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"From the Field to the Classroom": A Study on the Construction of an Urban-Rural Co-Creative Design Teaching Model in the Context of Digital Countryside

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Abstract:
This study focuses on the challenges posed by the disconnect between traditional design education and societal demands within the context of the Digital Village Strategy and integrated urban-rural development. It proposes and constructs an urban-rural co-creation design teaching model termed From Field to Classroom. By deeply integrating Project-Based Learning (PBL) and Co-creation theory, it systematically elucidates the core elements and operational logic of this co-creation-based design teaching model, establishing a comprehensive teaching system comprising four stages: teaching preparation, pre-class learning, in-class exploration, and post-class reflection. The study aims to provide an innovative paradigm with theoretical depth and practical guidance for reforming design education in the new era.

Keywords:
Urban-Rural Co-creation, Design Teaching Model, Project-Based Learning, Co-creation Theory, Digital Village Strategy

1. Introduction

China is vigorously advancing its Digital Village Strategy and urban-rural integration development, leveraging digital technologies to promote rural revitalisation and facilitate the bidirectional flow and balanced development of urban-rural resources. Digital Village Strategy not only reshapes rural economic and social structures but also generates new requirements for design education and the cultivation of design talent: design students must possess interdisciplinary knowledge backgrounds and be capable of employing digital technologies and design thinking to resolve authentic, complex rural challenges. Against this backdrop, higher education design programmes should transition from traditional classroom paradigms towards innovation-oriented approaches grounded in real-world contexts, thereby responding to national strategic imperatives.

Design education faces a core contradiction: on the one hand, vast rural areas harbour rich, vibrant cultural resources alongside numerous pressing development challenges. On the other, universities host large numbers of creative faculty and students eager for practical experience. Yet an effective connection mechanism is lacking between these two entities—university curricula seldom engage directly with authentic rural projects,

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while rural communities lack channels to absorb academic intellectual and creative resources. This mismatch between supply and demand calls for a new educational paradigm that organically links the field (rural society) with the classroom (university teaching), enabling education to better serve society and take root locally.

This study aims to propose an innovative urban-rural co-creation design teaching model, systematically elucidating its constituent elements, interactive mechanisms, and practical value. It seeks to achieve the dual objectives of enhancing students' comprehensive design capabilities while addressing genuine rural needs, thereby providing reference for design education reform in the new era. Centred on these objectives, the research focuses on the following questions:

(1)What core elements should an effective urban-rural co-creation design teaching model encompass? What are the specific connotations of each element?

(2)What intrinsic logical connections and interactive mechanisms exist between these elements?

(3)How does this model theoretically unify the dual objectives of enhancing students comprehensive abilities and serving rural development? That is, how are pedagogical value and social value balanced and synergised?

2. Literature Review

2.1 Project-Based Learning (PBL)

Project-Based Learning (PBL) emphasises project-driven approaches to stimulate student-centred learning. Its core principle involves facilitating knowledge acquisition and competency development through project implementation within real-world problem contexts. Blumenfeld et al. (1991) noted in their seminal research that PBL simultaneously enhances learning motivation and promotes deep cognitive engagement. By guiding students to persistently explore complex problems with no ready-made answers, it fosters deep thinking and collaborative problem-solving abilities. [1] This research emphasises that well-designed projects should spark interest, enhance self-efficacy, and direct students' focus towards learning objectives rather than mere performance metrics. Teachers and technology serve as critical supports for sustaining PBL's effectiveness. Kokotsaki et al. (2016) conducted a comprehensive literature review to explore PBL's definition, evidence of effectiveness, facilitating factors, and recommendations for successful implementation. [2] The study particularly noted that while numerous investigations demonstrate PBL is positive impact on students, most employ quasi-experimental designs, precluding definitive causal conclusions between PBL and student outcomes.

