

# Reconstruction of Traditional Chinese Culture Curriculum and Improvement of Self-efficacy Based on Autonomous Learning and PBL

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**Abstract:** This article focuses on the optimization and innovation of traditional Chinese culture courses, exploring the key roles of autonomous learning and Problem-Based Learning (PBL) in curriculum reconstruction. The study begins with autonomous learning theory, analyzing its effective application in the setting of traditional Chinese culture courses and, in conjunction with PBL methods, constructs an innovative curriculum system. In addressing the impact of this curriculum system on students' self-efficacy, the research designs an indicator system for self-efficacy and analyzes specific pathways for enhancing efficacy in teaching practice. By summarizing the key findings from the curriculum reconstruction, this article proposes educational strategy recommendations that integrate autonomous learning and PBL, aiming to provide theoretical support and empirical evidence for the reform of traditional Chinese culture courses and the enhancement of students' core competencies.

**Keywords:** Traditional Chinese culture course; Autonomous learning; Problem-Based Learning (PBL); Curriculum reconstruction; Self-efficacy

**Online publication:** March 13, 2026

## 1. Introduction

With the acceleration of globalization, the inheritance and innovation of traditional Chinese culture face numerous challenges. Traditional educational models often emphasize knowledge infusion, lacking opportunities for students to engage in independent inquiry and practice, making it difficult to stimulate their intrinsic motivation for active learning. Therefore, the reconstruction of curricula based on autonomous learning and Project-Based Learning (PBL) becomes particularly crucial. This study endeavors to elevate students' self-efficacy in the learning of traditional Chinese culture courses, as well as fortify their cultural identity and practical competencies.

The curriculum design is grounded in self-efficacy theory, with active student participation at its core, and

constructs a series of projects centered around traditional cultural themes such as literature, art, and philosophy. Through group collaboration, students experience a complete learning module that spans from problem identification, literature review, practical research, to outcome presentation (e.g., reports, displays, essays). The study employed the revised “Academic Self-Efficacy Scale” by Liang Yusong to conduct retrospective pre- and post-test questionnaires among 88 students participating in the course. The results indicated significant improvements in students’ self-confidence, sense of task mastery, and ability perception. The course emphasizes process-based assessment and regular reflection, combined with a continuous feedback mechanism, effectively promoting the development of students’ self-efficacy.

The curriculum reconstruction is centered on the establishment of authentic contexts, and systematically implements teaching in dimensions such as calligraphy, traditional Chinese painting, traditional music, philosophy, cuisine, and attire, thereby enhancing students’ comprehension and recognition of traditional culture. The challenges faced in practice motivate students to actively solve problems, thereby enhancing their confidence in their abilities. Simultaneously, the course emphasizes the integration of modern educational technologies, utilizing online platforms and multimedia tools to facilitate cultural collaboration and communication, broadening students’ horizons, and enhancing their learning interest, participation, and cultural adaptability. Additionally, teachers play a pivotal guiding role in the course, providing not only academic and professional guidance but also emotional and psychological support, effectively helping students overcome learning obstacles and ensuring the effectiveness of autonomous learning.

In conclusion, the curriculum reconstruction based on autonomous learning and PBL effectively enhances students’ self-efficacy, providing robust empirical evidence and practical references for future traditional cultural education reforms.

## **2. Reconstruction of the traditional Chinese culture curriculum**

### **2.1. Application of autonomous learning in curriculum reconstruction**

In the reconstruction of the curriculum, the concept of autonomous learning profoundly influences the design of course objectives, content, and assessment systems, driving them towards promoting students’ active exploration and personalized participation. This transformation significantly enhances the flexibility and adaptability of the curriculum, enabling students to plan their learning paths based on their interests and needs. In terms of implementation, the curriculum integrates strategies such as flipped classrooms, Project-Based Learning (PBL), and group collaboration, effectively cultivating students’ self-management, time-planning, and problem-solving abilities. This process places particular emphasis on developing students’ self-monitoring capabilities, which are closely linked to metacognition, learning motivation, and self-management, serving as a crucial mechanism for achieving autonomous learning <sup>[1]</sup>.

