

From Ideological Education to Intelligent Teaching: Exploration and Practice of Digital Reform in Park Landscape Design Course

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Abstract: Park landscape design is a core practical course in landscape architecture and environmental design disciplines, featuring ecologicality, artistry, and sociality. It serves as an important carrier for the implementation of ideological education and the reform of intelligent teaching in these courses. Addressing issues such as fragmented integration of ideological education in traditional teaching, shallow application of digitalization, restricted practical scenarios, and a single evaluation system, this paper constructs a "ideological education immersion + digital empowerment" dual-integration teaching system. It integrates ideological elements such as ecological concepts, cultural inheritance, craftsmanship spirit, and social responsibility with digital technologies like GIS analysis, 3D modeling, and virtual simulation, reconfiguring the teaching content, mode, practice, and evaluation system of the course. Teaching practice has shown that this reform model effectively enhances students' professional practical ability, digital literacy, and comprehensive ideological and political literacy, achieving a unified integration of knowledge imparting, ability cultivation, and value shaping, providing practical references for the digital ideological education reform of design courses.

1. Introduction

In the context of the dual advancement of educational digitalization strategy and the construction of ideological and political education in courses, the teaching models of traditional art and design courses urgently need to undergo transformation and upgrading. The Park Landscape Design course focuses on the planning and creation of urban parks, community green spaces, and ecological recreational areas, closely aligning with national strategies such as ecological civilization construction, urban renewal, and improvement of human settlements. It inherently possesses the attributes of ideological and political education and the potential for digital reform^[1-2]. Currently, most universities still have problems with superficial and fragmented integration of ideological and political education, limited application of digital technologies, insufficient practical educational effectiveness, and one-sided assessment and evaluation in this course. It is difficult to meet the demands of the new era's intelligent landscape industry talents. Based on this, this paper focuses on

the core pain points of the course and explores a reform path that integrates ideological and political education with intelligent teaching, empowering ideological and political education with digital means, strengthening professional teaching, and constructing a high-quality, multi-disciplinary education system to facilitate the cultivation of high-quality landscape design talents.

2. Core problems of traditional course teaching

2.1 Shallow and fragmented integration of ideological and political education

Traditional courses focus on professional knowledge and design skills teaching, while ideological and political education is mostly sporadic and inserted in the classroom, lacking systematic and comprehensive design. The ideological and political elements are limited, merely briefly mentioning the basic concept of ecological protection, without integrating the deep connotations such as the dual carbon target, local culture inheritance, people's livelihood and living environment improvement, and urban ecological restoration into the teaching. At the same time, ideological and political education is disconnected from design practice, unable to guide students to establish the professional concept of "design serving society and landscape empowering people's livelihood", lacking core qualities such as craftsmanship spirit, cultural confidence, and social responsibility, and the goal of cultivating moral education and fostering talents is difficult to be implemented.

2.2 Insufficient application of digital intelligent teaching

The digital construction of the course has a prominent problem of "emphasizing form over integration", with digital applications limited to basic aspects such as electronic courseware and online assignments. In teaching, only basic drawing software such as CAD and SU are routinely used, while less advanced digital technologies such as GIS spatial analysis, big data site assessment, digital twin, and virtual simulation are rarely integrated^[3]. At the same time, there is a lack of systematic digital teaching resources and intelligent training platforms, and classroom teaching, after-class practice, and project design still mainly rely on traditional models, with insufficient intelligence and refinement in teaching, and a serious disconnection from the digital development trend of the intelligent landscape industry^[4].

2.3 Limited practical teaching scenarios and weak effectiveness

Park landscape design is highly practical, and traditional practical teaching heavily relies on offline field research. Due to factors such as the number of sites, time and space conditions, weather environment, and safety management, students are unable to conduct multi-scenario and multi-dimensional research and training. The design topics are mostly virtual propositions, not closely linked to the real park construction needs, industry norms, and people's livelihood pain points. Students are mostly limited to visual effect design, lacking the ability to solve actual ecological, cultural, and people's livelihood problems, and the cultivation of innovative thinking and practical skills is restricted.

2.4 Single and rigid assessment system

Traditional courses adopt the assessment model of "final drawings + single teacher evaluation", emphasizing results and neglecting processes, emphasizing professional achievements and neglecting cultivation of qualities. The assessment dimensions only evaluate basic professional

abilities such as drawing and scheme composition, lacking core assessment indicators such as digital application ability, ecological concept practice, cultural inheritance, humanistic care, and team collaboration, unable to comprehensively measure students' comprehensive qualities, and unable to adapt to the three-in-one educational goals.

3. Dual integration reform framework of "ideological and political education immersion + intelligent teaching"

In response to the existing problems of the course, this paper takes the dual integration of ideological and political education and intelligent teaching as the core, and constructs a reform framework of "ideological and political education as the value guidance, digital empowerment as the technical support, practical implementation as the implementation carrier, and multi-dimensional evaluation as the quality guarantee". It breaks through the integration barriers between ideological and political education and intelligent teaching, integrates ideological and political elements throughout the entire teaching process, reconfigures the teaching system with digital technology, and realizes the coordinated advancement of value shaping and professional ability cultivation. The core ideological and political integration system of the course is shown in Table 1.

