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Dual-Driven Curriculum Reform Practice for New Media Design and Production: Regional and Industrial Drivers

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Abstract: Against the backdrop of rapid iteration of short-video and new media forms, social demand for new media design talents continues to grow, with higher requirements for their comprehensive capabilities. Taking the New Media Design and Production course as the carrier, this paper conducts two rounds of action research under the dual guidance of new liberal arts construction and Outcome-Based Education(OBE) philosophy, addressing problems in traditional teaching such as valuing technical skills over core principles and disconnection from industry. Based on an investigation of post competencies in the Pearl River Delta's new media industry, the study reversely reconstructs four core modules: brand visual identity, IP image design, video production, and UI interface design, and deeply integrates regional cultural elements of Zhaoqing Xinghu Lake, forming a teaching feature characterized by real project penetration and regional cultural empowerment. In teaching implementation, a four-dimensional linkage teaching method is proposed; in evaluation and expansion, a multi-dimensional assessment system based on scoring rubrics is established, and a three-stage progressive practice empowerment system is constructed. Two rounds of iterative practice show that students' core competence attainment and learning experience have both improved, and high-quality course outcomes have repeatedly won awards in high-level discipline competitions. This study explores a curriculum construction and reform path for art and design majors in local application-oriented universities, featuring precise alignment with industrial demands, deep integration of regional culture, and systematic cultivation of innovation ability.

Keywords: Application-Oriented Undergraduate Education, New Media Design, Teaching Reform, Local Service, Competition-Driven Learning

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1. Introduction

Guangdong Province, especially the Pearl River Delta region, has formed a new media industry cluster represented by advertising marketing, e-commerce, and cultural tourism, with strong demand for application-oriented new media design talents. Application-oriented undergraduate education must closely align with industry standards and industrial needs, so that students not only master professional theories but also develop comprehensive professional competence to transform knowledge into solutions to practical problems. Located in the western wing of the Pearl River Delta, Zhaoqing is home to a large number of micro, small, and medium-sized enterprises with strong demands in brand digital communication and new media promotion, yet they face the dilemma of professional talent shortage and insufficient service support. This provides a clear value orientation for talent cultivation in local universities.

As a core course for art and design majors, the teaching effectiveness of New Media Design and Production directly relates to the achievement of talent cultivation objectives. However, traditional courses mostly focus on isolated explanation of software functions and indoctrination of aesthetic principles, lacking project-oriented collaborative software application and workflow training. This leads to a fragmented knowledge system among students and insufficient integration and innovation capabilities when facing complex projects (Xiong, 2023). Most course assessment works are virtual topics, failing to connect with real market demands,

real enterprise projects, and local cultural communication scenarios. Therefore, systematically reforming the traditional teaching mode of this course, based on the university's local and application-oriented orientation, has practical necessity and theoretical exploration value.

Outcome-Based Education (OBE), systematically proposed by Spady, emphasizes principles such as clear focus, reverse design, high expectations, and expanded opportunities, requiring curriculum, teaching, and evaluation to center on what students can ultimately do (Brady, 1996). Harden (2002) pointed out that OBE should clarify learning outcomes, design teaching activities, and establish evaluation methods. Biggs' (1996) constructive alignment emphasizes the consistency of learning objectives, teaching activities, and assessment tasks. Syeed et al. (2022) provided an operable OBE framework for engineering education, including core links such as PEO, PLO, CLO, Rubric, and CQI. Shi et al. (2025) integrated OBE and Problem-Based Learning (PBL) into clinical practice teaching, finding that the complementarity of goal orientation and problem-driven approaches can significantly improve the attainment of theory, practice, and career planning. Wu et al. (2023) confirmed based on OBE theory that communication skills have a significant impact on engineering students' employability, and employer evaluation feeds back into communication skills cultivation. A systematic review of global OBE literature by Mahrishi et al. (2025) shows that OBE is highly aligned with United Nations Sustainable Development Goal 4(Quality Education), but its implementation is still limited by insufficient collaboration and regional differences. From an evaluation perspective, Shaheen (2019) noted that OBE requires assessment to shift from teacher-centered to learner-centered, emphasizing real performance and multiple evidence. These studies provide a theoretical basis for the reverse design of course objectives, modules, and rubrics in this paper.