Within design education, PBL applications demonstrate significant advantages. Lai (2021), in their study of online art classrooms, drew upon Krajcik and Shin (2014) to elaborate on six key characteristics of project-based learning: posing driving questions, focusing on learning goals, engaging in authentic and discipline-based practices, enhancing collaboration, using technology tools to support learning, and creating artefacts. Through specific student project examples, the study demonstrated the application of these six PBL characteristics. Students integrated social issues (such as gender inequality) with artistic creation through art research projects (e.g., digital collages, poster design). This fully exemplified PBL's practical value of learning by doing and demonstrated nascent understanding of professional art tools and critical issues. [3] This re-

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search indicates that PBL aligns with digital learners' cognitive preferences, online course design, and artistic discipline requirements.

Most research indicates that PBL is an effective teaching method for enhancing student learning outcomes in higher education. However, project topics selected in traditional PBL applications sometimes remain detached from real community contexts, confined to hypothetical scenarios lacking genuine stakeholder participation. This disconnect between project origins and authentic communities undermines the development of students' abilities to address real-world problems. Consequently, integrating PBL with genuine community needs has become a critical issue in current design education reform.

2.2 Co-creation Theory

Co-creation theory emphasises the collaborative participation of multiple stakeholders in generating value or resolving problems. Sanders and Stappers (2008) define co-creation as a creative activity shared by two or more individuals, with co-design serving as a specific instance of co-creation. [4] This research underscores that the rise of co-creation imposes new demands on design education. Future curricula will need to cultivate hybrid talents, blurring the boundaries between design and research. Within the design field, the co-creation concept dismantles the divide between experts and users, advocating for collaborative efforts among designers, users, and communities to jointly identify problems and generate creative solutions. Prahalad and Ramaswamy (2004), in their pioneering research on value co-creation, proposed four fundamental building blocks for achieving co-creation experiences: the DART model. This comprises Dialogue, Access, Risk-benefits, and Transparency, providing a theoretical framework for understanding and implementing co-creation. [5] This model emphasises the necessity of establishing effective dialogue mechanisms among participants during co-creation, ensuring transparency of information and equitable risk-benefit sharing. This theory offers fresh perspectives for implementing co-creation in education, highlighting the joint construction of learning experiences and the co-creation of value. Regarding its application in education, Bovill (2020) contends that co-creation in higher education should not be confined to extracurricular projects involving a select few elite students. Instead, it should evolve towards a more inclusive 'whole-class co-creation' model. This research contends that integrating co-creation principles and practices into daily coursework—enabling all students to participate in negotiating and designing learning content, teaching methods, and assessment processes—constitutes a key pathway towards achieving more democratic, transformative, and equitable higher education.

In summary, existing research offers valuable insights for designing educational reform within their respective fields. PBL provides a project-driven framework, while co-creation concepts expand the boundaries of collaborative partnerships. However, few studies systematically integrate these theoretical elements to construct a comprehensive, actionable teaching model specifically tailored to the Digital Village context. For instance, Cao Yiping et al. (2019) pioneered design education practices within China's rural revitalisation framework. They advocate that design education must adopt a practice-centred multi-stakeholder model, embedding teaching within authentic rural cultural contexts. Their decade-long project demonstrates this approach's efficacy in cultivating talent and advancing rural development. Nevertheless, this research concentrates on offline community building and the revitalisation of traditional rural culture. [7] In summary, existing research has yet to adequately address the new demands placed upon design education by the development of the digital countryside. Consequently, this study aims to propose, through theoretical integration, a

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new model of urban-rural co-creation design teaching that can function effectively within digital countryside scenarios.

3. Core Elements and Operational Logic of the Urban-Rural Co-creation Design Teaching Model

3.1 Core Elements

The urban-rural co-creation design teaching model constitutes a complex system comprising multiple stakeholders, diverse environments, and multidimensional activities. Its core elements include: students, educators, rural communities, and digital platforms. Through close interaction and collaboration, these elements collectively drive the model's operation and value generation. This embodies the PBL approach's emphasis on authentic contexts and collaborative learning, alongside co-creation theory’s advocacy for multi-stakeholder participation and shared value creation.