Table 1 Dimensions of Ideological and Political Education in Park Landscape Design Course and Key Points for Teaching Integration

The dimension of ideological and political education	Core ideological and political elements	Curriculum Integration Teaching Point	Core educational goals
Ecological national and family sentiments	Ecological civilization, dual carbon goals, ecological restoration, green development	Park ecological layout, creation of sponge landscapes, design of greenland carbon sequestration, protection of original site environment	Establish the concept of giving priority to ecology and enhance the sense of responsibility for ecological civilization construction
Cultural confidence inheritance	Traditional garden aesthetics, regional local culture, and folk culture inheritance	Cultural theme park design, creation of local landscapes, and innovative application of traditional landscaping techniques	Preserve the Chinese garden culture, strengthen cultural confidence and innovation capabilities
Craftsmanship spirit quality	Strive for excellence, maintain strict standards, and be pragmatic and innovative	Detailed refinement of the plan, standardized drawing of the plans, optimization of design details	Cultivate a professional attitude of rigorous scholarship and continuous improvement
Social service responsibility	Humanistic care, universal sharing, urban renewal, elderly-friendly and convenient services	Barrier-free landscape, elderly-friendly design, and minor renovations of community parks	Establish the concept of designing services for the people, and strengthen the sense of social responsibility

Based on the ideological and political education system, we will comprehensively promote the digital smart teaching reform of courses, restructure the entire teaching process including pre-class,

in-class, post-class and practical activities, break the limitations of traditional teaching in terms of time and space and scenarios, and the specific reform comparison model is shown in Table 2.

Table 2 Comparison of Digitalization Reform in Each Teaching Phase of Park Landscape Design Course

Teaching link	Traditional teaching model	Digitalized intelligent reform model	Core advantages of reform
Pre-class study	The textbook theory is too simplistic for pre-reading, making it impossible to accurately assess the learning situation	Online delivery of digital cases, ideological and political micro-lessons, technical tutorials, virtual venue resources, self-study preview + pre-answered questions	Provide abundant learning resources, enable personalized preview, and accurately grasp students' learning situations
Teaching during class	One-way lecture style, with abstract content and poor interactivity	Integrating GIS analysis, 3D modeling, virtual simulation immersive teaching, case dissection + real-time discussion	Concretize professional knowledge, enhance the professionalism and interactivity of the classroom
After-class reinforcement	Submission of paper-based assignments, with delayed feedback and no retention for review and analysis	Digitalized results are submitted online, with intelligent grading and precise comments. A digital student learning record is established	Improve the efficiency of teaching feedback and achieve process-based recording and review
Practical Training	Conducted a field survey offline, but the practical scenarios were limited	Combining virtual simulation training with offline on-site research, innovative design of digital twin scenarios	Break through the limitations of time and space, enrich the training scenarios, and strengthen the digital practical operation ability

4. Digitalized Ideological and Political Reform Practice Pathways

4.1 Modular Reconstruction and Integrated Teaching Content

Reconstruct the course content based on "professional foundation, ideological and political core, and digital technology as the tool", abandon the traditional fragmented chapter-based teaching, and set up six core teaching modules relying on real park design projects, achieving the full integration of ideological and political elements and digital technology throughout the process. The site investigation module integrates GIS digital site analysis technology, combined with ecological protection and local culture ideological and political elements, guiding students to respect the original texture of the site; the scheme design module focuses on urban renewal and convenience service needs, implants humanistic care and social responsibility concepts, presenting design value through 3D visualization technology; the specialized design module integrates traditional garden aesthetics and modern digital rendering technology, achieving the combination of cultural inheritance and digital innovation. At the same time, industry benchmark cases, ecological construction achievements, and the spirit of great craftsmen cases are integrated into digital teaching resources, achieving silent ideological education and digital empowerment for quality improvement.

4.2 Innovative Smart Hybrid Teaching Methods

Combining the advantages of the digital platform, create immersive, project-based, and discussion-style multi-modal teaching models. First, virtual simulation immersive teaching, relying on the park virtual training platform, restore various types of site scenarios, allowing students to complete exploration, design, and analysis online, practicing ecological design concepts in digital practice; second, real project-driven teaching, using community park micro-updating, rural park renovation, etc. as carriers, requiring students to complete the entire design using digital technology, combining people's livelihood needs to optimize the plan, and honing the spirit of craftsmanship and service awareness; third, online and offline mixed discussions, relying on the online platform to push ideological and political cases and digital design achievements, organizing students to discuss the ecological value, humanistic connotation in the design, synchronously improving professional ability and ideological and political literacy.