Design education features practicality, project orientation, reflectivity, and studio culture. Asfeldt and Stonehouse (2021) proposed reflective practice, emphasizing that designers reflect in action and act in reflection. Cross (1982) pointed out that design has its unique designer-like cognitive style, and design education should cultivate the ability to solve ill-defined problems. Dorst (2011) further argued that the core of design thinking lies in frame creation, i.e., redefining the problem space when facing open problems. Kourouthanassis et al. (2015) systematically elaborated on designers' thinking processes and strategies. Oxman (2004) advocated mind map-based design learning, emphasizing knowledge visualization and conceptual construction. These classic studies lay the theoretical foundation for design education.

In terms of online and blended design education, Park (2011) pointed out that online design education needs to integrate interactive structures, communication channels, and learning evaluation to form an effective virtual design studio. A systematic review of computational thinking and user interfaces by Rijo-García et al. (2022) found that interface type, cognitive load, and usability significantly affect learning outcomes. A UI design study for autistic children by Kamaruzaman et al. (2016) showed that interface design must be based on target users' cognitive characteristics and follow principles such as clustering, consistency, and clutter reduction. Taking Blockly-Electron as an example, Cen et al. (2023) reconstructed AI education software interfaces using user-centered design and found that usability mediates the relationship between usefulness/ease of learning and satisfaction. Buendia-Garcia and Piris-Ruano (2025) introduced generative AI into web development courses for UX design students, proposing incremental prompting and benchmark comparison strategies to effectively support non-technical students in completing development tasks. Hong et al. (2025) applied generative AI-enhanced VR teaching simulation to pre-service teacher education, finding its potential in teaching decision-making, classroom communication, and participation, while noting the need to focus on cognitive load and interface design. Isaacs et al. (2024) designed an ethical AI teaching assistant, emphasizing data privacy, transparency, and explainability. Jafri et al. (2015) developed the Tac-Trace tangible UI to help visually impaired children learn shape concepts, proving that physical interaction and multimodal feedback have value for special education. These studies provide theoretical support for the modularization, project orientation, user-centeredness, and ethical dimensions of the New Media Design and Production course.

Application-oriented undergraduate education must closely align with industry standards and industrial needs to equip students with comprehensive professional competence to transform knowledge into practical problem-solving. The Pearl River Delta's new media industry cluster has strong demand for talents in brand vision, IP creativity, short-video content production, and user experience design. In terms of curriculum ideological and political education, Ma (2026) pointed out that UI design courses should build an education community of curriculum ideology and ideological-political courses, expand ideological resources, and promote the integration of small ideological classrooms with large social classrooms. Gao (2025) proposed the multi-dimensional value of integrating intangible cultural heritage into UI design courses, including digital empowerment of living cultural inheritance, strengthening cultural confidence, design for public welfare, and stimulating cross-border integration. A survey by Jiang et al. (2026) found that students prefer implicit integration, short videos, animations, and enterprise craftsman cases, suggesting that curriculum ideological education should avoid rigid integration. Based on the 1 + X certificate system, Cao et al. (2025) emphasized the integration of posts, courses, and certificates to balance vocational education and certification. These studies provide a basis for the comprehensive practice of local industry service + professional literacy + curriculum ideological education in this paper.

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Therefore, based on the university's local and application-oriented orientation and addressing the gap between Guangdong's regional industrial demand and the current state of talent cultivation, systematically reforming the traditional teaching mode of the New Media Design and Production course has both urgent practical necessity and important theoretical exploration value. The core proposition of this teaching reform practice is how to construct a new curriculum paradigm oriented by outcomes, driven by real projects, and deeply integrated with regional characteristics, so as to effectively break the dilemma of disconnection between theory and practice and separation between learning and application. Based on two rounds of teaching reform practice, this paper systematically expounds the whole process of this exploration. Following the OBE philosophy and taking in-depth investigation of post competencies in Guangdong's new media industry as the logical starting point, the reform reversely designs and reconstructs a teaching content system integrating four core competence modules: brand visual system, IP image, short video, and UI interface, and deeply implants regional cultural elements of Zhaoqing Xinghu Scenic Area.

2. Research Design

2.1. Research Subjects

The subjects of this study are undergraduates majoring in Art Design from the School of Art and Design, Guangdong Technology College, who took the New Media Design and Production course in the 2022 and 2023 cohorts, forming the experimental group. As a compulsory core course for the major, it covers 4 natural teaching classes with a total of 120 valid samples. All students have completed prerequisite courses including Fundamentals of Design and Digital Image Processing, and possess basic design literacy and software operation competence.