During specific implementation, the curriculum incorporates analyses of both domestic and international classic cases, requiring students to apply learned knowledge to solve practical problems through autonomous learning. Additionally, setting clear learning objectives, such as enhancing learning interest, knowledge application abilities, and innovative thinking, are focal point of curriculum design. To ensure the effectiveness and depth of student learning, the curriculum requires students to conduct independent research and prepare reports or presentations, a process that promotes their information acquisition and processing abilities.

The reconstruction of assessment methods is also of paramount importance. Traditional assessment

models emphasize exam scores, whereas in autonomous learning models, in addition to evaluating knowledge mastery, greater attention is paid to students' participation, collaboration abilities, and independent thinking skills. Specific assessment methods include project evaluations, peer evaluations, and self-evaluations, enhancing students' self-efficacy through a diversified assessment system. Meanwhile, a feedback mechanism is introduced to facilitate timely adjustments to learning strategies, helping students reflect and improve.

In selecting course content, more themes and practical activities related to traditional Chinese culture are incorporated, such as traditional crafts, festival cultures, and literary works. By guiding students to independently consult relevant literature and resources, their horizons are broadened, and their interest and identification with traditional culture are enhanced. The practical activities in this process, such as participating in calligraphy, traditional Chinese painting, or folk art learning, not only enhance students' practical abilities but also foster their cultural identity and pride. The curriculum also utilizes digital technologies, such as online learning platforms and resource sharing, further enriching learning resources and enabling students to acquire knowledge more autonomously.

Ultimately, through the aforementioned measures, the effective application of autonomous learning in curriculum reconstruction not only enhances students' autonomous learning abilities and self-efficacy but also promotes their deeper cultural understanding and accumulation. Through this self-guided learning process, students grow through participation, forming good habits of lifelong learning and laying a solid foundation for their future learning and development.

## **2.2. Role of the PBL method in curriculum design**

The PBL method promotes deep student engagement through authentic projects in traditional culture courses, playing a crucial role in enhancing autonomous learning abilities and self-efficacy. For example, the "Transforming 'Scissors' into Butterflies" unit conducted in this course guides students to explore the theme of paper-cutting art, with their achievements displayed, reflecting not only students' understanding and innovation of traditional craftsmanship but also gradually integrating paper-cutting art into campus culture construction, achieving an organic combination of cultural heritage and campus environment <sup>[2]</sup>. This practice demonstrates that PBL can enhance students' perception and identification with traditional culture through culturally relevant projects close to reality, thereby promoting the development of their comprehensive abilities.

Specifically, the PBL method emphasizes team collaboration and interdisciplinary integration. Through group collaboration, students pose questions, conduct research, and present findings for projects, encouraging mutual learning in discussions and enhancing social and communication skills. Each project cycle is typically set for four to six weeks, during which students deeply explore specific cultural themes, such as comparative studies of different philosophical schools like Confucianism, Daoism, and Buddhism, and are ultimately assessed through collective presentations or achievements reports, ensuring that each student gains a sense of accomplishment.

When applying the PBL method to traditional Chinese culture courses, clear learning outcome standards must be established, encompassing three dimensions: knowledge mastery, skill application, and attitude development. Assessment criteria after project completion include both quantitative and qualitative aspects. With quantitative scoring based on the completeness of project reports and the professionalism of presentations, qualitative attention is paid to group collaboration performance, individual contributions, and in-depth understanding of cultural arguments. Additionally, end-of-term self-efficacy assessments are conducted through

questionnaires, helping students recognize their growth and shortcomings during the learning process and encouraging them to adopt a continuous improvement attitude in future learning.

The effective implementation of the PBL method in curriculum design not only promotes in-depth understanding of subject knowledge but also enhances students' innovative abilities and problem-solving skills, cultivating them into talents with cultural confidence and an international perspective. Through this method, the reconstruction of traditional Chinese culture courses can better meet the demands of modern education, creating a favorable environment for students' all-around development.

