




# From Hi-Tech to Hi-Touch: A Global Perspective of Design Education and Practice

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## 1. Introduction

Facing the change in and impact of globalization, the question of how to apply design thinking to improve people's lives, from hi-tech to hi-touch, is becoming increasingly vital during this disquieting era. This Special Issue aimed to discuss the development, application, potential and boundaries of design education and design practice from a cross-cultural perspective [1]. Thus, we welcomed both theoretical research via a careful literature review with various design scopes and empirical studies of significant design cases.

Potential topics included, but were not limited to:

- Frameworks for design education that foster creativity and critical thinking;
- Significant teaching and learning sequences of design;
- Theoretics and practice within design education approaches;
- Design education across disciplines;
- Teacher training for design;
- Design implementation for cross-culture contexts;
- Research on creative design strategies;
- Design for placemaking;
- Special topics in design case studies.

## 2. Results and Discussion

The Special Issue entitled "From Hi-Tech to Hi-Touch: A Global Perspective of Design Education and Practice" published in *Education Sciences* comprises eleven scholarly papers classified into four categories. The first category includes three papers that examine the practical application of design theory in different contexts. The second category comprises three papers exploring the role of technology in design education. The third category includes three papers that analyze the intersection of design education and cross-cultural communication. The final category encompasses two papers investigating the application of design education in diverse fields.

Collectively, these papers provide a comprehensive overview of the current state of design education. They also highlight the diversity of approaches and practices within the field. By offering valuable insights into the challenges and opportunities present in various contexts, they demonstrate the significance of design education as a facilitator of creativity, innovation and cross-disciplinary collaboration.

### 2.1. From Design Theory to Design Practice

The first category of articles contains three papers which examine the relationship between design theory and design practice. These papers investigate how design theories



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can be applied to practical design solutions. They stress the significance of design thinking and the problem-solving role of designers. They also highlight the need for design educators to teach students how to apply design theories to real-world scenarios. These papers offer valuable insights into how design theory can be integrated into design education and how it can be leveraged to generate effective design solutions.

#### 2.1.1. Contribution 1: From Data to Wisdom: A Case Study of OPOP Model

In this article, the OPOP model [2] based on the DIKW process (Data, Information, Knowledge, and Wisdom) was proposed. This model provided a framework for turning data into actionable insights. In the paper, a case study that applies the OPOP model to identify and address issues related to academic resource accessibility in a university context was presented. By using the model, in the study, the researchers were able to identify patterns in the data, which led to a better understanding of the problem and a strategic plan for improvement. The paper concluded by discussing the potential of the OPOP model for data-driven decision making and emphasized the importance of integrating data analysis with human-centered design principles.

#### 2.1.2. Contribution 2: From Theory to Practice: An Adaptive Development of Design Education

In this article, an adaptive design education model to enhance students' readiness for real-world design practice was presented [3]. To develop the model, the authors synthesized the theoretical foundations of design education with insights from interviews with design practitioners. The paper also covered the implementation of the model in a design education program, its evaluation through student feedback and assessment, and its continuous refinement in response to feedback from students and practitioners. The authors highlighted the potential of adaptive design education to more effectively align with the needs of the design industry and prepare students for successful design careers. They also emphasized the significance of continuous evaluation and adaptation to ensure that design education remains relevant and effective in a rapidly changing context.

#### 2.1.3. Contribution 11: Comparison of Four Universities on Both Sides of the Taiwan Strait Regarding the Cognitive Differences in the Transition from STEM to STEAM in Design Education

In this study, the aim was to assess perceptions of the STEAM model in design education among respondents from four universities on both sides of the Taiwan Strait [4]. The findings demonstrated that respondents' restricted global outlook is attributable to their exposure to local universities. Further analysis was warranted to ascertain the connection between art courses and STEM. To optimize the potential of STEAM in design education, educators and researchers must have a deep understanding of the essence and connotations of STEAM, while students should prioritize the acquisition of knowledge and skills relevant to 21st-century design through STEAM courses. The continuous assessment and refinement of STEAM in design education is also indispensable.