The control group consists of 60 students of the same major from the 2021 cohort, who received traditional lecture-based instruction. The admission criteria and prerequisite course arrangements of the control group are fully consistent with those of the experimental group, with homogeneous professional foundations. Both groups were instructed by the same course teaching team, with identical teaching hours and credit settings to control for the interference of extraneous variables.

2.2. Implementation Procedure

As shown in Table 1, this study adopts the action research method and conducts two rounds of teaching iteration. Both rounds of action research take real projects as the core: the first round focuses on module construction and process validation, and the second round focuses on outcome transformation and quality improvement, reflecting the iterative logic of design, implementation, reflection, and redesign. The first round solved the problem of building a modular framework from scratch. The second round optimized the loose module connection and insufficient competition transformation exposed in the first round, added enterprise mentor evaluation and graduation design advancement, and extended curriculum reform from teaching implementation to outcome output.

Table 1. Implementation Procedure of Two Rounds of Action Research

Stage	Round 1(Spring 2023)	Round 2(Spring 2024)
Industrial investigation	Visited 6 PRD enterprises, interviewed 12 practitioners	Expanded to 8 enterprises, added user research posts
Backward design	Constructed four modules, formulated assessment rubrics	Optimized module connection, strengthened UI-short-video linkage
Teaching implementation	Star Lake project as core thread; four-dimensional linkage	Added enterprise mentor review and simulated proposal defense
Observation & evaluation	Rubrics + questionnaires + reflective reports	Added competition conversion and graduation project advance arrangement
Reflection & redesign	Adjusted case selection and task difficulty	Optimized competition guidance and outcome incubation

2.3. Assessment Tools and Data Collection

Course learning outcomes are evaluated via outcome-oriented assessment rubrics covering four deliverables: brand VI, IP image, short video and UI design. Each deliverable is assessed across three dimensions: strategy & creativity (30%), technical

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implementation & standardization (40%), completeness & systematicness (30%). Four descriptive performance levels (Excellent, Good, Qualified, Needs Improvement) are defined for each dimension. Rubrics are released to students before each module commences. Students' subjective learning experience is collected via the university's official online teaching evaluation system. Practical innovation outcomes are externally measured by awards in rankings-based competitions such as NCDA (National College Digital Art Design Competition) and Future Designer. Qualitative data include project portfolios, process sketches, group presentation videos, course reflective reports, instructor observation notes and feedback from enterprise mentors.

3. Reconstruction and Practice of Modular Teaching Content Based on Industrial Demands

3.1. Investigation and Analysis of Occupational Competencies in Guangdong's New Media Industry

With the rapid development of the digital creative industry in the Guangdong-Hong Kong-Macao Greater Bay Area, the new media industry has put forward new requirements for the structure of talent competencies. Through investigations of cultural media enterprises, advertising agencies, and internet companies in the Pearl River Delta, the research team found that the industry urgently needs interdisciplinary talents with brand visual integration ability, IP creative development ability, short-video content production ability, and user experience design ability. Many enterprises indicated that employees need to have the ability to innovatively transform regional cultural elements, which provides a clear direction for the regional integration of curriculum content.

We found a significant disconnection in the traditional curriculum system: teaching content centers on software tool instruction, leading to fragmented knowledge; practical projects are virtualized and disconnected from real business scenarios; there is a lack of cultivation of cutting-edge design thinking such as brand strategy and user research. This makes it difficult for graduates to quickly adapt to job requirements, making reform imperative. Therefore, we must break the traditional software-centered curriculum structure, take the four core post competencies as training objectives, reversely reconstruct teaching content, build a new project-oriented and modular curriculum system, and deeply integrate local industry and cultural characteristics to enhance students' practical innovation ability and employment competitiveness.

3.2. Construction of Four Core Teaching Modules

As shown in Table 2, based on the reverse design principle, we take the four core post competencies as expected learning outcomes, completely break the traditional software syllabus, and reconstruct a modular curriculum system with brand building, content production, and experience delivery as the logical thread, deeply integrating Zhaoqing's regional cultural elements. The entire course is threaded by a comprehensive practical project of new media brand upgrading for Zhaoqing Xinghu Scenic Area, making the four modules no longer isolated units but an organic, coherent, and interlocking project flow.

