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Designing and Developing Teaching Modules based on Chinese Traditional Culture Integration for Product Design Education

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Abstract
This study examines how traditional Chinese culture can be systematically integrated into product design education, leading to the development of a structured experiential UET-E teaching module. The research data collected from semi-structured interviews and Nominal Group Techniques discussion sessions with teachers revealed a strong consensus on the value of embedding cultural heritage in modern design education, there was a strong consensus on the value of And as a result, the UET-E teaching module was designed and developed to provide a practical, student-centred framework that guides learners in understanding, extracting, transforming and extending traditional cultural elements within a contemporary design context.

Keywords: Traditional Chinese Culture; Integration; Teaching Modules Design; Product Design Education

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1.0 Introduction

Globally, many countries have recognised the value of preserving and promoting cultural identity through education. As early as the 1990s, UNESCO's "International Symposium on Education for the 21st Century" stressed the need for educational development to reflect national and local characteristics. In recent years, China has also paid increasing attention to the significant impact of traditional culture on education. It is proposed that "in-depth exploration and dialectical inheritance of moral education resources in cultural traditions is an effective way to enhance self-confidence in socialist culture with Chinese characteristics in the new era" (General Offices of the CPC Central Committee, General Offices of the State Council, 2017). With this trend, China's product design industry has, in recent years, begun to incorporate cultural elements as a means of asserting national identity and uniqueness in the global market (Yu & Jerrard, 2018). However, many existing products on the market still reflect only superficial incorporations of traditional motifs or forms, falling short of a deeper synthesis of cultural values and design principles (Zhao et al., 2024). Corresponding to design education, while Chinese cultural themes and projects have begun to appear in some curricula, a comprehensive and systematic approach to integrating traditional culture with modern design theory remains largely absent. As a result, students often lack the theoretical and practical tools to effectively integrate cultural thinking into their design processes, thereby transforming them. Therefore, to realise a design with "Chinese characteristics" and corresponding educational models, it is necessary to develop a deeper understanding of traditional Chinese culture and integrate it into modern teaching practices (Klaus Lehmann, 2016; Li, 2022; Li et al., 2023).

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In response to this calling, this study aims to develop a structured teaching module that supports product design students in understanding, transforming, and designing innovation into traditional cultural and local elements more effectively.

2.0 Literature Review

On the one hand, the traditional Chinese education for handicraft products is deeply rooted in traditional culture, emphasising material perception, craft techniques, shapes, and patterns as fundamental training components, which promotes the extraction of nature-inspired emotions which manifest in the functionality and aesthetics of products. This traditional educational model employs a master-apprentice approach that prioritises students' perceptual cognition and learning by practical imitation in production (Yan, 2007; Aytekin et al., 2019). On the other hand, judging from China's manufacturing competitiveness path over the past two decades, both the products themselves and the design education model have tended to emulate the Western paradigm of modern design development. (Mu, 2024; Liu et al., 2025). With the development of the times, contemporary product design has become a discipline that transcends boundaries and requires multifaceted knowledge, including the synthesis of various disciplinary information, technology, and cultural aesthetics in the practical application of design (Nawar et al., 2019). Therefore, to realise the fusion of traditional cultrue and modern design education, it is necessary to be based on the local culture, through a deep understanding of the essence of the 'local spirit' in the tradition, and at the same time, continuously applying the modern technology and teaching methods, to form a harmonious situation of the fusion of the East and the West (Li, 2022).

2.1 The theories and strategies for instructional design

In ancient China, the saying "Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand." With this, Confucius (551 BC-497 BC) delivered what may be the earliest description of experiential teaching. A long time later, the theory of experiential learning was formally proposed by Kolb (1985), which promotes learning through concrete experience, reflective observation, abstract concepts and active attempts. Another Confucius philosophy, "teaching students according to their aptitude," has been regarded as the golden rule by Chinese educators since ancient times. Correspondingly, in modern teaching methods, with the increasing update of technological means, it has been recognised worldwide that student-centred teaching and learning can deeply stimulate students' enthusiasm for learning and efficiency (Baeten et al. 2010). Again, the four learning styles proposed by Kolb (Diverging, Assimilating, Converging, and Accommodating) also emphasise varied learner preferences and inform differentiated instructional strategies. Furthermore, building on the foundation, Hansen (2000) and Tosey (2006) advocate for multisensory engagement and diverse experiential strategies such as concept mapping, physical workshops, and emotional development through sensitivity training. Katsanakis (2025) expands this approach through storytelling, simulations, and role-playing, while Başer (2024) and Sun (2024) emphasise context-specific methods in design education, including user analysis, modelling, and strategies to foster motivation and self-determined learning. It defined learning as a series of reusable transactions aligned with specific learning outcomes. Its three core transaction types—Identify, Execute, and Interpret—facilitate engagement, procedural mastery, and higher-order reasoning through simulations, feedback loops, and interactive environments.

