulate students' artistic creativity and expressiveness" was 3.36, demonstrating a level of full implementation. In the "instructional content" dimension, the overall mean score for the indicator "introduction of challenging and profound project tasks" was 3.32, also showing a level of full implementation.

However, the overall mean score for the indicator "project practices can be integrated with actual work scenarios and industry demands" within the "instructional outcomes" dimension was 2.97, reflecting a level of implementation, but not yet reaching the standard of full implementation.

Considering the overall mean scores across the four primary dimensions, we found that the total average scores for "instructional objectives," "instructional content," "instructional outcomes," and "instructional evaluation" were 3.19 (implemented), 3.20 (implemented), 3.16 (implemented), and 3.17 (implemented), respectively. The general weighted average score for these four dimensions was 3.18, reflecting that the execution efficiency of restructuring arts and design curricula based on OBE in the context of industry-education integration has been implemented overall, yet there exists room for further enhancement towards full

implementation. The statistical results of this survey, along with the detailed scores for each dimension, are presented in Tables 1 and 2.

**Table 1Overall Mean Value of Teacher Questionnaire Survey**

| Items | Overall Mean | QV |
|---|---|---|
| Ignite students' artistic creativity and expression effectively through the course. | 3.36 | Fully Implemented |
| Incorporate challenging and in-depth project tasks into the teaching content. | 3.32 | Fully Implemented |
| Facilitate students' smooth completion of project tasks by providing teaching content that is easy to understand and apply. | 3.30 | Fully Implemented |
| Facilitate course improvement and instructional optimization through instructional evaluation. | 3.29 | Fully Implemented |
| Guide students in mastering theoretical knowledge and technical skills in art and design through the course. | 3.25 | Implemented |
| Inspire students' artistic creativity and design skills through project outcomes. | 3.25 | Implemented |
| Meet the requirements of industry positions and professional competency through instructional content. | 3.24 | Implemented |
| Align the course closely with job requirements and professional competency standards. | 3.22 | Implemented |
| Employ objective evaluation methods in the course to assess students' learning and development. | 3.22 | Implemented |
| Integrate advanced educational concepts and forward-thinking technologies into the project. | 3.21 | Implemented |
| Utilize project outcomes in practical work scenarios and industry demands, enhancing students' awareness of job roles. | 3.21 | Implemented |
| Provide timely and valuable feedback to assist students in enhancing their artistic creativity and project design skills. | 3.19 | Implemented |
| Demonstrate students' abilities in innovative design through the outcomes of project practice. | 3.18 | Implemented |
| Nurture students' artistic thinking and innovation capabilities through the course. | 3.15 | Implemented |
| Assess the students' learning outcomes and competency levels accurately within the course. | 3.14 | Implemented |

| | | |
|---|---|---|
| Assess the measurability and comparability of project outcomes. | 3.11 | Implemented |
| Demonstrate students' design abilities and application level through project outcomes. | 3.04 | Implemented |
| Equip students with the ability to solve practical problems through the course. | 3.00 | Implemented |
| Encourage students to strengthen their learning, improve project quality, and refine project tasks through instructional assessment. | 2.99 | Implemented |
| Align project practice with real work scenarios and industry demands. | 2.97 | Implemented |
| **General Weighted Average** | **3.18** | **Implemented** |

**Table 2Overall Mean Value of Dimension Variables**

| Items | Overall Mean | QV |
|---|---|---|
| Project Teaching Objectives | 3.19 | Implemented |
| Project Teaching Content | 3.20 | Implemented |
| Project Teaching Achievements | 3.16 | Implemented |
| Project Teaching Evaluation | 3.17 | Implemented |
| **General Weighted Average** | **3.18** | **Implemented** |

**Discussion**

Using a questionnaire survey method, this study investigated the implementation of the Outcome-Based Education (OBE) concept in art and design courses under the context of industry-education integration, as viewed by 76 school and enterprise teachers. The results show that, in general, the implementation efficiency of the OBE educational concept in art and design courses is satisfactory, but there are also some differences. For indicators such as stimulating students' artistic creativity and expressiveness and introducing challenging and in-depth project tasks, the implementation efficiency has reached a 'fully implemented' level. However, for the indicator of combining project practice with actual work scenarios and industry needs, the implementation efficiency is somewhat inadequate, only reaching the 'implemented' level.