Table 2. Content, Tasks and Competency Objectives of the Four Modules

Module	Core Content	Project Task	Competency Objective
Module 1: brand VI	Brand positioning, digital VI, cultural translation, AI-assisted standardized production	Star Lake VI Manual	Integrated brand visual design
Module 2: IP image	Worldbuilding, orthographic views, expression system, cultural & creative derivatives	IP character Wowo and emoji pack	IP creative development
Module 3: short video	Vertical-screen storytelling, storyboarding, editing, AE motion graphics, data-driven operation	Star Lake-themed short videos	Short-video content production
Module 4: UI interface	UX fundamentals, iOS/Android specifications, Figma componentization, interactive prototyping	UI for Smart Star Lake Mini Program	User experience design

3.3. Students' Modular Practical Outcomes

As shown in Table 3, taking the new media brand upgrading project of Zhaoqing Xinghu Scenic Area completed by students as a case, this section demonstrates how modular teaching guides students through the complete practice process from brand visual system construction to IP image creation, promotional video production, and UI interface design, forming a closed-loop design of regional cultural element extraction, brand symbol creation, content communication, and user experience.

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Table 3. Students' Modular Practical Outcomes and Competency Progression

Module	Student Deliverables	Competency Objective
Module 1	Logo, color palette, auxiliary graphics, applications for signage, webpages and tickets	Integrated brand visual design
Module 2	IP character Wowo, WeChat emoji pack, cultural & creative derivatives	IP creative development
Module 3	Star Lake-themed short videos, platform test data	Short-video content production
Module 4	UI of Smart Star Lake Mini Program, high-fidelity prototype	User experience design

Analysis of students' practice outcomes from Module 1 to Module 4 shows that the modular reconstruction of teaching content is not a simple reorganization of knowledge, but builds a clear competence progression ladder and value creation closed loop. Following the path of cultural decoding, brand building, content creation, and experience delivery, students complete the entire digital construction process of a regional cultural brand from scratch. This not only enables them to master isolated knowledge points, but also deeply understand the internal connections and collaborative logic between professional links, forming systematic thinking and execution ability to solve complex design problems—the core goal of application-oriented talent training. This practice also proves that modular curriculum reconstruction based on industrial demand and deeply integrated with regional characteristics is an effective path to improve students' employment competitiveness and realize universities' service to local development.

4. Innovation and Implementation of the Four-Dimensional Linkage Teaching Method

4.1. Innovative Teaching Method

To ensure that modular and regionalized teaching content can be effectively transformed into students' practical abilities, this course breaks through the traditional single mode of teacher lecturing and student listening, and innovatively constructs a four-dimensional linkage teaching method consisting of task assignment, field investigation, integrated software practice and case analysis, and after-class refinement and presentation.

This method takes project tasks as the engine and regional culture as the foundation, integrates theoretical teaching, practical operation, creative stimulation, and comprehensive expression, and forms a spiraling teaching closed loop that efficiently drives the achievement of the four modules. At the beginning of each teaching module, instead of directly teaching software operations or theoretical knowledge, a detailed project task sheet is first issued to students. For example, Module 1 requires students to complete a set of VI systems suitable for new media platforms for Zhaoqing Xinghu Scenic Area in groups, including logo, standard characters, standard colors, and application specifications for social media avatars and covers.

After task assignment, students are immediately organized to conduct field investigation and inspection in Zhaoqing Xinghu Scenic Area. For Module 2, for instance, students explore how to IPize Xinghu cultural elements: they observe the landforms of Seven Star Crags, cliff stone carvings, and wetland migratory birds at close range, collect first-hand creative materials such as images, stories, and colors, and communicate with scenic area managers, tour guides, and tourists to understand the existing brand image and communication pain points of the scenic area.

Returning from field investigation, students gain creative motivation and materials and then enter the technical breakthrough stage. This session adopts a mode of in-depth integration of case analysis and software practice. For Module 3, for example, instead of systematically explaining all functions of PR or AE, the teacher selects an excellent urban cultural tourism short video case for deconstruction. After demonstration, students immediately practice imitation in class to complete a similar micro-task. Classroom time is mainly used for inspiration, instruction, and core skill practice, while the complete production and polishing of works are completed by students in groups after class.

4.2. Comprehensive Case Study

(1) Project background and overall task design

The Zhaoqing xinghu scenic area represents a typical case combining natural landscapes with cultural heritage. Its new media branding faces practical challenges such as lack of distinct recognition and weak connection with younger audiences. In this project, student groups act as professional design teams to develop a systematic new media brand upgrade proposal. The core objectives include refreshing the brand image for younger demographics, optimizing digital experiences, and strengthening cultural communication effectiveness.

