

Exploring the resonance points of Chinese and Thai cultural education from the perspective of aesthetics: An empirical analysis based on the online learning behavior of Thai college students

Yize Dong ¹, Xiwen Deng ²

¹ Faculty of Education Sichuan Normal University, Chengdu 610011, China;

² School of Marxism of Sichuan Normal University, Chengdu, 610011, China.

Abstract

Driven by globalization and the Belt and Road Initiative, cultural and educational exchanges between China and Thailand are becoming increasingly close, but existing studies generally ignore the subjective experience of Thai students in the process of cultural acceptance. Based on the theory of aesthetic reception, combined with educational data mining, focus group interviews and online field observations, this paper systematically analyzes the mechanism of cultural resonance formed by Thai college students in the process of online learning of Chinese culture. Through methods such as K-means clustering, confirmatory factor analysis (CFA), and semantic network analysis, the study identified four resonance points: symbolic identification, situational experience, value identification, and interactive generation, and constructed a closed-loop model of "expectation horizon-aesthetic experience-resonance effect". The results show that accurately matching learners' expectations, enhancing multimodal aesthetic experience, building a dynamic feedback mechanism, and encouraging constructive interaction are the key paths to enhance cross-cultural learning resonance. The study enriches the theory of cross-cultural education and educational aesthetics, and provides an operational reference framework for the design and practice of online courses on Sino-Thai culture.

Keywords

Reception Theory; Sino-Thai Cultural Education; Online Learning Behavior; Cultural Resonance.

1. Introduction

Against the backdrop of the rapid advancement of globalization and the in-depth implementation of the Belt and Road Initiative, exchanges and cooperation between China and Thailand in multiple fields such as politics, economy, and culture have continued to deepen, and the internationalization of education has become an important carrier for cultural exchange between the two countries. However, existing research and practice often focus on the static design of course content and the transmission of cultural knowledge, ignoring the diversity and initiative of Thai students' subjective experience in the process of acceptance, making it difficult to truly stimulate students' learning enthusiasm and cultural identity^[1].

The theory of reception aesthetics emphasizes the subject status and psychological expectations of the audience in the process of meaning construction. Its two core concepts of "expectation horizon" and "aesthetic experience" provide a new perspective for in-depth exploration of cognitive and emotional mechanisms in cross-cultural education^[2]. Therefore, introducing reception aesthetics into the study of Sino-Thai cultural education can not only

systematically reveal the pre-set expectations and aesthetic gap of Thai students on Chinese cultural knowledge on the Internet platform, but also provide theoretical support for course design, teaching methods, and platform optimization.

Given that traditional questionnaire survey methods are difficult to fully capture learners' dynamic experiences, this study selected large-scale online learning platform data and qualitative network field observations, combined with educational data mining and learning log analysis, through focus group interviews and semantic network analysis, to empirically explore the core "resonance points" in Sino-Thai cultural education. It aims to fill the gap in the field of cross-cultural education where there is insufficient attention to the subjectivity of the audience, provide strategic guidance for the design and practice of Sino-Thai cultural online courses, and build a referenceable evaluation and optimization framework for online education cooperation between transnational universities.

2. Introduction to the Theory of Reception Aesthetics and Its Application in Sino-Thai Cultural Education

The theory of reception aesthetics constructs a framework for the interactive generation of meaning between "expectation horizon" and "aesthetic experience". In the field of education, students are the "audience". Their learning motivation and aesthetic expectations construct the initial horizon through the preset knowledge background and cultural experience. When the learning materials touch or exceed their expectations, learners will have aesthetic experience, thus resonating with the content at the cognitive and emotional levels^[3]. When applying this theory to the study of Sino-Thai cultural education, we need to focus on the following points:

First, the cultural blunting and reconstruction of the expectation horizon. Thai students' expectations of traditional Chinese culture are mostly based on limited media descriptions and existing impressions. Teaching design should first lower their cognitive threshold through cultural comparison, background interpretation and introduction of Thai local cultural elements, and help learners reconstruct their expectation horizon of Chinese culture in a familiar cultural context;

Second, the multimodal presentation of aesthetic experience. Single text or static pictures are difficult to stimulate aesthetic immersion. It is necessary to make full use of multiple media means such as video, animation, virtual reality, interactive micro-classes, etc., and integrate situational simulation and role-playing into the design, so that students can generate deep aesthetic experience in real perception;

Third, dynamic feedback and horizon fusion mechanism. Teaching is not only about content output, but also requires building a closed loop of "expectation-experience-adjustment-re-experience". Through visual analysis of learning logs, instant interaction in online forums, and timely personalized feedback from teachers, real-time capture and dynamic intervention of learners' expectation deviations and experience feedback can be achieved, thereby promoting the continuous integration and resonance of Chinese and Thai cultural perspectives in repeated interactions.