### **3. The impact of autonomous learning and PBL on self-efficacy**

#### **3.1. Construction of the self-efficacy indicator system**

The construction of the self-efficacy indicator system is based on Bandura's self-efficacy theory, aiming to measure and enhance participants' self-efficacy in autonomous learning and PBL environments through systematic indicators<sup>[3]</sup>. Bandura's self-efficacy theory provides a core theoretical foundation for measuring and improving individuals' beliefs about their abilities in academic settings. His emphasis on "individuals' confidence judgments about their ability to complete specific tasks" precisely aligns with the core requirement for learners' subjective initiative in autonomous learning and PBL models, laying a cognitive foundation for constructing a self-efficacy indicator system tailored to this research scenario.

For measuring academic self-efficacy in a mixed environment of autonomous learning and PBL, the "Academic Self-efficacy Scale" developed by domestic scholar Liang Yusong based on Bandura's theory offers a mature empirical framework<sup>[4]</sup>. This scale divides academic self-efficacy into two dimensions: learning ability efficacy and learning behavior efficacy. The former focuses on individuals' judgments about their ability to complete academic tasks and achieve results, while the latter emphasizes individuals' confidence assessments in adopting effective learning methods to achieve goals. This division not only echoes the core characteristics of self-efficacy proposed by Bandura—combining "cognitive attributes + motivational attributes"—but also covers key aspects such as self-cognition of abilities in autonomous learning and self-control over learning behaviors in PBL, providing a validated dimensional reference for the quantitative assessment of academic self-efficacy.

#### **3.2. Approaches to enhancement in teaching practice**

In teaching practice, enhancing students' self-efficacy can be explored and implemented through various methods. Firstly, emphasizing the integration of cognition and motivation by constructing an autonomous learning environment to strengthen students' intrinsic motivation<sup>[5]</sup>. In implementing autonomous learning, it is recommended to adopt goal-setting theory by setting specific short-term and long-term goals, such as completing thematic projects related to Chinese traditional culture monthly, aiming to gradually enhance students' sense of academic achievement.

Project-Based Learning (PBL) is an effective approach to enhancing students' self-efficacy. Teachers can design authentic projects, such as "Exploring Local Folk Culture", guiding students to clarify roles and tasks within team collaborations to strengthen their sense of ability identification. The assessment process should combine formative evaluation with self-reflection, encouraging students to continuously review their learning processes through writing learning journals and regularly conducting group discussions to share insights, thereby gradually consolidating their self-efficacy.

Teachers should prioritize timely and personalized feedback during the guidance process. In course facilitation, teachers should comprehensively utilize positive feedback and constructive criticism to help students identify their strengths and areas for improvement. Research demonstrates a substantial correlation between teachers' teaching styles and students' academic self-efficacy. Teachers with a humorous and engaging teaching approach can create positive learning experiences, which in turn enhance students' self-efficacy <sup>[6]</sup>. By establishing trusting teacher-student relationships, teachers can inspire students to courageously face learning challenges. In practical implementation, diverse activities such as cultural lectures and practical experiences can be integrated to enhance students' cultural identity and sense of participation. For example, organizing students to independently plan and present mini-exhibitions around traditional culture themes can improve their practical abilities and self-confidence. Introducing peer evaluations during the presentation phase further promotes interaction and the manifestation of self-efficacy.

Leveraging digital platforms to construct virtual learning communities supports students in online collaboration, resource sharing, and achievement exchange, thereby increasing learning initiative and participation. Under the influence of information and intelligent technologies, academic self-efficacy demonstrates a positive correlation with students' learning engagement and self-regulated learning <sup>[7]</sup>. Encouraging students to use multimedia tools to record their understanding and reflections on cultural themes deepens the autonomous learning process. Teachers should also continuously update their professional knowledge and skills by participating in training and seminars to explore appropriate teaching strategies. It is recommended to collect and analyze student learning data to dynamically adjust teaching, ensuring that each student experiences success in projects, thereby comprehensively enhancing their self-efficacy.

By comprehensively adopting the aforementioned methods, educators can effectively promote students' learning outcomes in traditional Chinese culture courses and facilitate the enhancement of their self-efficacy, enabling them to autonomously and confidently confront various challenges in their future studies and lives.

