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Research on AI-Enabled Digital Cultural and Creative Design of Ouyue Culture and Cultivation of Creative Talents

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Abstract: As the core carrier of Wenzhou's regional culture, Ouyue culture includes a number of intangible cultural heritages such as Ouyao Kiln ceramics, stone carving, wooden movable-type printing, and boneless lanterns. Against the backdrop of the rapid development of the digital economy and artificial intelligence, traditional cultural resources are in urgent need of digital and cultural and creative transformation. Taking Wenzhou's Ouyue culture as the research object, this paper analyzes the market status of Ouyue culture digital cultural and creative products, the effectiveness of AI application, and pain points in talent cultivation through survey data, practical cases and achievements of school-enterprise cooperation, and proposes an integrated development path of "AI technology + cultural IP + integration of industry and education". The research shows that the main consumers of Ouyue culture cultural and creative products are currently aged 26-35, accounting for more than 55%; AI tools can increase the efficiency of cultural and creative design by an average of more than 60% and reduce costs by about 40%; the collaborative cultivation model of "universities + enterprises + cultural experts" has improved students' practical ability and employment competitiveness by more than 40%. The research results of this paper can provide references for the development of regional cultural IP, the upgrading of the digital cultural and creative industry, and the cultivation of higher vocational creative talents.

Keywords: Ouyue Culture; Digital Cultural and Creative Products; AI Design; Integration of Industry and Education; Talent Cultivation.

1. Introduction

As a national famous historical and cultural city, Wenzhou is rich in Ouyue cultural resources. In recent years, the integration of culture and tourism, digital cultural and creative industries, and national trend consumption have continued to heat up, and consumers' acceptance and purchasing power of traditional culture have increased significantly. However, in practical development, Ouyue culture cultural and creative products still suffer from problems such as product homogeneity, insufficient innovation capacity, shallow technical application, and mismatched talent supply. The popularization of artificial intelligence technology provides new solutions for cultural element extraction, creative design generation, user demand matching, and IP operation and promotion. [1-2]

Zhejiang DongFang Polytechnic and Zhejiang Zhongchen Environmental Technology Co., Ltd. have carried out horizontal research cooperation on "Research on AI-Enabled Digital Cultural and Creative Design of Ouyue Culture, Cultivation of Creative Talents and Development of Regional Cultural IP", exploring a cultural digital transformation model suitable for Wenzhou through investigation, design, practical training, achievement transformation and other links. Based on the practice and data of this project, this paper systematically expounds the application value of AI in Ouyue culture digital cultural and creative products and the reform ideas of talent cultivation.

2. Market Status and Survey Data Analysis of Ouyue Culture Digital Cultural and Creative Products

2.1. Survey Objects and Methods

To better conduct research and analysis, the project team surveyed Wenzhou's cultural and creative enterprises, relevant scenic spots, representative intangible cultural heritage workshops and bases, college teachers and students, and ordinary consumers. A total of 620 questionnaires were distributed, 578 valid questionnaires were recovered, with an effective recovery rate of 93.2%. Meanwhile, 23 enterprise principals, 8 inheritors of intangible cultural heritage, 15 design practitioners, and 42 teacher and student representatives were interviewed, and data support was formed combined with literature research and case analysis.

2.2. Consumer Group Structure Data

Statistics were made from four dimensions: age, purchase intention, annual average consumption, and preference type, and the results are as follows:

The data shows that the group aged 26-35 is the core consumer group of Ouyue culture cultural and creative products, accounting for more than 55%, with the strongest consumption capacity and an annual average consumption of 612 yuan. This age group pays more attention to appearance, practicality and emotional value, and has a high acceptance of AI-generated and digital presentations. The student group aged 18-25 has strong purchase intention but low consumption amount, preferring lightweight and low-price digital cultural and creative products. Middle-aged and

elderly consumers pay more attention to traditional crafts, but the overall demand is weak.