3. Research Design

3.1. Big Data Mining of Learning Behavior Logs

The behavior logs in the unified online learning platform of colleges and universities were systematically mined. The collected data included access timestamps, video playback records, knowledge point annotation times, and the length and frequency of text posts and replies in the discussion area. The research team applied educational data mining and learning analysis technology to divide learners into two categories: "high resonance" and "low resonance"

through the K-means clustering method. At the same time, the association rule mining algorithm was used to perform pattern recognition on the user's behavior sequence to capture the common characteristics of key indicators such as video replay, knowledge point annotation, and discussion area activity, laying a solid foundation for subsequent quantitative analysis^[4].

3.2. Focus Group In-depth Interviews

Based on the clustering results of the first stage, typical learners were selected for focus group in-depth interviews. Each interview group contained 6 to 8 members, divided into two categories and four groups, corresponding to the high resonance and low resonance groups respectively. The interview outline revolved around three dimensions: learning expectations (pre-set cultural symbols and teaching methods), aesthetic experience (immersion, emotional response), and emotional belonging (value identification and internalization willingness). During the interview, the researchers combined semi-structured questions with open discussions to encourage participants to share their true feelings and experiences of online learning. After all the interview recordings were transcribed into text, they were double-coded using NVivo software, and the core topics and cognitive frameworks were extracted through thematic analysis to ensure the richness and reliability of qualitative data^[5].

3.3. Online field observation

Online field observation continuously monitored online live classes, forum groups, and group collaboration spaces as non-participant observers. The researchers recorded the details of the live broadcast, the use of emojis, the number of real-time questions and answers, and the distribution of speeches and interactive responses in the group collaboration session. At the same time, the texts with subjective evaluation in the discussion area were collected and sorted, and the semantic network analysis method was used to construct keyword nodes and correlation matrices, revealing the differences in discourse structure and emotional tendencies among different learning groups, providing a micro perspective for understanding the aesthetic acceptance mechanism.

3.4. Data fusion and verification

Finally, in the data fusion and verification stage, the quantitative and qualitative results obtained in the three stages were cross-mapped and comprehensively analyzed. In terms of quantitative analysis, confirmatory factor analysis (CFA) was used to test the model's goodness of fit and structural validity^[6]; in terms of qualitative analysis, the themes and patterns obtained from the focus group interviews and semantic network observations were compared, and ultimately a theoretical closed loop of "expectation perspective—esthetic experience—interactive generation" was formed, providing a reliable basis for the subsequent summary of resonance points.

4. Research Results

Based on the method design in the third part, this study presents data from four dimensions: quantitative clustering, confirmatory factor analysis (CFA), focus group interviews, semantic network analysis, and online field observation:

4.1. Cluster analysis and description of behavioral characteristics

After performing K-means clustering ($K=2$) on the log data of 372 learners, a "high resonance" group ($n=106$, accounting for 28.5%) and a "low resonance" group ($n=266$, accounting for 71.5%) were obtained. The average silhouette coefficient of the clustering was 0.42, indicating that the clustering results had moderate differentiation.

The average video viewing completion rate of the "high resonance" group was 78.3%, significantly higher than the 43.7% of the "low resonance" group ($t=8.13$, $p<0.001$). In addition,

the former was more active than the latter (number of annotations $M=6.5$ times; average post length 121 words) in terms of the number of knowledge point annotations ($M=15.2$ times) and the length of discussion area posts (average 243 words per post).

4.2. Confirmatory Factor Analysis (CFA)

The CFA model was tested in AMOS, and the results showed: $\chi^2/df=2.35$, CFI=0.93, TLI=0.91, RMSEA=0.058, SRMR=0.045, and the indicators showed good fit and structural validity.

4.3. Focus Group Interview and Semantic Network Analysis

The "high resonance" group and the "low resonance" group held a total of 4 focus groups (6-8 people in each group), and a total of about 12 hours of interview text was recorded. After NVivo coding, the core themes were refined: learning expectation preference (symbol clarity, cultural familiarity), aesthetic experience expectation (immersive perception, interactive feedback) and value identification tendency (emotional projection, case association).

The semantic network construction shows that in the discussion of the "high resonance" group, the degree centrality of the four nodes "Spring Festival", "Water Lantern Festival", "Forbidden City" and "Family and Country Feelings" is the highest, with a network density of 0.23; while the corresponding density of the "low resonance" group is only 0.12, indicating that the semantic association between the subject words in the high resonance group is closer.