(2) Modular implementation and verification of four-dimensional interactive mechanism

Taking Module 1(Brand visual identity system design) as an example, as illustrated in Figure 1, the implementation process demonstrates how the four-dimensional interactive teaching method guides students through transforming regional cultural elements into professional design outcomes.

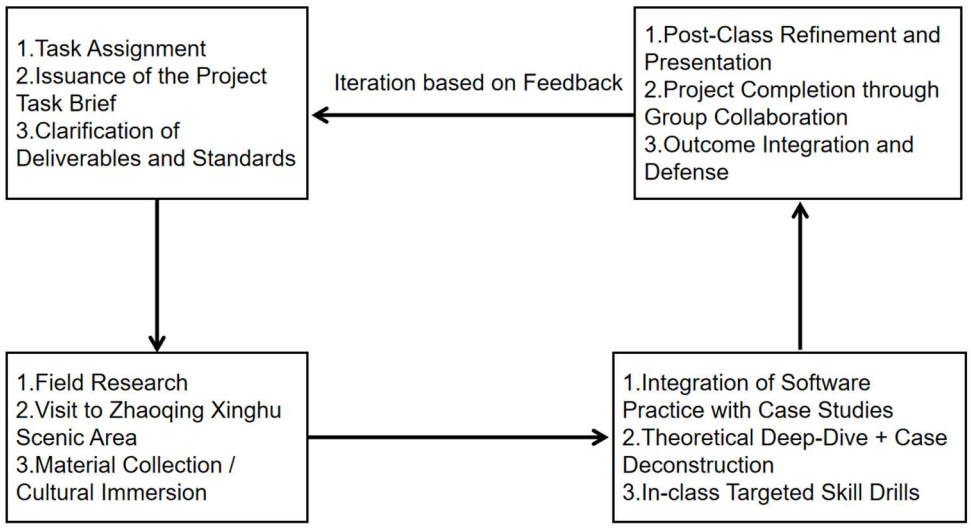


Figure 1. Practical Teaching of New Media VI Manual Design. Source: The authors.

4.3. Competition Transformation and Graduation Design Advancement

On the basis of completing course projects, a transformation mechanism from course assignments to competition works is established. Students are encouraged and guided to polish and deepen their course project outcomes to participate in various high-level professional discipline competitions. We set up a competition guidance group to provide one-on-one detailed guidance on students' works after class according to specific competition requirements and evaluation criteria. Taking the competition preparation process as the second classroom greatly improves students' awareness of work standards, pressure resistance, and the craftsmanship of striving for excellence.

To solve the common problems of tight time, vague topics, and uneven quality in graduation design theses, this course innovatively establishes a connection mechanism between course projects and graduation design. Teachers guide junior students to make forward-looking plans during course learning. For excellent projects generated in the course and areas of personal interest, students are encouraged to take them as graduation design topics. Students can conduct more in-depth theoretical research and broader design practice on the basis of original course projects. By advancing the start time of graduation design from the senior year to the junior year, students have more sufficient time for literature research, user investigation, and design iteration, effectively guaranteeing the depth and quality of graduation design.

5. Effects of Curriculum Reform

5.1. Inter-Group Comparability Test

Taking the final score of the prerequisite course Fundamentals of Design as the baseline indicator, a difference test was conducted on the professional foundations of the two groups. The results are presented in Table 4. The experimental group had a mean score of 82.34 ± 5.61, while the control group scored 81.87 ± 6.08 on average. An independent samples t-test yielded $t = 0.503$, $df = 178$, $p = 0.616 > 0.05$, indicating no statistically significant difference in baseline performance between the two groups. This confirms the homogeneity of students' professional foundations prior to the course and the comparability between groups, meeting the baseline requirements of experimental research.