These results indicate that while teachers are striving to improve the teaching quality of art and design courses using the OBE educational concept, more effort might be needed to integrate project practice with actual work scenarios and industry needs. This could be due to the difficulty faced by teachers in combining course content with actual work scenarios and industry needs in

actual teaching, or a lack of understanding of how to combine the OBE educational concept with actual work scenarios and industry needs. Many researchers have pointed out that teachers often encounter many difficulties when trying to combine course content with actual work scenarios and industry needs (Herrington & Oliver, 2000; Van den Akker, 1999). In addition, some studies have noted that although the Outcome-Based Education (OBE) concept is widely accepted in theory, teachers often are unsure how to combine the OBE concept with actual work scenarios and industry needs in actual teaching (Harden, 2002; Spady, 1994). This might be due to the lack of effective teaching strategies and tools, or insufficient understanding of the OBE concept by the teachers (Harden, 2002; Spady, 1994).

In order to delve into the practical application of "art and design courses restructured based on OBE under the background of industry-education integration," this study purposefully sampled and interviewed 12 teachers with rich teaching experience and relevant backgrounds. These carefully selected teachers provided indispensable perspectives and insights for our research.

The main challenges and solutions for implementing this course are as follows:

**Challenges:**

1、Challenges of understanding and applying the OBE concept: For some teachers, OBE may be a brand-new concept, and they may need time and support to understand and apply this teaching philosophy. This requires not only a deep understanding of the principles and methods of OBE, but also adjustments to teaching methods and strategies to meet the requirements of OBE. Moreover, for teachers with long-term teaching experience, it may be even more difficult to change their long-established teaching habits and methods.

2、Challenges of integrating the course with actual needs: How to closely integrate course design with the actual needs of the industry so that the knowledge students learn can be directly applied to the actual work environment is a significant challenge. This implies that teachers need a deep understanding of industry needs and development trends, and certain industry experience and contacts, to introduce the latest industry knowledge and skills into the classroom and tightly link course content with actual needs.

3、Challenges of establishing an effective evaluation and feedback system: To effectively evaluate students' learning outcomes and provide timely feedback, a comprehensive and flexible evaluation system needs to be established. This means that teachers not only need to set clear learning goals, but also need to develop corresponding evaluation standards and methods to accurately assess students' learning outcomes. Meanwhile, timely and effective feedback is extremely important for students' learning, and teachers need to find suitable ways to provide students with valuable feedback to promote their learning progress.

**Solutions:**

1、Provide OBE philosophy training: Through regular workshops or seminars, teachers can be provided with specialized OBE philosophy training to better understand and practice the OBE teaching philosophy. For example, educational experts and experienced teachers can be invited to share their experiences and strategies in implementing the OBE educational philosophy, helping other teachers to better understand and apply OBE.

2、Strengthen cooperation with the industry: Teachers can be better acquainted with industry needs by increasing opportunities for field visits or inviting industry experts to share the latest industry requirements and development trends at school, thereby improving the relevance and practicality of courses. For instance, teachers can be arranged to visit relevant industry enterprises or carry out cooperative projects with businesses so they can directly understand and feel the actual needs of the industry.

3、Establish an effective evaluation system: Establish a comprehensive, flexible, and easy-to-operate evaluation system to accurately assess students' learning effects and provide timely feedback. For instance, diversified evaluation methods can be used, including written examinations, practical operation assessments, group projects, self-evaluation, and peer evaluation. Simultaneously, establish a feedback mechanism, such as regular learning progress reports and individual learning guidance, to help students understand their learning progress and areas for improvement.

Through these interviews, we hope to gain a deeper understanding so as to propose actionable suggestions and strategies to promote the reform of art and design education and improve teaching quality.

**Conclusion**

This study has achieved a series of encouraging findings in exploring the field of "Art and Design Courses Reconstruction Based on OBE under the Background of Industry-Education Integration". Through the survey of 76 teachers and in-depth interviews with 12 teachers, we collected and analyzed a batch of valuable data and derived the following key conclusions:

Firstly, teachers have shown significant enthusiasm and effort in enhancing the teaching quality of art and design courses using the OBE educational philosophy. It's particularly worth mentioning that teachers' implementation efficiency has reached the level of "fully implemented" in stimulating students' artistic innovative thinking and expressiveness, as well as designing challenging projects that require deep thought.

However, despite teachers' considerable progress in improving teaching quality, there are still significant difficulties in implementing the combination of project practice with actual work scenarios and industry needs. These challenges may stem from the issues teachers encounter when attempting to combine course content with work scenarios and industry needs in actual

teaching processes, or they may lack methods to combine the OBE educational philosophy with actual work scenarios and industry needs.

Therefore, the results of this study emphasize that when reconstructing art and design courses based on the OBE philosophy in the context of industry-education integration, we need to pay more attention to and strive to solve the challenge of combining project practice with actual work scenarios and industry needs. It is suggested that educational administrations and school managers provide more support and resources to assist teachers in better handling these challenges. Simultaneously, teachers should actively participate in professional training to enhance their teaching skills and industry knowledge. Only in this way can we truly achieve the educational goals in a modern educational environment, namely, improving students' learning quality and meeting the needs of society and industry.

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