Students serve as the primary learners. Within the PBL framework, they enhance their comprehensive abilities by immersing themselves in rural settings and solving practical problems. Through co-creation, they collaborate with communities to identify issues and generate innovative solutions. Teachers transition from knowledge disseminators to facilitators and coordinators, responsible for designing pedagogical frameworks, integrating resources, and managing multi-stakeholder communication. As Kong Fansen et al. (2021) note, the core role of teachers as information processors and knowledge producers inherently requires their capacity to analyse, deconstruct, distil, and reconfigure academic knowledge. Teachers cannot simply present raw, complex academic literature to students; they must first undertake thorough deconstruction and processing themselves, then present it to students in a clearer, more structured, and more inspiring manner to construct an efficient teaching information field. [8] Rural communities serve as practical domains, providing authentic problem contexts and local resources while directly participating in the design process to ensure outcomes' contextual relevance and practical efficacy. Digital platforms function as technological conduits bridging urban-rural divides and supporting co-creation. Through features such as rural digital twin modules, they furnish students with virtual research and experimental environments while delivering efficient support for multi-stakeholder collaboration.

These core elements form a dynamic interactive network. Supported by the digital platform, students and teachers engage in deep interaction with rural communities to jointly identify problems, devise solutions, and validate practices. This interactive mechanism embodies the multi-party collaboration central to collaborative learning and co-creation theory within PBL. Feedback from rural communities is transmitted in real-time to teachers and students via the digital platform, facilitating iterative refinement of solutions. This underscores the critical importance of continuous dialogue and feedback within the co-creation process. Teachers utilise the platform to track and evaluate students' learning processes, adjusting pedagogical strategies according to rural community needs to ensure effective PBL project implementation. Functioning as a hub for information and collaboration flows, the digital platform guarantees seamless connectivity and efficient synergy between urban and rural areas, between teachers and students, and between educators and communities.

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3.2 Operational Logic

The operational logic of the urban-rural co-creation design teaching model follows a spiralling ascent: problem-driven → co-creation practice → value generation → reflective iteration. This aims to achieve a dual unification of pedagogical and societal value. This cyclical logic ensures the model's dynamic adaptability, openness, and capacity for continuous optimisation, deeply integrating PBL's problem-driven approach with the collaborative value of co-creation theory.

Problem-driven approaches serve as the logical starting point and core driving force of the teaching model, constituting a central feature of PBL. From initial problem identification to subsequent demand refinement, authentic rural issues permeate the entire teaching process, ensuring targeted and practical content. Under this problem-driven framework, the model enters the co-creation practice phase. Students, educators, and rural community members jointly engage in design practice supported by digital platforms. This encompasses field research, co-creation workshops, and a sequence of activities including conceptualisation and validation of solutions. Co-creation practice emphasises the deep integration and collision of knowledge, experience, and skills. Through multi-stakeholder collaboration, it aggregates diverse wisdom to collectively explore and formulate innovative solutions. This phase embodies the core principle of bidirectional flow: from field to classroom and from classroom to field.

The outcomes of co-creation practice directly drive value generation. The urban-rural co-creation design teaching model pursues dual value creation: firstly, pedagogical value, where students enhance their capabilities in design, interdisciplinary collaboration, digital technology application, and social responsibility; secondly, societal value, where design outcomes tangibly address rural needs, driving industrial development, cultural heritage preservation, and community governance. Finally, the teaching model enters a phase of reflective iteration. Through multi-stakeholder feedback and data recorded via digital platforms, the design and teaching processes undergo continuous refinement. This reflection not only enhances the model's adaptability but also cultivates students' critical thinking and lifelong learning capabilities.