2.2 Modern theoretical frameworks for cultural integration in design

In exploring the integration of culture into design, scholars have developed various conceptual frameworks that highlight the depth, complexity, and educational value of cultural engagement in the design process. Leong and Clark (2003) propose a three-layer cultural model that helps designers understand culture on multiple levels. The outer, tangible level consists of material culture such as artefacts, tools, and garments, which often serve as initial visual and structural inspiration. The intermediate, behavioural level involves the analysis of rituals, customs, and social practices that inform the functional and contextual application of design. The innermost, intangible level includes deeply embedded cultural values, beliefs, and cognitive patterns that shape a design's conceptual direction and aesthetic resonance. This model advocates for a holistic cultural approach that moves beyond surface imitation to deeply embedded design thinking.

Wong (2014) adds a communication-focused perspective with his three-level model of cultural visual meaning. At the local level, design relies on vernacular imagery that is meaningful primarily to those with deep cultural knowledge. The intercultural level involves blending elements from multiple cultures to create hybrid visual expressions. The transnational level, meanwhile, draws on universally recognisable symbols to achieve broader global communication. This model illustrates how cultural content in design can operate on different communicative planes, from culturally specific to globally accessible.

Rung-Tai Lin (2017) described the approach using a three-phase model of cultural transformation in design. The process begins with identification, which entails extracting culturally significant symbols, materials, and techniques from traditional artefacts. During the transforming phase, these cultural features are reinterpreted to align with the language of modern design, ensuring they remain relevant and engaging in contemporary contexts. The final phase, implementation, results in design outputs that are not only functional and market-ready but also maintain a clear cultural identity.

Zhang L. H. (2019) examines the symbolic representation of traditional Chinese culture in contemporary product design. He emphasises the use of philosophical and aesthetic symbols—such as traditional Chinese forms, lines, colours, and materials—to convey cultural meaning in contemporary products. Furthermore, Zhang highlights the importance of educational validation, advocating for the integration of research-based teaching practices to help students understand and apply traditional cultural symbols in modern design contexts. His work bridges theoretical understanding and pedagogy, reinforcing the role of design education in preserving and innovating cultural expression.

3.0 Methodology

This study aims to explore a practical approach to integrating traditional Chinese culture into modern product design education by designing and developing teaching modules that provide practical teaching tools applicable in various contexts. Therefore, the research question is: What kind of teaching module can effectively integrate Chinese traditional culture into product design education? To answer the question, the researcher will employ qualitative research methods to design and develop the teaching modules in two stages. At the design analysis stage, data were collected through semi-structured interviews and Nominal Group Technique (NGT) meetings. According to the findings of this stage, the first version of the teaching module design was initiated. At the development stage, the first version of the teaching module design was submitted to experts for online assessment and analysed to refine the teaching module.

4.0 Findings

4.1: The Semi-structured Interview

At this stage, the respondents comprise two designers (DH-M and DW-F), two artisans (CP-F and CC-M), two teachers (TY-F and TW-F), and two scholars (SX-F and SY-F). The discussion is conducted through one-on-one online semi-structured interviews. While the student group consist of eight undergraduate students majoring in Product Design from the Industrial Design Department of the Chengdu Fine Arts Academy, Sichuan Province, China (encoded as SY1-M, SY1-F, SY2-M, and SY4-F). They are grouped by grade, and two students in each group conduct online semi-structured interviews on the same topic.

Topics	
A	Design experience related to traditional culture.
B	The challenges faced in related work or study.
C	Suggestions on integrating traditional culture into modern design teaching.
D	Suggestions for effectively motivating and improving teaching quality and effectiveness.

The researcher translated and archived 12 video interviews word by word and analysed them by extracting the core words mentioned by the interviewees for the four themes, as summarised in Table 1.