## **4. Research findings and practical recommendations**

### **4.1. Key findings from curriculum reconstruction**

The key findings from curriculum reconstruction focus on the effectiveness of integrating autonomous learning and PBL models in enhancing academic self-efficacy, as well as the practical optimization of curriculum design. Through a retrospective questionnaire survey involving 88 university students (a pre- and post-course comparison design), the study primarily evaluated changes in autonomous learning, PBL model application, and academic self-efficacy. Academic self-efficacy, as defined by Schunk, refers to students' self-assessed confidence in their ability to successfully complete given learning tasks at a specified level <sup>[8]</sup>. The survey results indicated that this curriculum model effectively boosted students' confidence in knowledge acquisition, problem-solving, and practical application, validating the practical effectiveness of curriculum reconstruction.

**Significant Multidimensional Improvements in Academic Self-Efficacy:** Data from pre- and post-course questionnaires (using a 1–5 Likert scale) showed substantial improvements in students' self-efficacy across multiple core dimensions. In terms of problem-solving ability, the combined proportion of students selecting “somewhat agree” and “strongly agree” increased from 56.82% before the course to 73.86% afterward, with the proportion selecting “strongly disagree” dropping from 3.41% to 0%. Regarding practical application ability, the proportion of students with high agreement (scores of 4–5) significantly rose from 50.00% to 73.87%, while

the proportion of students unsure (“not sure”) decreased from 35.23% to 20.45%. Additionally, the proportion of students with high agreement in the learning resilience dimension increased from 61.36% to 78.41%. These data consistently demonstrate that the course effectively enhanced students’ confidence in facing challenges and their motivation for sustained learning.

**Curriculum Design Pathway Based on the “Autonomous Learning-PBL” Closed Loop:** The course constructed a four-stage closed-loop learning pathway: “knowledge exploration—problem definition—solution design—outcome evaluation.” During the knowledge exploration stage, which emphasized Autonomous learning, the proportion of students with high agreement on “quickly mastering classroom content” increased from 47.73% to 67.05%. In the problem definition and solution design stages, driven by PBL tasks, the proportion of students selecting “somewhat agree” on “analyzing problems by connecting old and new knowledge” increased from 23.86% to 39.77%. During the outcome evaluation stage, multi-subject evaluations were introduced, significantly boosting the proportion of students with high agreement on “consciously assessing their knowledge mastery” from 42.05% to 80.68%. The design of each stage aligned with specific indicators for enhancing self-efficacy, forming an effective teaching closed loop.

**Multifaceted Evaluation System Validating Overall Course Effectiveness:** The course evaluation integrated process-oriented and outcome-oriented assessments, focusing on autonomous learning behaviors and practical abilities. Data showed that indicators reflecting autonomous learning initiative, such as “willingness to voluntarily choose challenging tasks”, saw the proportion of students selecting “somewhat agree” increase from 26.14% to 30.68%. The improvement in the “practical application” dimension, reflecting practical application ability, was particularly notable. Overall, the combined proportion of students selecting “somewhat agree” and “strongly agree” on various items increased by an average of approximately 20–30 percentage points after the course, systematically confirming the positive impact of curriculum reconstruction on students’ self-efficacy and comprehensive ability development.

The key achievements of curriculum reconstruction are also reflected in resource integration and teaching support mechanisms. By integrating online platform resources with offline practical activities, the course effectively enhanced students’ information literacy and cross-media learning abilities. Teachers provided regular weekly guidance and formative feedback throughout the process, assisting students in setting goals and dynamically adjusting their learning paths. This bidirectional support system not only strengthened students’ autonomous learning abilities and practical skills but also promoted a virtuous cycle of teaching and learning, providing sustained momentum for achieving course objectives.

## **4.2. Application recommendations for enhancing self-efficacy**

Application recommendations for enhancing self-efficacy should revolve around autonomous learning and Project-Oriented Learning (PBL) to promote students’ deep engagement and intrinsic motivation in Chinese traditional culture courses. Specific methods include:

**Clarifying Learning Objectives and Evaluation Systems:** Teachers should collaborate with students to set specific, measurable, short-term, and long-term goals based on the SMART principles, breaking down each learning module into several key tasks to enhance students’ sense of control over the learning process<sup>[9]</sup>. Evaluation should consider both process and outcomes, employing process-oriented assessments such as learning logs and progress reports, combined with summative assessments like presentations and papers. Clear grading criteria should be used to help students promptly understand their progress and areas for improvement.