Table 1. Statistics of Consumer Groups and Preferences of Ouyue Culture Cultural and Creative Products

Age Group	Proportion (%)	Purchase Intention (%)	Annual Average Consumption (yuan)	Preference Type
18-25	28.7	76.8	368	Digital collections, trendy toys, stickers
26-35	55.3	84.5	612	Practical cultural and creative products, souvenir gifts, household items
36-45	12.1	62.3	475	Intangible cultural heritage crafts, ornaments, gifts
Over 46	3.9	38.6	243	Commemorative albums, traditional handicrafts

2.3. Market Demand and Pain Points

Factors most concerned by consumers: appearance design (67.3%), cultural connotation (58.2%), price (44.1%), practicality (41.5%).

Consumer pain points: serious product homogeneity (62.8%), rigid splicing of cultural elements (51.7%), high price (38.4%), few purchase channels (29.3%).

Enterprise pain points: slow creative iteration, high design cost, talent shortage, insufficient cultural understanding, weak digital capability.

The survey indicates that the Ouyue culture cultural and creative market has strong demand, but insufficient innovation, lagging technology and talent shortage on the supply side have become the main bottlenecks restricting industrial upgrading. [3]

3. Application Effect of AI in Ouyue Culture Digital Cultural and Creative Products

3.1. AI Application Scenarios and Efficiency Improvement

This project applies technologies such as AI drawing, element recognition, prototype generation, and user portrait analysis to the whole process of cultural and creative design. Compared with the traditional model, the efficiency and cost have been significantly improved.

Table 2. Application Effect of AI in Each Link of Cultural and Creative Design

Design Link	Efficiency Improvement (%)	Cost Reduction (%)	User Satisfaction (%)
Cultural element extraction	72.4	36.8	91.6
Creative sketch generation	66.8	43.2	88.3
Product prototype production	57.9	49.7	84.7
Market testing and optimization	46.3	28.5	80.9
Average level	60.8	39.6	85.1

It can be seen from the data that AI has the most obvious improvement in cultural element extraction and creative generation links, with efficiency increased by more than 65% and cost reduced by nearly 40%. Traditional methods require designers to spend several days sorting out Ouyao patterns and stone carving shapes, while AI can complete classification, vectorization and stylization processing in a few hours, greatly shortening the cycle.

3.2. Achievements of AI-Enabled Digital Cultural and Creative Development

Relying on AI tools, the project team has completed the design of Ouyue culture IP images, digital collection prototypes, cultural and creative stickers, packaging visuals and other achievements, forming a set of implementable digital cultural and creative solutions. Main contents include:

AI material library of classic Ouyue culture elements, including more than 200 vector materials such as Ouyao ceramics, wood carvings, lanterns and ancient bridges.

3 groups of cartoon images of Ouyue culture IP, covering scenarios of scenic spots, campuses and urban souvenir gifts.

10 sets of cultural and creative product prototypes, including bookmarks, badges, canvas bags, digital wallpapers, etc.

A set of AI cultural and creative design process specifications, which can be directly used in teaching and enterprise training.

Practice has proved that AI does not simply replace designers, but frees designers from repetitive work, allowing them to focus more on cultural interpretation, creative planning and user experience, making cultural and creative products more warm and closer to the market. [4-5]

4. Reform of Creative Talent Cultivation Mode Based on Integration of Industry and Education

4.1. Problems of Traditional Talent Cultivation

Courses focus too much on software operation, lacking cultural literacy and market thinking.

Teaching projects are virtual and disconnected from the real needs of enterprises.

Students' application of AI tools is fragmented, lacking systematic training.

School-enterprise cooperation stays at the level of lectures and visits, lacking depth.

4.2. "Trinity" Collaborative Cultivation Mode

The project constructs a tripartite collaboration mechanism of universities + enterprises + cultural experts, which is the main method and mode adopted by many higher vocational colleges. The core participants include universities, enterprises and cultural experts. Through the implementation of the "Four Introductions" mechanism—introducing projects into classrooms, works into the market, teachers into enterprises, and experts into classrooms—students participate in the whole process of Ouyue culture IP development in a project-based manner. The three parties undertake different functions and roles in the implementation process. Generally speaking: universities are the main implementers of the project, responsible for cultural theory, AI technology, design basic teaching and other related contents. Enterprises are another important part of the project, providing real projects, market data, practical training positions, industry mentors and other related contents in the implementation process, which are key factors for the success of the project. The third key factor is cultural experts, who check the cultural connotation to avoid misuse and vulgarization of elements.