### 2.2. Education in Cross-Cultural Design

The second category of articles comprises three papers that center on education within the realm of cross-cultural design. These papers explore the challenges and opportunities of teaching design in multicultural contexts. They highlight the importance of cultural sensitivity in design education and provide insights into how design educators can create inclusive learning environments. The papers also examine how design education can advance intercultural understanding and collaboration.

#### 2.2.1. Contribution 3: From Cultural Heritage Preservation to Art Craft Education: A Study on Taiwan Traditional Lacquerware Art Preservation and Training

The authors investigated the current state of traditional lacquerware art preservation and training in Taiwan [5]. Using a combination of a literature review, expert interviews and

field visits, in this study, several challenges for preservation and training were identified, including limited resources, difficulty transmitting traditional techniques, and declining interest in traditional arts and crafts. To address these challenges, the authors advocated a shift in focus from cultural heritage preservation to art craft education, suggesting the incorporation of lacquerware art into art and design education curricula. Specifically, they proposed the establishment of a national lacquerware art center, the development of marketing strategies, and the creation of a certification system for lacquerware products. The authors emphasized the importance of preserving traditional lacquerware art and the need for a shift in focus to ensure its survival. This study provided valuable insights and suggestions for preserving and cultivating traditional lacquerware art in Taiwan.

#### 2.2.2. Contribution 5: Education in Cultural Heritage: A Case Study of Redesigning Atayal Weaving Loom

In this article, the authors examined the significance of education in cultural heritage preservation through a case study of the participatory design of the Atayal weaving loom in Taiwan [6]. In the study, it was identified that the participatory design process improved the functionality of the weaving loom and provided a platform for the transmission of traditional weaving knowledge and skills to younger generations. The authors proposed that education in cultural heritage should go beyond the preservation of artifacts and include the transmission of traditional knowledge and skills. The findings of this study provided valuable insights into the role of education in cultural heritage preservation and the potential of participatory design as a tool for preserving cultural heritage.

#### 2.2.3. Contribution 9: A Teaching Model of Cultural and Creative Design Based on the Philosophy of the Book of Changes

In this article, a teaching model for cultural and creative design based on the philosophy of the *Book of Changes* was proposed [7]. In the paper, it was argued that the *Book of Changes* could provide a valuable framework for teaching, as its philosophy emphasizes the importance of balance, harmony and adaptability. In the article, a course developed using this teaching model that integrates traditional Chinese cultural elements into modern design practices was presented. In addition, the effectiveness of the course was evaluated, and the impact of the *Book of Changes* philosophy on the students' design thinking and creative processes was discussed. The paper concluded that the teaching model has the potential to enhance students' cultural awareness and creative abilities, and the model was recommended as a valuable addition to design education.

### 2.3. Informatic Communication Technology in Design

The third category of articles contains three papers examining the use of informatic communication technology in design education. These papers explore how technology can be used to enhance the design learning experience. They highlight the potential of new technologies, such as virtual and augmented reality, to provide students with new ways to explore design concepts and develop essential skills. The papers also examine how technology can be used to create authentic learning experiences for students.

The way ICT (Information and Communication Technology) is used in design education is becoming a design trend. In modern design, ICT is a useful support tool, as solutions can be created by using ICT effectively and efficiently. Using computer-based systems, such as virtual systems and computer simulations, ICT could be used to record ideas that clarify a task, generate and manage digital solutions in response to challenges arising from learning activities, clarify the creative intention, and respond to a need. This could make a design more powerful, effective and efficient.

### 2.3.1. Contribution 4: A Study on the Effects of Digital Learning Sheet Design Strategy on the Learning Motivation and Learning Outcomes of Museum Exhibition Visitors

The authors examined the relationship between digital learning sheet design and its effect on museum visitor motivation and learning outcomes [8]. In the study, museum visitors were divided into two groups. One received traditional learning sheets, while the other received digital ones with different design strategies. The findings showed that digital learning sheets with multimedia elements, interactivity, personalization and clear structures improved visitors' motivation and learning outcomes. By suggesting that museums incorporate these design strategies into their digital learning sheets to enhance visitor learning experiences, the findings of the study provided invaluable insights into the design of digital learning sheets and their impact on visitors' learning.