4. Constructing an Urban-Rural Co-Creation Design Teaching Model

Based on the aforementioned core elements and relationships, the construction of the Urban-Rural Co-creation Design Teaching Model will unfold across four core phases: teaching preparation, pre-class learning, in-class exploration, and post-class reflection. Through digital empowerment, it achieves the integration of fieldwork and classroom, fostering synergy between design education and rural revitalisation, as illustrated in Figure 1.

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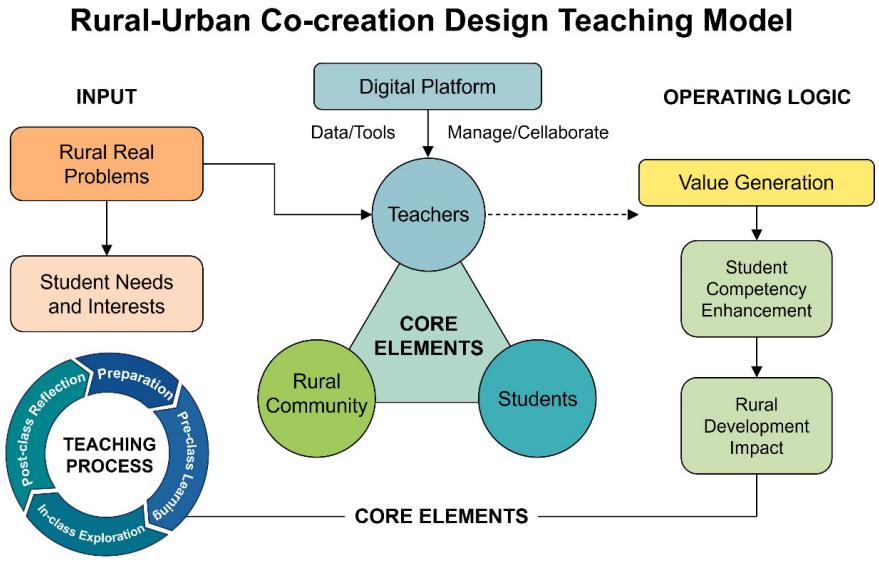


Figure 1: Urban-Rural Co-Creation Design Teaching Model

4.1 Teaching Preparation: Strategic Planning for Co-creation Practice

Teaching preparation requires analysis of instructional objectives, learner characteristics, learning content, and the urban-rural co-creation environment. Objectives should balance cultivating students' design capabilities with addressing actual rural needs. Learners encompass not only students but also community residents, officials, and industry leaders. Learning content emphasises localised practice and interdisciplinary integration, translating into specific tasks such as rural brand design, agricultural product packaging, and tourism route planning.

The modernisation of rural construction and agricultural transformation constitutes a complex systemic endeavour that cannot rely solely on the isolated collaboration of agricultural institutions and agronomy disciplines. It necessitates the deep integration of agricultural engineering, agricultural humanities, and agricultural technology. [9] Consequently, content design must synthesise multidisciplinary knowledge and diverse resources. Urban-rural co-creation environments leverage digital platforms combined with virtual reality to form practice domains integrating virtual and physical dimensions. For instance, Zhong Qiubo et al. (2025) utilised Ningbo Institute of Technology's Robotics College as a case study, establishing a project-based assessment system centred on "data-driven + process-integrated" principles within an intelligent learning platform. [10] Through deep integration of physical spaces and digital platforms, this co-creation environment will provide students with a practice arena where they can both immerse themselves in rural contexts and engage in digitally empowered efficient design. This effectively bridges the physical and cognitive gap between fieldwork and classroom learning, thereby better supporting PBL implementation and realising co-creation value.