Table 1. Summary of the Semi-structured Interview

Topic	Key Words of Responded	16 respondents															Percentage
		DH-M	DW-F	CP-F	CC-M	SX-F	SY-F	TY-F	TW-F	SY1-M	SY1-F	SY2-M	SY2-F	SY3-M	SY3-F	SY4-M	SY4-F	
1	An aesthetic point of view in shape, colour and line	X	X	X		X	X	X	X	X			X					9/16
	Studying and innovating traditional materials, handicraft and structure		X		X	X	X											4/16
	Combined with commercial promotional value	X	X	X				X										4/16
	More design inspiration														X	X	X	3/16
2	Cognition and understanding of culture	X	X				X	X		X	X			X				7/16
	Research and analysis of information		X		X				X									3/16
	To extract the essence and representative elements of culture		X		X	X	X	X	X						X			7/16
	To transform and apply cultural elements	X	X			X	X	X	X	X	X	X	X		X	X	X	13/16
	Lack of craftsmanship spirit			X														1/16
	Product design production process, cost control and commercialisation	X				X		X									X	4/16
3	To improve the curriculum system of relevant Chinese cultural literacy	X	X	X		X			X			X				X	X	8/16
	To strengthen the design fundamental courses with the study of traditional and local cultures.							X	X			X						2/16
	Full range of practical experiences		X		X		X			X	X			X	X	X	X	9/16
	Combination with practical projects and commercial design	X		X	X			X							X	X		6/16
	To rich the instructional design									X								1/16
4	Visiting museums, exhibitions, performances		X		X	X							X	X				5/16
	Participation in design competitions							X						X				2/16
	Interest groups, workshop and studios		X			X		X	X				X					5/16
	Design research and field study		X		X	X			X		X				X	X	X	8/16
	Case studies	X							X			X			X	X		5/16
	Classroom activities					X		X	X					X	X			5/16
	Online social platform and fashion resources					X				X		X	X					4/16
	Participation in crafts and modelling			X												X		2/16
	Reading Books					X												1/16
	Guest speakers are invited to give lectures										X			X				2/16
	Related to my hometown local cultural design project									X			X			X		3/16

Designers, craftsmen, scholars and teachers emphasised the importance of traditional cultural values and the need for innovation in traditional materials and processes. They highlighted the importance of addressing production processes, cost control, and commercialisation to ensure the sustainability of cultural integration. Essential improvements, such as museum visits and design competitions, were also proposed to boost participation. Regarding the student group, fewer students were involved in traditional culture-related design projects, with younger students, in particular, recognising their limited experience; however, many saw traditional culture as a source of greater design inspiration. At the same time, they acknowledged the significant challenges of extracting and utilising elements of traditional culture, aligning with the views of experts on these difficulties.

4.2 The NGT Discussion Meeting of Teachers

The NGT discussion meeting, attended by four teachers from the industrial department of the same Chengdu Fine Arts Academy, was held to discuss how to integrate traditional culture into the specific curriculum system. One of them is a new teacher with less than three years of service. One of them has eight years of experience in the field of foundation courses. The other two have more than 15 years of teaching experience in foundation and advanced classes. The discussion focused on the two research support questions. It was conducted via a video web conference and analysed by extracting the core points mentioned, as shown in Table 2.

Table 2. Summary of the NGT meeting of teachers

Discussion Aspects	Output List
Teaching Content & Core Elements	1. Level of Knowledge & Understanding Constructing Design Thinking and Concepts under Traditional Philosophy： • Knowledge of traditional philosophy and cultural concepts • Traditional Classic Creation and Storytelling • Cultural codes in abstract graphics 2. Way of Extractive Transforming Elements： • Traditional style of pattern, colours and form research • Traditional structures and materials research • Mastering design methods and principles of beauty 3. Application of the traditional elements to design： • The principle of abstraction • The principle of form from 2D to 3D • Modern Design Methods • Design concepts combining East and West • Function, Structure, Material 4. Development Knowledge： • Trends in cultural and creative products • Business Models & Operations
Teaching Methods	1. Student-centred teaching model 2. Teaching instructional design: • Integration lecture: use of web, visual resources, guest speakers, case studies • Task of working: project-based, group work, before and after class participation, brainstorming, concept mapping, presentations 3. Extended experiential activities: Field research, workshops, exhibition viewing, museum visits
Outcome Assessment	1. Criteria of traditional culture integration of design works assessment 2. Stages of working development (Presentation) 3. Assessment of working as a team 4. Reflection report 5. Peer Assessment Form