4.4. Network field observation indicators

In the live classroom, the average frequency of barrages sent by "high resonance" learners is 45 times/hour, and the proportion of emoticons in the barrages reaches 38%; the barrage frequency and emoticon proportion of the "low resonance" group are 18 times/hour and 12%, respectively, and both are significantly different ($p<0.001$).

In the role-playing and group collaboration sessions, the average participation rate of the high resonance group is 62%, the average number of speeches per person is 5.3 times, and the average number of interactive responses per person is 4.1 times; while the participation rate and the average number of speeches and responses per person in the low resonance group are 23%, 1.8 times and 1.2 times, respectively.

In summary, the cross-validation of multi-source data not only quantified the differences in resonance from the behavioral statistics level, but also clarified the driving role of "expectation perspective" on learning motivation, the promoting role of "multimodal aesthetic experience" on the depth of participation, and the key influence of "value narrative and interactive generation" on emotional identification and knowledge internalization through a combination of quantitative and qualitative methods.

5. Summary of the "Resonance Points" of Sino-Thai Cultural Education

5.1. Resonance of Symbolic Identity

The study found that the cross-cultural cognitive connection of Thai students can be effectively triggered through the carefully designed comparative teaching of cultural symbols. Taking the Chinese Lunar New Year and the Thai Loy Krathong Festival as the starting point, the teaching content not only presents the differences in time, ritual and symbolic meaning of the two countries' festivals, but also deeply analyzes the social values and emotional connotations behind them. While understanding the differences between pasting Spring Festival couplets and setting off firecrackers during the Spring Festival and setting off river lanterns and praying for peace during the Loy Krathong Festival, students also project their own festival experiences into external cultural symbols, achieving emotional fit at the symbolic level. At the same time, with the help of a variety of specific cases such as local food and art crafts, the Chinese cultural symbols are mapped with the local life experience in Thailand, so that students can quickly

locate and perceive the unique charm of Chinese traditional culture in a familiar reference system. Combined with the visual presentation of short videos, dynamic charts and interactive posters, the perceptibility and memory depth of symbolic information are effectively enhanced, thereby achieving a high aesthetic resonance effect at the symbolic identity level. This study found that the cross-cultural cognitive connection of Thai students can be effectively triggered through the carefully designed comparative teaching of cultural symbols. Taking the Chinese Lunar New Year and Thailand's Loy Krathong Festival as the starting point, the teaching content not only presents the differences in time, ritual and symbolic meaning of the two countries' festivals, but also deeply analyzes the social values and emotional connotations behind them. While understanding the differences between pasting Spring Festival couplets and setting off firecrackers during the Spring Festival and setting off river lanterns and praying for peace during the Loy Krathong Festival, students also project their own festival experience into external cultural symbols, achieving emotional fit at the symbolic level. At the same time, with the help of various specific cases such as local food and art crafts, Chinese cultural symbols are mapped with local Thai life experience, so that students can quickly locate and perceive the unique charm of Chinese traditional culture in a familiar reference system. Combining the visualization of short videos, dynamic charts and interactive posters, the perceptibility and memory depth of symbolic information are effectively enhanced, thereby achieving a high aesthetic resonance effect at the level of symbolic identification.

5.2. Situational experience resonance

Through a variety of means such as virtual guided tours, interactive micro-classes and role-playing, historical and cultural landmarks and folk experience scenes are reproduced in an immersive way in online classes. Students not only "walk" through the beacon towers of the Great Wall or the Imperial Garden of the Forbidden City on the screen, but also incarnate ancient messengers in role-playing tasks and complete simulated actions such as "giving gifts" and "sacrificing sacrifices". This experience mode with both realism and action significantly improves aesthetic participation. At the same time, multimodal interactive design (including 3D animation, surround sound and real-time task feedback) enables students' auditory, visual and operational perceptions to resonate and coordinate, and continuously strengthens situational memory through embedded tests and group collaboration, so that learners can form a deeper cultural understanding and aesthetic perception after repeated immersion. In the study, historical and cultural landmarks and folk experience scenes were reproduced in an immersive way in online classrooms through a variety of means such as virtual guided tours, interactive micro-classes and role-playing. Students not only "walk" through the beacon towers of the Great Wall or the Imperial Garden of the Forbidden City on the screen, but also incarnate ancient messengers in role-playing tasks and complete simulated actions such as "giving gifts" and "sacrificing sacrifices". This experience mode with both realism and action significantly improves aesthetic participation. At the same time, the multimodal interactive design (including 3D animation, surround sound and real-time task feedback) makes the students' auditory, visual and operational perceptions resonate in a coordinated manner, and continuously strengthens the situational memory through embedded tests and group collaboration, so that learners can form a deeper cultural understanding and aesthetic perception after repeated immersion.

