

A Collaborative Innovation Model of “Research-Creation-Production” for the Re-design of Yungang Grottoes Decorative Patterns—An Exploration and Practice Based in the Cultural & Creative Products Institute of Shenzhen Polytechnic University

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Cultural creativity is the best medium that connects cultural heritage with the cultural industry. By following the path of the integration of industry and education and the confluence of science and education, drawing on the decorative art of Yungang Grottoes, and utilizing porcelain art and other diversified forms of cultural and creative derivatives for contemporary expression, the Cultural & Creative Products Institute of Shenzhen Polytechnic University deepens the collaborative innovation and education model in vocational education, and drives the creative transformation and innovative development of excellent traditional Chinese culture.

Keywords: Yungang Grottoes, cultural creativity, creative transformation

Yungang Grottoes are renowned as one of the “Three Major Grottoes”, together with the Mogao Caves in Dunhuang and the Longmen Grottoes in Luoyang. They are also one of most precious historical and cultural heritages of humans. As a royal endeavor of the Northern Wei Dynasty, Yungang Grottoes are impressive in scale and grandeur, serving as a cultural and artistic monument that reflects cultural integration, openness, and freedom, as well as the fusion of Buddhist, Chinese, and nomadic civilizations (Wang, 2021, p. 243), exemplifying a vibrant spirit and an inclusive cultural ethos (Liu, 2019, p. 160), and holding significant academic and historical value in the exploration and organization of Yungang Grottoes art. To systematically catalogue the decorative art of Yungang Grottoes, a research team from Shandong University of Art & Design, as part of a major art project funded by the National Social Science Fund called “Examination of the Traditional Chinese Creation Arts System and Design Literature”, systematically gathered decorative patterns from Yungang Grottoes, resulting in a series of strikingly colorful, imposing, and delicately crafted motifs that highlighted the unique beauty of traditional Chinese decorative art with immense artistic value. The contemporary transformation of excellent traditional

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Chinese culture is a pressing topic of our time. Finding ways to organically blend traditional culture with modern design for the benefit of contemporary living is an important direction for the inheritance and innovation of excellent Chinese traditional culture.

In recent years, General Secretary Xi Jinping has made numerous statements and requirements regarding the “double innovation” of traditional Chinese culture, emphasizing the need for a “balanced approach that aligns with new practice and contemporary demands” and the importance of “the creative transformation and innovative development of traditional culture, ensuring that it connected and blended with contemporary cultural contexts to jointly fulfill the era’s task of cultural enrichment” (2014). To fully uncover the modern vitality of the Yungang Grottoes decorative patterns, while preserving the splendid artistic style of this cultural treasure and incorporating them into everyday consumer goods to realize the synergy of traditional Chinese art and modern design products, the Cultural & Creative Products Institute of Shenzhen Polytechnic University worked with Yungang Grottoes project team from Shandong University of Art & Design and Stechcol Ceramic Crafts Development (Shenzhen) Co., Ltd. to initiate a project on the “Design of Creative Derivatives Inspired by the Yungang Grottoes Decorative Patterns”. Guided by the philosophy of “designing home banquet porcelain to national banquet standards”, the project applied the highest artistic creation and strictest R&D standards to design and develop six ceramic works rich in traditional cultural connotations and aesthetic qualities, along with a variety of derivatives, such as silk scarves and cushions.

Establishing a Tripartite Collaborative Framework for “Research-Creation-Production”

The Cultural & Creative Products Institute of Shenzhen Polytechnic University is an institution specializing in the research and design of cultural and creative products, established by Shenzhen Polytechnic University in line with Shenzhen’s identity as a “Design Capital”. Following the guideline of the integration of industry and education and the confluence of science and education, the institute partnered with government agencies, academic institutions, and enterprises to support and prosper the cultural creative sector. In this project, the institute joined hands with Shandong University of Art & Design and Stechcol Ceramic Crafts Development (Shenzhen) Co., Ltd. to create a three-party cooperation platform that capitalized on each party’s unique strengths in research (Shandong University of Art & Design), creation (the Cultural & Creative Products Institute of Shenzhen Polytechnic University), and production (Stechcol Ceramic Crafts), forming a structure that enables each to leverage their strengths for mutual benefit, and laying a solid foundation of teamwork, academic support, and technical backing for the successful advancement of the project.

Building an In-house Project Team for Collaborative Research and Creation

The Cultural & Creative Products Institute of Shenzhen Polytechnic University features 13 research institutes and centers, built upon the foundation of three secondary colleges focusing on the field of creative design. These institutes and centers cover most of the cultural and creative industries in Shenzhen, which achieves a high degree of alignment with the local creative economy, while breaking down barriers between colleges to provide excellent channels for cross-college and cross-disciplinary collaboration. For this initiative, the institute has assembled a project team of 14 faculty members from different departments, including the College of Art and Design and the College of Communication Engineering. What’s more, 32 students from different departments and disciplines were also enrolled in the R&D of the project, working in eight project teams and implementing their work separately. Each faculty member had distinct roles, responsible for aspects such as data

organization, product design, and pattern creation, to ensure that the project advanced steadily and orderly.