4.3 Build an Integrated Digital Ideological and Political Resource Library

Integrate high-quality teaching resources, build an online shared resource library integrating ideological and political cases, digital technology tutorials, virtual site models, and excellent achievements display. The ideological and political case section includes benchmark projects such as ecological restoration, cultural inheritance, and barrier-free design; the digital technology section covers practical tutorials such as GIS, 3D modeling, and digital rendering; the virtual site floor section provides training scenarios for parks in multiple regions and terrains; the achievements display section includes outstanding digital design works of students^[5-6]. The resource library is fully open, supporting students' autonomous learning and innovative practice, providing solid resource support for ideological education immersion and intelligent teaching.

4.4 Construct a Multi-dimensional and Three-dimensional Evaluation System

Reform the single evaluation model, establish a digital comprehensive evaluation system of "process + result, ability + literacy, multi-party mutual evaluation", with a total score of 100 points, where the process evaluation accounts for 60% and the result evaluation accounts for 40%. The process evaluation focuses on online learning, digital training, classroom discussions, ideological and political cognition, team collaboration, etc. performance; the result evaluation takes the digital design plan at the end of the term and the results report as the core, mainly assessing the ecological, humanistic, innovative, and implementation nature of the design. At the same time, introduce multiple evaluation entities such as teacher evaluation, group mutual evaluation, student self-evaluation, and industry evaluation, achieving evaluation-driven learning and education, fully implementing the three-in-one educational goal.

5. Reform Practice Effects

5.1 Comprehensive Student Literacy Has Been Significantly Improved

After multiple semesters of teaching practice, the course reform has achieved certain practical effects. Students have comprehensively mastered digital landscape design technology, breaking away from the limitations of traditional hand-drawn design, and the level of scheme refinement and intelligence has significantly improved. At the same time, students' design concepts have significantly changed, abandoning the utilitarian thinking of pursuing visual effects one-sidedly, actively integrating ecological protection, local culture, elderly-friendly convenience, etc. into the

design, significantly enhancing ecological literacy, cultural confidence, and social responsibility. The students' innovative practical ability has steadily improved, and the number of awards in various landscape design competitions and innovation projects has significantly increased, with continuous improvement in comprehensive competitiveness.

5.2 The curriculum education system has become more complete

This reform has alleviated the core problems of fragmented ideological education in traditional courses and shallow digital teaching. It has constructed a full-process and deep-level "ideological education + digital technology" integrated education system. Course teaching has shifted from the sole imparting of knowledge and skills to the collaborative education of value shaping, ability cultivation, and knowledge transmission. It has formed a characteristic teaching model of digital empowerment, ideological education, and practical implementation. The quality of course teaching and the systematicness of education have significantly improved, aligning with the training positioning of landscape architecture professionals in the new era.

5.3 The adaptability of talents to the industry has been significantly enhanced

The reform closely follows the development trends of smart and ecological landscaping industries, integrating cutting-edge digital technologies, industry norms, national strategies, and people's livelihood needs into the teaching. It effectively narrows the gap between classroom teaching and industry practice. The students trained possess solid digital design capabilities, advanced ecological design concepts, and good professional qualities. They can quickly adapt to job requirements such as urban renewal, ecological restoration, and smart landscape construction. The students' job adaptability and comprehensive employment quality have been improved to a certain extent.

6. Conclusion

This article addresses the core pain points of traditional teaching and constructs a "thought and politics immersion + digital empowerment" dual-integration teaching system. It reconfigures teaching content, innovates intelligent teaching models, builds a digital resource platform, and improves multi-dimensional evaluation mechanisms. Practice has shown that this reform model can effectively enhance students' professional skills, digital literacy, and comprehensive ideological and political qualities, and improve the collaborative education system of the course. In the future, we will continuously iterate and optimize teaching resources and teaching models, deepen the integration of digital technology and ideological and political education, create excellent intelligent ideological and political courses, and provide strong support for the high-quality talent cultivation of landscape architecture.

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References

- [1] Walliss J, Rahmann H. *Landscape architecture and digital technologies: Re-conceptualising design and making*[M]. Routledge, 2016.
- [2] Fricker P, Hayek U W, Monacella R. *Digital Landscape Architecture Education—Where Do We Stand and Where Should We Go?*[J]. *Journal of Digital Landscape Architecture*, 2023, 2023(8): 576-584.
- [3] Hsu C Y, Ou S J. *Innovative practice of sustainable landscape architecture education—parametric-aided design and application*[J]. *Sustainability*, 2022, 14(8): 4627.
- [4] Tang J, Huang P, Yan S. *Digital transformation in higher education: Logical framework, practical dilemmas, and implementation approaches*[J]. *Frontiers in Psychology*, 2025, 16: 1565591.
- [5] Zhang J, Zhu J, Tu W, et al. *The effectiveness of a digital twin learning system in assisting engineering education courses: A case of landscape architecture*[J]. *Applied Sciences*, 2024, 14(15): 6484.
- [6] Yu A, Xu Z. *On the application of digitized virtual reality technology in the teaching of landscape architecture design*[J]. *International Journal of Information and Communication Technology Education (IJICTE)*, 2024, 20(1): 1-20.