Table 4. Comparison of Prerequisite Course Scores Between the Two Groups

Group	Sample Size	Mean Score	Standard Deviation	*t*-value	*p*-value
Experimental group	120	82.34	5.61	0.503	0.616
Control group	60	81.87	6.08		

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5.2. Goal Attainment and Student Evaluation

The overall course grades of the two groups were classified according to the scoring rubric, with statistical results shown in Table 5. In the experimental group, 22 students (18.3%) achieved excellent, 59(49.2%) good, 33(27.5%) qualified, and 6(5.0%) to be improved. In the control group, 5 students (8.3%) achieved excellent, 23(38.3%) good, 24(40.0%) qualified, and 8(13.3%) to be improved. A chi-square test showed $\chi^2 = 10.278$, $df = 3$, $p = 0.016 < 0.05$, indicating a significant difference in grade distribution between the two groups. The proportion of students achieving good or above reached 67.5% in the experimental group, an increase of 20.8 percentage points compared with 46.7% in the control group, alongside a sharp decline in the "to be improved" proportion. This demonstrates that the curriculum reform has significantly optimized students' grade distribution and improved overall learning quality.

Table 5. Comparison of Course Grade Distribution Between the Two Groups

Group	Excellent	Good	Qualified	To be Improved	χ^2-value	p-value
Experimental group	22 (18.3%)	59 (49.2%)	33 (27.5%)	6 (5.0%)	10.278	0.016
Control group	5 (8.3%)	23 (38.3%)	24 (40.0%)	8 (13.3%)		

Independent samples t-tests were performed on scores across the three dimensions of the scoring rubric, with results shown in Table 6. The experimental group scored significantly higher than the control group in all three dimensions ($p < 0.01$). Among them, the score difference in the "strategy and creativity" dimension was the most pronounced ($t = 5.021$, $p < 0.001$), indicating that the real project-driven teaching design integrated with field investigation effectively activated students' local cultural insight and innovative problem-solving thinking, addressing the long-standing pain points of theory-practice disconnection and hollow creativity in traditional teaching. The dimensions of "technical implementation and standardization" and "integrity and systematicness" also showed highly significant differences, verifying the enhancement effect of modular teaching and the four-dimensional linkage method on students' comprehensive competence.

Table 6. Comparison of Scores Across Competence Dimensions Between the Two Groups (Points)

Dimension	Experimental Group (N=120)	Control Group (N=60)	t-value	p-value
Strategy and creativity	3.81 ± 0.74	3.20 ± 0.82	5.021	<0.001
Technical implementation and standardization	3.92 ± 0.68	3.57 ± 0.75	3.126	0.002
Integrity and systematicness	3.76 ± 0.71	3.34 ± 0.79	3.547	<0.001
Overall score	3.84 ± 0.63	3.38 ± 0.70	4.472	<0.001

As shown in Table 7, after the reform, the average course score on the university's teaching evaluation system remains above 95, compared with approximately 90 for the control group; the independent samples t-test confirms a significant difference. As shown in Table 8, over 85% of students voluntarily noted in their reflection reports that they gained practical exercise in project authenticity and challenge, clarity of learning goals and outcome expectations, and team collaboration and communication skills.

Table 7. Difference Test of Students' Teaching Evaluation

Group	Average Teaching Evaluation Score	Standard Deviation	t-value	p-value
Experimental group	95.2	3.1	4.32	<0.001
Control group	90.1	4.5		

Table 8 shows that the most frequent themes in reflection reports are project authenticity and challenge (85.0%) and clear learning goals and outcome expectations (81.7%), followed by team collaboration and communication ability (72.5%) and regional cultural translation (63.3%). The high frequency of project authenticity indicates that real projects endow learning with more sense of meaning than virtual projects; the high frequency of goal clarity indicates that scoring rubrics and module task sheets play a

guiding role, consistent with Biggs' (1996) constructive alignment theory; the high frequency of team collaboration indicates that links such as simulating design company project teams, role division, and integrated defense effectively train communication and collaboration abilities, echoing Park's (2011) view that online design education needs to strengthen communication channels. Regional cultural translation accounts for 63.3%, indicating that the integration of curriculum ideological education and regional culture is not rigid integration but natural penetration through real projects, consistent with Jiang et al.'s (2026) conclusion that students prefer implicit integration.