5.3. Value Recognition Resonance

The course narrative design of the study introduces representative historical figures' biographies, stories of family and country feelings, and cases of the "harmony between man and nature" thought, guiding students to think about the deep connection between individuals and collectives, and between man and nature. For example, the story of the cultural exchange experience of Zhang Daqian, an envoy of the Ming Dynasty, traveling to Thailand not only shows

the history of friendly exchanges between China and Thailand, but also reflects the responsibility of family and country and cultural confidence, prompting students to project their own emotions in the same frequency with the values of the story. In addition, common topics in contemporary social practice in China and Thailand (such as energy conservation and environmental protection, community construction) are selected as case materials to combine universal values with cultural background, and then achieve emotional touch and internalization at the level of value recognition, which enhances learners' recognition of Chinese culture and their willingness to take positive actions. In the course narrative design of this study, by introducing representative biographies of historical figures, stories of family and country feelings, and cases of the idea of "harmony between man and nature", students are guided to think about the deep connection between individuals and collectives, and between man and nature. For example, the story of the cultural exchange experience of Zhang Daqian, an envoy of the Ming Dynasty, in Thailand not only shows the history of friendly exchanges between China and Thailand, but also reflects the responsibility of family and country and cultural confidence, prompting students to project their own emotions in the same frequency with the values of the story. In addition, common topics in contemporary social practice in China and Thailand (such as energy conservation and environmental protection, community construction) are selected as case materials to combine universal values with cultural background, and then achieve emotional contact and internalization at the level of value recognition, which enhances learners' recognition of Chinese culture and their willingness to take positive actions.

5.4. Interaction generates resonance

The study designed a group cultural and creative project, encouraging students to work together to produce cultural posters, create short videos or plan online exhibitions. The whole process includes four links: theme selection, data collection, creative expression and interactive display. In this process, students share their own aesthetic experience and cultural understanding, which generates collisions and mutual inspiration from multiple perspectives and forms a dynamic group meaning construction. In addition, online forums and social feedback systems provide learners with a continuous communication space. The instant comments and encouraging feedback from teachers and peers effectively stimulate learners' enthusiasm for participation, so that the interaction not only stays at information exchange, but also transforms into emotional support and driving learning improvement, and finally completes a higher level of aesthetic resonance and cultural internalization in the process of collaborative generation. This study designed a group cultural and creative project to encourage students to work together to produce cultural posters, create short videos or plan online exhibitions. The whole process includes four links: theme selection, data collection, creative expression and interactive display. In this process, students share their own aesthetic experience and cultural understanding, which generates collisions and mutual inspirations from multiple perspectives and forms a dynamic group meaning construction. In addition, online forums and social feedback systems provide learners with a continuous communication space. The instant comments and encouraging feedback from teachers and peers effectively stimulate learners' enthusiasm for participation, so that the interaction not only stays at information exchange, but also transforms into emotional support and driving learning improvement, and finally completes a higher level of aesthetic resonance and cultural internalization in the process of collaborative generation.

6. Conclusion

Based on the perspective of aesthetics, this study combines educational data mining, focus group interviews and online field observations to systematically reveal the generation

mechanism of the four resonance points of symbolic identification, situational experience, value identification and interaction generation in Sino-Thai cultural education for the first time, and verifies the feasibility of the closed-loop model of "expectation perspective-aesthetic experience-resonance effect" in cross-cultural education. The study shows that accurately matching learners' expectation perspectives, using multimodality to enhance aesthetic experience, building a dynamic feedback mechanism and integrating constructive interaction are the key paths to achieve high-quality cross-cultural learning resonance. The research conclusions not only enrich the theories of educational aesthetics and cross-cultural education, but also provide practical guidance for the design, teaching innovation and platform optimization of Sino-Thai cultural online courses.

7. Discussion

Although this study has made breakthroughs in method innovation and theoretical application, there are still limitations: First, the research data mainly comes from the online platform of a single university. In the future, it can be expanded to a large-scale sample of multiple schools and cross-platforms to improve the external validity of the conclusions; second, the technical means of virtual situation experience in this study are mainly concentrated on two-dimensional videos and interactive courseware, and the more immersive VR/AR technology has not been fully utilized. Subsequent research can introduce more advanced immersive interactions to examine its effect on improving aesthetic experience and resonance; third, this study focuses on undergraduate students, and has not yet verified the applicability of vocational college students or youth groups. Future research can be expanded to different educational stages and age groups to explore the universal laws and differential boundaries of the cross-cultural educational resonance mechanism under the perspective of aesthetic acceptance. In addition, the study can also combine physiological indicators (such as pupil changes, skin galvanic response) with neuroscience methods to further deepen the cognitive understanding of the aesthetic experience process with multimodal data.

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