4.3. Comparison Data of Cultivation Effect

A comparison was made between 45 students participating in the project and 45 students not participating, and the results are as follows:

Table 3. Comparison of Cultivation Effects Between Traditional Mode and AI-Enabled Mode

Evaluation Dimension	Traditional Mode (Average Score)	AI-Enabled Mode (Average Score)	Improvement Range (%)
Professional skills	64.8	87.9	35.6
Practical ability	57.5	84.6	47.1
Cultural understanding	61.3	82.4	34.4
Employment competitiveness	62.1	90.3	45.4
Comprehensive ability	61.4	86.3	40.6

The data shows that under the AI-enabled + industry-education integration mode, students' comprehensive ability has improved by more than 40%, and practical ability and employment competitiveness have improved most significantly. Students can not only use AI tools, but also understand culture, market and implementation, which better meets the employment needs of enterprises.

5. Existing Problems and Optimization Strategies

5.1. Main Existing Problems

Low degree of cultural digitalization and unsystematic sorting of intangible cultural heritage resources. AI application stays at the surface level, lacking in-depth algorithms and customized development. Limited scale of talent cultivation, unable to quickly meet industrial demand. Few achievement transformation channels and low marketization of cultural and creative products.

5.2. Optimization Strategies

Establish a digital resource library of Ouyue culture to promote the standardization and digitalization of intangible cultural heritage elements.

Deepen AI application, extending from drawing to intelligent recommendation, user matching and operation analysis.

Expand the scale of practical training, integrate project-based teaching into the talent training program, and form a curriculum group.

Build a school-enterprise transformation platform to promote the transformation of students' works into commodities and improve industrial contribution.

Strengthen cultural checks and establish an expert review mechanism to uphold the cultural roots.

6. Conclusion

Ouyue culture digital cultural and creative products have huge market potential, with young people aged 26-35 as the main consumer force. AI technology can significantly improve design efficiency, reduce costs and enhance innovation capacity, which is a key starting point for cultural transformation. Through the mode of "AI + cultural IP + integration of industry and education", universities can

cultivate compound creative talents more in line with industrial needs, enterprises can obtain cultural and creative products with stronger market competitiveness, and regional culture can be better inherited and spread in the digital era.

This research and practice show that AI is not a challenger to traditional culture, but an enabler. In the future, we should continue to deepen technical application, improve talent cultivation, and promote achievement transformation, so that Ouyue culture can "become trendy, popular and go global" in the digital era, providing sustained impetus for the high-quality development of Wenzhou's cultural industry.

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References

[1] He Jiajun, Meng Zhaoyang. Research on the Design Path of Qianling Culture Cultural Tourism Brand Empowered by Digital Humanities[J]. Shoes Technology and Design, 2026, 6(04): 195-197.

[2] Wang Bowen, Chen Xiaowen. Analysis on Digital Cultural and Creative Design of Cultural Industry from the Perspective of Rural Revitalization[J]. Rural Economy and Science-Technology, 2026, 37(02): 139-141.

[3] Liang Guimin, Zeng Feifei. Research on Digital Cultural and Creative Design of Intangible Cultural Heritage Sansu Culture Based on Image Narrative[J]. Comedy World, 2026(02): 94-96.

[4] Lv Kai. Practical Exploration of "Three-Dimensional and Three-Level" Hierarchical Teaching of Cultural and Creative Design Courses in the Digital Context[J]. Art Education Research, 2026(02): 139-141.

[5] Chang Danqi, Chang Xiaolin, Wang Doudou, et al. Application of Digital Technology in Packaging Design of Cultural and Creative Ice Cream in Luoyang Regional Culture[J]. Screen Printing Industry, 2026(01): 53-55.