### 2.3.2. Contribution 6: The Design and Implementation of an Innovative Course on the Creation of Cultural Landscape Images: A Case Study of Dalin Township in Taiwan

In this article, a case study of an innovative course that aims to promote the creation of cultural landscape images in Dalin Township, Taiwan, was presented [9]. The course combined both theoretical and practical components, using diverse teaching methods to engage students and promote their participation. The course content, its teaching methods and the resulting outcomes for students were presented in the paper. It was concluded that the course successfully promoted the creation of cultural landscape images and enhanced students' understanding of the local cultural heritage. In the paper, it was proposed that the course could serve as a model for similar educational initiatives which have the aim of preserving cultural heritage and developing community.

### 2.3.3. Contribution 10: From Digital Collection to Open Access: A Preliminary Study on the Use of Digital Models of Local Culture

In the past, cultural content was protected passively. The emergence of new technologies such as digital printing and open-source sharing have provided new opportunities for cultural preservation [10]. This study focused on the Taitung region and created an open-source database consisting of 60 digital models and related materials. By sharing these resources openly, the aim of the study was to encourage wider use. The survey results demonstrated that models designed in parts that are easy to print and display are more useful for promotion and application. The aim was to develop 3D model databases for every township, providing people with free access to digital models of their local culture. This open-source approach enabled anyone to remotely access and print local cultural content in 3D, especially during the COVID-19 pandemic. The localized 3D model databases were expected to promote cultural improvement and innovation at the local level.

## 2.4. Other Fields

The last group of articles includes two papers that investigate the role of design education in various domains, such as in the fields of engineering and healthcare. They demonstrate how design thinking could address intricate problems in these fields and emphasize the importance of interdisciplinary collaboration.

### 2.4.1. Contribution 7: The Transformation and Application of Virtual and Reality in Creative Teaching: A New Interpretation of the Triadic Ballet

In this article, the use of virtual and augmented reality in creative teaching was explored, using *Triadic Ballet* [11] as a case study. A course where students used virtual reality technology to generate 3D models of the ballet's costumes and stage setup, which were then brought to life through the use of augmented reality, was outlined in the paper. The educational implications of this approach were examined, highlighting its potential to enhance students' creativity and critical thinking abilities. An in-depth evaluation of the students' work was also provided in the article, demonstrating the effectiveness of the approach in promoting interdisciplinary collaboration and innovation. Overall, the authors

claimed that the use of virtual and augmented reality could transform creative teaching and provide new opportunities for artistic expression and exploration.

#### 2.4.2. Contribution 8: The Global Design Ranking: A Case Study of Design Awards Phenomenon

In this article, the phenomenon of design awards and their impact on the design industry were explored [12]. A case study of the Global Design Ranking system, which ranks design awards based on their level of influence and prestige, was presented. The methodology used to create the ranking was presented, and the data collected were analyzed to explore the trends and patterns in the design awards landscape. In addition, the potential impact of the ranking on the design industry was addressed in the paper, including its ability to shape the perception of design and influence the behavior of designers and design firms. Finally, avenues for future research in this area were suggested, such as the exploration of the relationship between design awards and design education.

### 3. Conclusions

The Special Issue published by *Education Sciences* is a significant contribution to the field of design education. The issue comprises a collection of articles that explore various aspects of design education, including the pedagogical approaches, the use of technology, and the role of design in addressing social and environmental challenges. This editorial paper provides a comprehensive review of the Special Issue and highlights the key themes that have emerged from the articles. The Special Issue offers invaluable insights into the latest pedagogical approaches, technologies and trends in the field of design education. It provides a rich and nuanced view of the challenges and opportunities faced by design educators today. It is an invaluable resource for researchers, educators and practitioners in the field of design education and is highly recommended.

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