**Optimizing Learning Processes and Interaction Mechanisms:** Actively promote project-based learning by designing real-world tasks such as “exploring local folk customs.” Enhance students’ collaborative abilities and task identification through group work and role assignments. Establish a timely and regular feedback mechanism <sup>[10]</sup>, combining teacher feedback with peer evaluations, and regularly conduct group presentations and discussions to guide students in identifying their strengths and directions for improvement. Simultaneously, organize regular learning reflections through journal writing or discussion sessions to encourage students to summarize experiences and adjust strategies.

**Integrating Cultural Experiences and Emotional Support:** The course should strengthen practical components by organizing 1–2 cultural experience activities per semester, such as calligraphy, opera, and folk custom investigations, to promote the integration of theory and practice and deepen students’ cultural identity and sense of achievement. Emotional encouragement should be emphasized during teaching by creating a supportive atmosphere through positive evaluations and group celebrations to enhance students’ sense of belonging and confidence in learning.

**Leveraging Technological Resources and Personalized Support:** Utilize online platforms to build learning communities that support resource sharing, online discussions, and achievement displays, expanding learning spaces. Teachers should understand students’ interests and needs through questionnaires and interviews, providing personalized learning path guidance to ensure that learning content matches students’ actual situations, thereby enhancing their learning autonomy and sense of purpose <sup>[11]</sup>.

By implementing the above recommendations, a learning ecosystem that supports the enhancement of students’ self-efficacy can be constructed in traditional culture courses, promoting students’ growth and development in autonomous learning and PBL environments. Through the implementation of these strategies, it is expected that each student will gain a more positive learning experience and outcomes from the enhancement of self-efficacy, thereby deepening their understanding and identification with Chinese traditional culture.

## 5. Conclusion

This study employed a retrospective questionnaire survey method, utilizing the “Retrospective Questionnaire on Academic Self-Efficacy in Traditional Chinese Culture Courses” to compare and evaluate the self-efficacy of 88 senior undergraduates before and after course learning. This method involved students reviewing their own states before and after the course, using quantitative data to reflect the effectiveness of course interventions.

Course restructuring primarily encompassed the following aspects: Firstly, in terms of content design, the course content was divided into four modules, covering Chinese philosophy, traditional arts, folk culture, and historical classics. Each module employed problem-based learning cases to guide students in independently exploring relevant topics, enhancing their learning motivation and interest. Secondly, collaborative learning and reflective practice were adopted as teaching methods, enabling students to collectively solve problems encountered during learning in group discussions, thereby promoting the development of teamwork and social skills. After implementing the PBL method, tasks and problem scenarios were designed to ensure that course content was integrated with real-life situations, enhancing the authenticity and applicability of learning.

The course implementation employed a combination of quantitative and qualitative evaluation methods. Through retrospective questionnaire surveys, it was found that students’ self-efficacy significantly increased after the course compared to before. Learning outcomes were comprehensively evaluated through both process

and outcome assessments, with an average increase of approximately 20% in project scores from midterm to final exams. Interview and group discussion data indicated that approximately 85% of students reported being more actively engaged in independent learning and perceived improvements in their abilities; teacher feedback also noted an approximately 30% increase in the depth of classroom discussions and the frequency of student questions. Additionally, students demonstrated greater composure and effectiveness in problem-solving, reflecting the positive impact of independent learning and the PBL model.

The sustainability and scalability of course restructuring were also considered. It is recommended that, based on successful implementation experiences, this teaching model be extended to other humanities disciplines in future teaching practices, with appropriate adjustments and optimizations made for different academic levels and cultural backgrounds. Furthermore, teacher professional development should be integrated with course restructuring, training teachers to master the design concepts and implementation strategies of PBL to ensure continuous improvement in teaching quality.

In conclusion, the restructuring of traditional Chinese culture courses based on autonomous learning and PBL not only enhances students' self-efficacy but also provides a new pathway for the inheritance of traditional culture and the holistic development of students. The successful implementation of this model demonstrates the significant theoretical and practical value of reforming teaching methods in higher education to promote students' self-efficacy.

## Disclosure statement

The author declares no conflict of interest.

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