Table 8. Theme Frequency and Proportion in Reflection Reports (N = 120)

Theme	Frequency	Proportion	Typical Expression
Project authenticity and challenge	102	85.0%	Real projects make me more motivated
Clear learning goals and outcome expectations	98	81.7%	Know what to do at each step
Team collaboration and communication ability	87	72.5%	Division of labor brings more gains than working alone
Regional cultural translation	76	63.3%	Re-recognized Xinghu culture
Technical difficulties and solutions	65	54.2%	Software collaboration requires repeated debugging
Improved professional cognition	58	48.3%	Better understand design company processes

5.3. Competition Awards and Graduation Design Transformation

Table 9. Details of Competition Awards

Competition Name	Level	Award	Quantity
National College Digital Art & Design Competition (NCDA)	Provincial	Third Prize	2
Yongchuang Cup National College Creative Design Competition	Provincial	Second Prize	1
National Youth Art Design Exhibition	Provincial	Third Prize	2
Future Designer · National College Digital Art & Design Competition	Provincial	Third Prize	1
Zhaoqing Animation Intangible Heritage Character Design Competition	Municipal	Second Prize	3
Other Competitions	Provincial/Municipal	Merit Awards	2
Total			11

As shown in Table 9, students' works deeply integrate Zhaoqing regional cultural elements such as Seven Star Crags, cliff stone carvings, and red-crowned cranes, and adopt industry languages such as national trend style, componentized design, and dynamic graphics, with professionalism and maturity far exceeding previous cohorts. The IP Wo Wo forms a complete chain from core IP to diversified applications and then to UI interfaces, approaching the junior professional level of the industry. A total of 11 provincial and above awards have been won, and nearly 30% of students expand course projects into graduation design topics.

Y. Zhang (2025) believes that the integration of teaching and competition can promote seamless connection between teaching and industry needs. L. Zhang et al. (2026) pointed out that promoting learning and teaching through competitions can stimulate internal learning motivation; in this study, mechanisms such as the competition guidance group, one-on-one detailed guidance, and simulation defense transform competition preparation into the second classroom, effectively improving work standard awareness and pressure resistance. The graduation design advancement mechanism relieves the pressure of employment and creation in the senior year, enabling students to have more time for literature research, user investigation, and design iteration, thereby improving

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the depth and quality of graduation design. This is consistent with Chen's (2024) view that OBE-oriented UI design courses should focus on practice orientation and lifelong learning.

5.4. Students' Practical Outcomes



Figure 2. Student Outcomes From Four-Dimensional Linkage Teaching. Source: The authors.

To verify the effectiveness of the four-dimensional linkage teaching method, student works of new media brand visual identity system for Zhaoqing Star Lake Scenic Area are selected as typical cases, as shown in Figure 2. Full analysis of the creative process demonstrates how the pedagogy gradually guides students to translate regional cultural elements into professional design deliverables. This student work fully illustrates the remarkable effects of four-dimensional linkage teaching on cultivating practical capabilities, innovative thinking and professional literacy.

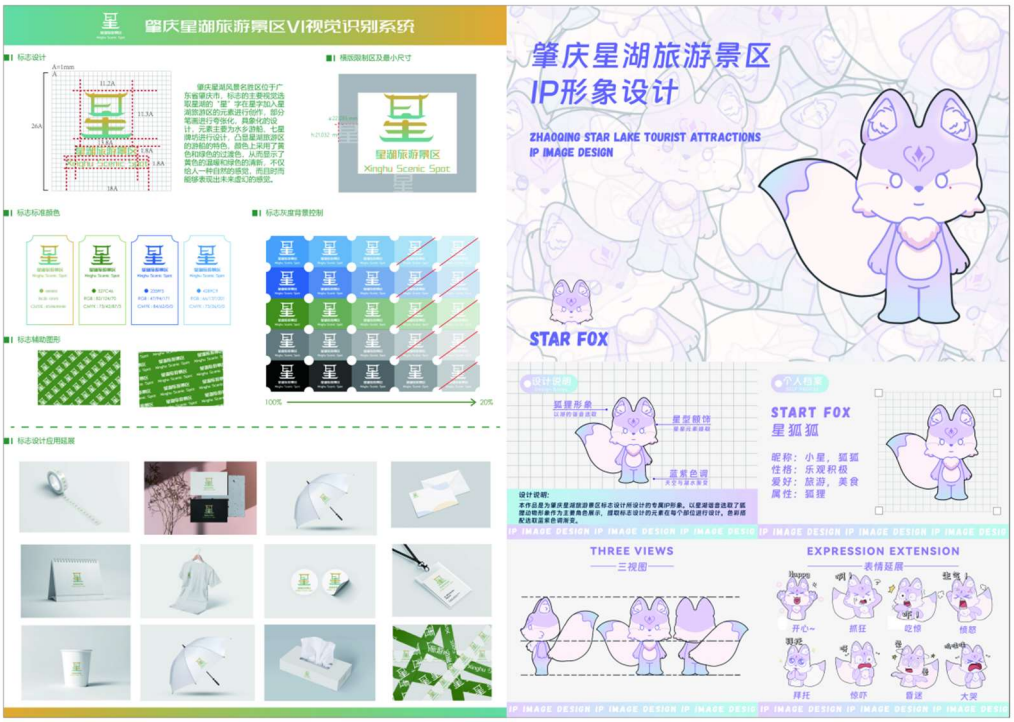


Figure 3. Student Outcomes From Four-Dimensional Linkage Teaching. Source: The authors.