Synergistically Advancing the “Research-Creation-Production” Model Through the “Five-Step Progression” Strategy

Based on the project’s final timeline, the project team devised a “Five-Step Progression” work process (Table 1), where each work node was interlinked to complete the whole process from research and innovation to product creation and exhibition.

Table 1

“Five-Step Progression” Work Process

“Five-Step Progression” Work Process	
I. Organize a design team	1. Data collection and research; 2. Discussion of plans
II. Investigate on the design and produce an initial draft	1. Field visits to Yungang; 2. Confirmation of vessel design; 3. The design and proofing of ceramic prototypes; 4. Small batch production of prototypes; 5. The initial draft of decorative pattern appliques
III. Advance the design plans	Completion of 8 project teams’ preliminary design plans
IV. Refine the design plans and complete the appliqué and proofing of patterns	Refinement, perfection and finalization of the design plans
V. Deliver the outcome	1. Final production of proofed prototype; 2. Shooting and editing of the design catalog and video; 3. Exhibition and display

Stage 1: Initial field survey. The project team made multiple field trips to Yungang Grottoes, gathering extensive photographic and documentary materials. They discussed with the academic team from Shandong University of Art & Design and researchers from Yungang Grottoes regarding the cultural background, artistic features, vessel forms, and color characteristics, etc. necessary for the contemporary transformation of Yungang Grottoes decorative patterns into derivatives, to lay a solid foundation for perfecting the design plans.

Stage 2: Vessel design is an important cornerstone for project advancement. As required by the project, the design of the ceramic vessels inspired by Yungang Grottoes must reflect the grandeur and historical depth of the Northern Wei Dynasty’s royal Buddhist shrines represented by Yungang Grottoes art, while also aligning with contemporary consumers’ aesthetic and practical needs. This contrasted sharply with the currently popular fine and delicate home porcelain vessels in the market. To create a series of ceramic vessels that showcased the unique northern character and regal grandeur, while catering to various functions such as gifting, exhibition, and utilization, the design team examined extensive literature and images, and drew inspiration from historical remains. What’s more, they also visited Chaozhou three times to discuss with Stechcol’s artisans on the design details, finalizing the design concepts of “fortitude” and “dignity”, taking into account “composition”, “details”, and “capacity” and finally achieving a distinctive artistic allure.

Stage 3: The pattern design imbued the products with a holistic soul. When applying the Yungang Grottoes decorative patterns to ceramics and derivatives, it was essential to highlight the unique Buddhist cultural elements of Yungang Grottoes, and full consider religious taboos and public aesthetic preferences. How to leverage pattern design to fully present the charm of Yungang? The eight design teams, based on prior surveys and discussions, guided students to continuously refine their works and finally produced six ceramic design plans and two derivative product design plans. The six ceramic design plans were “Reunion”, “Auspicious Yungang: Fortunate

Lotus”, “Endless Life”, “Passing Through the Thousand Lotuses”, “Eastern Charm and Western Elegance”, and “Joy of Yungang”, while the two cultural and creative derivative plans were “Imagery of Yungang”, “Coloration of ‘Zen’” and “Overlays of ‘Zen’”. The overall design plans creatively reinterpreted elements that were extracted from grotto patterns brimming with the meanings of a beautiful life, such as lotus, reunion, the Tree of Life and music, thus reconstructing traditional patterns to achieve a seamless bond of tradition and modernity. In terms of color design, typical Yungang colors, including gold, silver, ochre red, blue-green, and rocky yellow, were matched, to exhibit the majestic and lavish royal aura, along with the profound cultural heritage found in Yungang Grottoes art.



Figure 1. Vessel design.





Figure 2. Ceramic pattern design.

Stage 4: The presentation of products was critical to the project’s success. The project’s corporate partner, Stechcol Ceramic Crafts Development (Shenzhen) Co., Ltd., offered robust technical support for product manufacturing. As a leading ceramics enterprise in Shenzhen, Stechcol has been committed to examining the development of the intangible cultural heritage “Chao Cai” and taken the inheritance of Chinese ceramic culture, the promotion of Chinese aesthetics, and the creation of a world-class ceramic brand as its mission. It was the only ceramics manufacturer in Guangdong Province to supply products for the Golden Dinning Hall of the Great Hall of the People, and export products to over 100 countries and regions. Upholding a culture-led approach has been a key to Stechcol’s maintenance of high-quality craftsmanship and design innovation over the years and also a motive for its pursuit of collaborative research and innovation with academic institutions. To achieve the seamless integration of pattern and vessel designs, while preserving the integrity of the patterns during firing, all project team visited Stechcol and engaged in numerous discussions with Stechcol’s artisans, to fine-tune the patterns. Through preliminary proofing and color matching, they kept improving the designs, resulting in an impressive artistic presentation of the ceramic works in this project.