5.0 Design phase

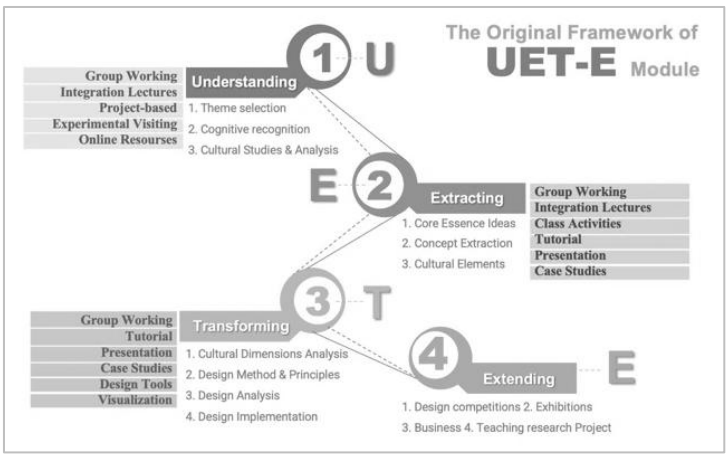

Fig. 1: The first vision of the UET-E Teaching Module framework

Based on the findings of semi-structured interviews and the NGT meeting, the researcher firstly sorted out the four core sections in the process of cultural integration into product design: Understanding (cultural level), Extracting (analysis elements), Transforming (design and application), and Extension (promotion and development). Then, the teaching methods were categorised and combined into each of the four different sections, resulting in the first version of the teaching module design (see Fig. 1 below).

6.0 Analysis for Development

After the first version of the teaching modules was designed, the researcher sent them to experts in the cultural and creative design field individually for review and feedback. The experts consisted of two designers, two scholars, and two craftsmen who were previously involved in the semi-structured interview. At this stage, interviews were conducted by emailing the documents, focusing on two questions that required responses from the experts via email.

Questions:	
A	What do you think are the strengths and weaknesses of the teaching module?
B	Do you have any suggestions for improvements to this teaching module?

6.1 Findings for Improving the Teaching Design

Feedback from experts highlighted the strengths of the teaching module design, particularly in its structured approach, interactive and engaging pedagogy, and the strong introduction of industry-relevant case studies, as well as the logical progression of parts. However, to enhance the effectiveness of the module, several areas for improvement have been identified.

Firstly, the grouping of pedagogical approaches into flexible "toolboxes" instead of fixed compartmentalised portfolios (CC-M, DH-M, SY-F) is intended to be aligned with the use of flexibility in student-centred experiential teaching and learning.

Secondly, the module could be augmented to reflect how stand-alone courses are linked to earlier and later courses, helping students understand the use of cultural engagement in the broader curriculum (SX-F, SY-F).

Again, the cycle of iterative analysis, design, and revision should be reflected between the teaching model sessions before students finalise their final design, which will improve the quality of the design and the ability to reflect critically (DW-F).

Finally, the importance of emphasising practical business use in response to specific teaching content: Case studies analysing successful and failed localisation cases will help students with product design on the level and dimension of cultural integration (CC-M). Exploring and analysing fashion trends in different regions will shed light on the impact of styling semantics and functionality on business outcomes (DH-M).

6. 2 Development of Teaching Module

The developed teaching module, UET-E, separated the parts of the teaching approach and design process. The student-centred project-based teaching module is integrated into the “toolbar” with a variety of other teaching methods. At the same time, the analysis of the integration of traditional culture and its iterative transformation in the product design course design process aims to ensure the effective applicability of this teaching module in various related courses. As shown in Fig. 2:

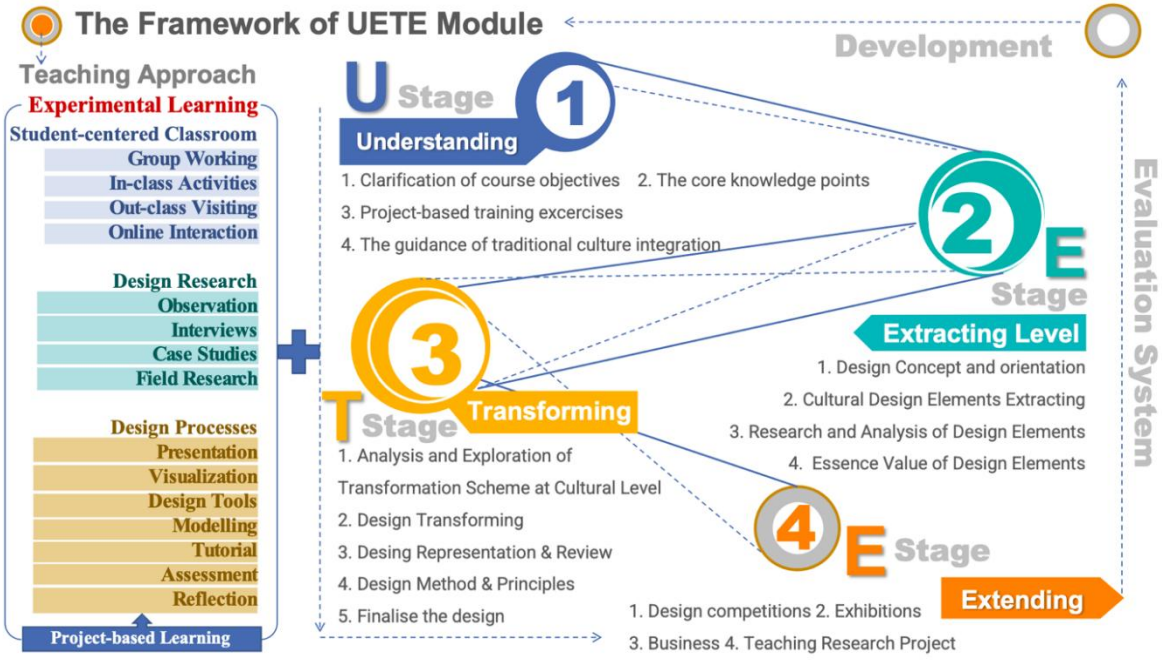

Fig. 2: The developed framework of the UET-E teaching module.

7.0 Discussion

From the semi-structured interviews and NGT survey results, both practitioners and teaching parties involved recognise the need to build on traditional and local cultures to integrate into modern product teaching and learning. In response to the challenges of teaching and design practice, the respondents agree on the importance of student-centred experiential learning and project-based approaches to enhance the effective translation of traditional cultural elements. However, the divergence between students' enthusiasm for traditional culture and their limited ability to extract and apply cultural elements in their design practice. This gap reflects both a lack of systematic training in the curriculum and a lack of effective pedagogical tools for translating intangible cultural concepts into tangible design methodologies. The development of the UET-E module addresses this challenge by providing a staged framework—Understanding, Extracting, Translating, and Extending—to enable students to learn and continually practice enhancements from traditional cultural elements and innovation.

Design education that emphasises cultural integration not only preserves heritage, but also creates innovative entry points for younger generations of designers in the industry to renew traditional and local cultures (Li, 2022). Understanding traditional culture, symbolic extraction, and design transformation at all levels of culture are essential components of the UET-E module for future designers who are culturally literate in Chinese characteristics, as reflected in the teaching content and design process. In addition, unlike traditional theoretical knowledge-driven approaches, the UET-E model emphasises practice, iterative design thinking, cultural immersion and a reflective, integrated approach to learning. Finally, the sub-model also actively promotes the integration of teaching and learning outcomes into broader assessment platforms and commercialisation, such as public exhibitions, design competitions, or pedagogical research projects, thereby enhancing the significance of translating students' work into actual commercial projects.

8.0 Conclusion & Recommendations

This study provides the design of a teaching module for integrating traditional Chinese culture into product design. There are some limitations in the data collection process. One limitation is that the sample size of the three teacher respondents was from the same institution, which may limit the generalizability of the findings to a broader population. Furthermore, cultural elements and integration development may employ different strategies in various regions of China; however, this study did not explicitly consider regional diversity.

In addition, the next stage of this study is the implement to evaluate the effectiveness of the module by applying it to practice in the curriculum, as well as discussing in depth how this pedagogical model can be implemented in the teaching of product design in China, and encouraging teachers to take on the role of cultural facilitators as a means of embracing the opportunities for heritage and innovation between traditional elements and modern design contexts. At the same time, the use of reflection and evaluation of the module's outcomes will be utilised to develop and enhance students' motivation and skills within a platform of public engagement. Ultimately, the module will involve a broader range of samples and mixed methods of redesign and development, contributing to the ongoing refinement of the theory and practice of effectively integrating traditional and indigenous Chinese cultural elements into modern design education.

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Paper Contribution to Related Field of Study

This paper examines the practical approaches to integrating traditional Chinese culture into modern product design education by developing and designing teaching modules and providing practical teaching tools applicable to various contexts.

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