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As shown in Figures 2 and 3, the student team's overarching goal was to create a youthful Xinghu brand that both embodies a millennia-old landscape cultural lineage and aligns with digital-era communication contexts. It ultimately delivered a brand visual system titled Xinghu Yijing Xinsheng (Rebirth of Xinghu Poetic Imagery). Its core outcomes include: a logo that fuses the contours of Seven Star Crags, the brushwork of cliff inscriptions, and modern minimalist graphics; a color system with primary colors Xinghu cyan and Duan inkstone black and secondary colors Danxia gold and moss green, all derived from field color sampling; a typographic and graphic system comprising a custom digital typeface with inscription-like qualities and an auxiliary graphic library abstracted from mountain forms, water patterns, and stone-inscription motifs; an IP character, Xing Xiaoxian, a lively figure inspired by the legends of Seven Star Crags, together with a series of emojis/stickers and cultural-creative extensions; and dynamic visuals and UI applications that animate static VI elements and apply them to the interface design of a conceptual Smart Xinghu mini-program. Far from being produced in isolation, this outcome clearly reflects every stage of the four-dimensional interactive teaching method in its creative process.

The reform emphasizes regional cultural integration, and this deliverable serves as a successful practice of this philosophy, as shown in Figure 4. The design of IP character Wowo avoids superficial application of symbols and carries out in-depth cultural narrative excavation and modern expression. The work clearly demonstrates the complete pipeline from core IP design to diversified applications and digital product interfaces. IP Wowo is equipped with independent orthographic drawings and emoji packs, and systematically applied to posters, tourist maps and the UI interface of the Smart Star Lake Mini Program, acting as a navigation assistant or visual ornament. The standardization of IP modeling, playfulness of emoji animations, clarity of UI layout and rationality of interaction logic nearly meet junior professional industry standards, directly validating the effectiveness of the four-dimensional linkage teaching method. Accumulation of such works not only lays a solid foundation for students to participate in disciplinary competitions and graduation projects but also provides creative youth insights and solutions for the digital upgrading of local cultural tourism.



Figure 4. Student Course Works. Source: The authors.

6. Conclusion and Future Perspectives

Through two rounds of action research, this study systematically explores and verifies the New Media Design and Production curriculum reform mode based on the OBE philosophy. The reform takes precise alignment with industrial demand, deep integration of regional culture, and systematic cultivation of comprehensive ability as the core logic. Through modular content reconstruction, four-dimensional linkage teaching method, course-competition integration, and graduation design advancement mechanism, it promotes the shift of teaching focus from knowledge indoctrination to ability generation. Students' hard skills and soft skills are simultaneously strengthened; works are upgraded from virtual assignments to solutions with application potential; and professional identity, professional competence, and market competitiveness have observable improvements.

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This mode applies to design and digital media majors in local application-oriented undergraduate universities. For universities with different regional industrial foundations, the sources of real projects, regional cultural elements, competition catalogs, and the graduation design connection mechanism should be adjusted accordingly. For universities with insufficient faculty or equipment, a transitional mode of "modular courses + lightweight real projects + intra-campus competitions" can be adopted first, followed by the gradual introduction of enterprise mentors and high-level competitions. For research-oriented universities, theoretical depth and academic transformation can be strengthened; for vocational colleges, the alignment between 1 + X certificates and post standards can be reinforced.

This study is limited to a single course in one local application-oriented university, so sample representativeness needs to be verified by replication studies; the granularity of quantitative data is limited; only two rounds of short-term effect data are available, lacking long-term career tracking of graduates. Future research can adopt multiple external criteria such as quasi-experimental design, multi-school comparison, employer evaluation, and market conversion rate of works, and explore AI-assisted teaching, cross-school collaboration, and long-term longitudinal tracking.

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