4.2 Pre-class Learning: Problem-Oriented Independent Inquiry

Preparatory groundwork is particularly crucial at this stage. Students must not only build knowledge reserves but also cultivate empathy and cross-cultural communication skills. Through online interviews, view-

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ing rural documentaries, and studying relevant case studies, they should strive to understand the authentic needs, cultural contexts, and lifestyles of rural communities. This prepares them psychologically and cognitively for effective co-creation with community members. Online communication tools provided by digital platforms also enable students to establish preliminary contact with rural communities and conduct basic needs discussions. This allows them to gain a more comprehensive understanding of the real-world situations they will encounter before entering the field. During this stage, teachers primarily act as facilitators and resource providers. Through online Q&A sessions, recommending learning resources, and organising virtual seminars, they ensure students can conduct self-directed exploration efficiently and prepare thoroughly for co-creation practice. Pre-class learning activities focus on student-led inquiry and preliminary collaborative exchanges.

4.3 In-Class Exploration: Deep Urban-Rural Co-Creation and Practical Validation

In-class exploration constitutes the core component of the Urban-Rural Co-creation Design Teaching Model, emphasising deep co-creation, practical validation, and iterative refinement among students, teachers, and rural community members within authentic contexts. First comes field research and needs reassessment, where student teams immerse themselves in rural communities. Through face-to-face exchanges with villagers and local officials, employing interviews, observation, and participatory activities, they reaffirm and deepen their understanding of pre-identified issues and needs. This process emphasises cultivating empathy to ensure design solutions genuinely address local rural requirements. Secondly, collaborative workshops are organised, inviting villagers, artisans, local cultural experts, and others to participate in the design process. For instance, Ding Yaqing (2024) argues that within China's New Liberal Arts development context, design education must transcend traditional, independent course-based teaching models. Instead, it should establish a new pedagogical approach centred on thematic workshops with integration as a core dimension. [11] Through brainstorming, prototyping, and scenario simulations, participants collectively generate ideas and adapt preliminary proposals for localised refinement. Digital co-creation platforms can document workshop processes, share resources, and facilitate real-time feedback to enhance collaborative efficiency. Subsequently, practical validation and iteration occur, where refined design proposals undergo small-scale rural trials—such as prototyping, erecting temporary installations, or conducting pilot operations. Real-world feedback is gathered, with digital co-creation platforms recording data and analysing outcomes to enable rapid iteration and refinement, embodying agile design principles of small steps, rapid iteration. Furthermore, interdisciplinary collaboration and resource integration remain central throughout. Student teams undertake specialised division of labour and cooperation internally, while actively seeking expert support from relevant disciplines both within and outside the university (such as agriculture, economics, culture, and information technology). This integration of diverse resources enhances the comprehensiveness and feasibility of the solutions.

4.4 Post-Project Reflection: Value Consolidation and Sustained Empowerment

Post-project reflection proceeds through dual channels: online exhibition and offline exchange. Students must collate outcomes for platform upload and organise exhibitions to broaden impact, while simultaneously drafting reflective reports summarising strengths and weaknesses. Faculty guide in-depth reflection with multi-stakeholder evaluation. Outstanding work may be curated into case libraries and teaching guides, disseminated through academic conferences and media channels to maximise knowledge sharing and societal

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value.

5. Conclusion

This study, centred on the core concept of From Field to Classroom, systematically explores the construction of an urban-rural co-creation design teaching model within the context of digital rural development. Through in-depth analysis of existing design education challenges, precise identification of digital rural development needs, and the integration of Project-Based Learning (PBL) with co-creation theory, this study developed a teaching model comprising four core phases: teaching preparation, pre-class learning, in-class exploration, and post-class reflection. Driven by authentic problems through PBL, this model ensures students gain deep learning experiences while addressing real rural challenges. By leveraging co-creation theory's multi-stakeholder value creation, the educational process expands into collaborative efforts involving diverse actors, including rural communities, achieving an organic integration of classroom and field. The model operates via a digital co-creation platform that blends virtual and physical elements, supporting multi-party collaborative practice and forming a continuously iterative value generation mechanism.

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