Stage 5: The innovative re-design and presentation of Yungang Grottoes decorative patterns in the Greater Bay Area. Upon the completion of the project, the outcomes of “Design of Creative Derivatives Inspired by the Yungang Grottoes Decorative Patterns” were showcased at Shenzhen Museum of Contemporary Art and Urban Planning. The refreshing ceramic products and cultural and creative derivatives presented the unique artistic charm of Yungang Grottoes to the public in a more modern and accessible way. This has received strong recognition from the Yungang Grottoes Research Institute, significantly enriched the R&D of cultural and creative products related to the grottoes, and laid a solid foundation for future collaboration.

Project Outcomes and Implications

A Typical Example of the Modern Transformation of Excellent Traditional Chinese Culture

The “dual innovation” of excellent traditional Chinese culture is an important contemporary proposition. How to allow traditional culture to shine with a new contemporary visage through modern transformation requires collective wisdom and collaborative effort. The “Design of Creative Derivatives Inspired by the Yungang Grottoes Decorative Patterns” project leverages cultural heritage and cultural industry to optimize communication carriers. Through the re-transformation of Yungang Grottoes decorative patterns, it gained vitality aligned with modern times, achieving a successful transition from academic to products and from tradition to modernity. This initiative has yielded multiple benefits in academia, economy, and culture, revitalized the modern recognition of excellent

traditional Chinese culture (Li & Yang, 2023, pp. 5-7), and served as typical example for educational institutions to promote the creative transformation and innovative development of this culture through industry-academia-research collaboration.

The Practical Results of Vocational Education in Advancing a Collaborative Education Mechanism for the Confluence of Science and Education

Adhering to the development path of industry-education integration and school-enterprise cooperation has always been a primary hallmark of vocational education. This project kept breaking down professional boundaries through multi-channel development, forming a new “teaching community” composed of teachers, students, industry, and enterprise personnel. It has greatly expanded the learning space beyond the classroom. By taking part in the research of national-level academic projects, students developed a holistic thinking towards project implementation. The successful completion of this project represents a productive exploration of vocational education in deeply promoting the confluence of science and education, and constantly enhancing the quality of innovative talent cultivation by strengthening the ties among teaching, scientific research and industry, thereby empowering high-quality socio-economic and cultural growth.

A Positive Exploration by Deepening Classroom Teaching Reform in Vocational Art Design Education

By taking the project as an opportunity, the project team embedded the project content into classroom teaching, and carried out synchronized instruction with graduation design. A total of 78 students from two classes took part, culminating in a thematic exhibition at the end of the project.

Among them, 15 outstanding student works were selected for the showcase of the “Design of Creative Derivatives Inspired by the Yungang Grottoes Decorative Patterns” project. Through project research, students experienced the charm of traditional Chinese culture and art, and skillfully blended traditional art into design ingenuity. Meanwhile, they also immersed themselves frontline production in enterprises, benefiting from guidance by the enterprise mentors and acquiring the essence of traditional crafts like porcelain applique. By personally participating in the production process within enterprises, they experienced the whole design cycle from research and design to the final product.

Conclusion

To achieve the “dual innovation” of excellent traditional Chinese culture is an objective essentiality for the cultural construction of socialism with Chinese characteristics. Only by adhering to the correct philosophy and continuously exploring a feasible path to promote the “double innovation” of excellent traditional Chinese culture can we provide cultural strength for the rejuvenation of the Chinese nation (Li & Yang, 2023, pp. 5-7). The series of ceramic and cultural and creative derivatives completed by the “Design of Creative Derivatives Inspired by the Yungang Grottoes Decorative Patterns” project captured the essence of traditional culture, while blending the scenarios of modern life, making the ancient art of Yungang Grottoes bloom in a new expressive form within the Greater Bay Area, yielding fruitful academic results and considerable social benefits. These outcomes are the product of the overflow and transformation of the academic knowledge of Shandong University of Art & Design, the R&D and innovation of the Cultural & Creative Products Institute of Shenzhen Polytechnic University, and the exquisite craftsmanship of Stechcol Ceramic Crafts Development (Shenzhen) Co., Ltd. These three elements are indispensable. The tripartite collaborative model of “Research-Creation-Production” built in this project serves as a great example for the exploration and construction of a path and mode for the modern transformation of

excellent traditional Chinese culture. Cultural creativity is the best medium linking cultural heritage with cultural industry, and the two complement each other. Only by deepening the development path of the integration of industry and education and the confluence of science and education, building a deeper and more enduring collaborative model of “Research-Creation-Production”, and achieving a complete closed-loop towards a win-win situation in cultural sources—research transformation—product design—socio-economic and cultural benefits can we truly help the ancient artistic treasures unleash their contemporary value and encourage the modern transformation of traditional culture and the development of contemporary cultural industries, allowing excellent traditional Chinese culture to enter people’s lives and reach the world through richer forms of modern interpretations.

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